

## Table of Contents

<b>Executive Summary .....</b>	<b>ES-1</b>
Project Objectives, Purpose, and Need .....	ES-1
Background and Description of Proposed Project .....	ES-2
Proposed Project Environmental Impacts and Mitigation .....	ES-4
Air Quality .....	ES-4
Public Safety and Hazardous Materials .....	ES-5
Noise and Vibration .....	ES-5
Public Services .....	ES-5
Land Use and Policy Consistency Analysis .....	ES-5
Transportation and Circulation .....	ES-5
Water Resources .....	ES-6
Alternatives to THE Proposed Project .....	ES-6
No Project Alternative .....	ES-6
Summit Pump Station Truck Unloading .....	ES-6
Southbound Route Alternative .....	ES-7
Comparison of Proposed Project and Alternatives .....	ES-7
No Project Alternative .....	ES-7
Summit Pump Station Truck Unloading .....	ES-7
Southbound Route Alternative .....	ES-8
Environmentally Superior Alternative .....	ES-8
Known Areas of Controversy or Unresolved Issues .....	ES-8
<b>1.0 Introduction .....</b>	<b>1-1</b>
1.1 Proposed Project Objectives .....	1-3
1.2 Agency Use of the Document .....	1-3
1.3 EIR Process and Scope .....	1-4
1.4 Previous CEQA Documents .....	1-6
1.5 EIR Contents .....	1-6
<b>2.0 Project Description .....</b>	<b>2-1</b>
2.1 Project Background .....	2-1
2.1.1 Current Operations .....	2-5
2.1.2 Crude Oil Classifications and Delivery to the Refinery .....	2-5
2.1.2.1 Santa Maria Pump Station .....	2-7
2.1.2.2 Orcutt Pump Station .....	2-9
2.1.2.3 Summit Pump Station .....	2-9
2.1.3 Current SMF Operations .....	2-11
2.1.4 Fuel Gas Processing and Handling .....	2-11
2.1.5 Coking Units and Coke Handling .....	2-13
2.1.6 Water Processing .....	2-14
2.1.7 Transportation of Products .....	2-17
2.1.7.1 Pump Stations .....	2-19

2.1.8	Utilities and Ancillary Systems .....	2-21
2.1.9	Utility and Water Usage.....	2-22
2.1.10	Employees and Scheduling.....	2-23
2.1.11	Chemical Usage and Waste .....	2-23
2.2	Proposed Project Description.....	2-24
<b>3.0</b>	<b>Cumulative Projects Description .....</b>	<b>3-1</b>
3.1	Boundary of Cumulative Projects Study Area.....	3-2
3.2	Description of Cumulative Projects .....	3-2
3.2.1	Caltrans .....	3-9
<b>4.0</b>	<b>Environmental Analysis.....</b>	<b>4-1</b>
	Introduction to Environmental Analysis.....	4-1
	Effects Not Found to be Significant.....	4-1
	Assessment Methodology .....	4-2
	Significance Criteria .....	4-2
	Impact Analysis .....	4-3
	Formulation of Mitigation Measures and Mitigation Monitoring Program.....	4-3
	Impacts of Alternatives .....	4-4
	Cumulative Projects Impact Analysis.....	4-4
4.1	Air Quality .....	4.1-1
4.1.1	Environmental Setting .....	4.1-1
4.1.1.1	Air Quality Monitoring.....	4.1-1
4.1.1.2	Countywide Emissions Inventory .....	4.1-7
4.1.1.3	Greenhouse Gasses .....	4.1-11
4.1.1.4	Current Emissions from Refinery Operations.....	4.1-19
4.1.2	Regulatory Setting .....	4.1-26
4.1.2.1	Air Quality .....	4.1-26
4.1.2.2	Local .....	4.1-27
4.1.2.3	Greenhouse Gas Emissions Regulations.....	4.1-29
4.1.3	Significance Criteria .....	4.1-33
4.1.3.1	Operational Thresholds.....	4.1-34
4.1.4	Project Impacts.....	4.1-36
4.1.5	Other Issue Area Mitigation Measure Impacts .....	4.1-47
4.1.6	Cumulative Impacts .....	4.1-47
4.1.7	Mitigation Monitoring Plan .....	4.1-48
4.2	Public Safety and Hazardous Materials .....	4.2-1
4.2.1	Environmental Setting .....	4.2-1
4.2.1.1	Study Area and Scope.....	4.2-1
4.2.1.2	Characteristics of Crude Oil and Natural Gas.....	4.2-2
4.2.1.3	Risk Assessment Methodology.....	4.2-3
4.2.1.4	Existing Operations.....	4.2-31
4.2.2	Regulatory Setting .....	4.2-35
4.2.2.1	Federal Laws and Regulations.....	4.2-35

4.2.2.2 California Laws and Regulations.....	4.2-40
4.2.2.3 Other Applicable Guidelines, National Codes, and Standards .....	4.2-47
4.2.3 Significance Criteria .....	4.2-50
4.2.4 Project Impacts and Mitigation Measures.....	4.2-51
4.2.4.1 Other Issue Area Mitigation Measure Impacts .....	4.2-53
4.2.5 Cumulative Impacts and Mitigation Measures .....	4.2-53
4.2.6 Mitigation Monitoring Plan .....	4.2-53
4.3 Noise and Vibration .....	4.3-1
4.3.1 Environmental Setting .....	4.3-1
4.3.1.1 Noise Effects.....	4.3-1
4.3.1.2 Noise Terminology .....	4.3-3
4.3.1.3 Vibration .....	4.3-6
4.3.1.4 Sensitive Receptors.....	4.3-8
4.3.1.5 Existing Noise Sources .....	4.3-9
4.3.1.6 Noise Measurements.....	4.3-12
4.3.2 Regulatory Setting .....	4.3-13
4.3.2.1 State Regulations .....	4.3-13
4.3.2.2 County Local Ordinances and Policies .....	4.3-13
4.3.3 Significance Criteria .....	4.3-17
4.3.3.1 Operations Traffic.....	4.3-17
4.3.3.2 Operations Stationary Sources.....	4.3-17
4.3.4 Project Impacts and Mitigation Measures.....	4.3-18
4.3.5 Other Issue Area Mitigation Measure Impacts .....	4.3-19
4.3.6 Cumulative Impacts .....	4.3-19
4.3.7 Mitigation Summary/Monitoring Plan.....	4.3-20
4.4 Public Services.....	4.4-1
4.4.1 Environmental Setting .....	4.4-1
4.4.1.1 Water Supply Utility .....	4.4-1
4.4.1.2 Sanitary Wastewater .....	4.4-2
4.4.1.3 Solid Waste Disposal .....	4.4-3
4.4.1.4 Energy.....	4.4-6
4.4.1.5 Fire Protection Services .....	4.4-9
4.4.2 Regulatory Setting .....	4.4-12
4.4.2.1 Federal.....	4.4-12
4.4.2.2 State.....	4.4-12
4.4.2.3 County.....	4.4-14
4.4.2.4 Other Codes and Standards.....	4.4-16
4.4.3 Significance Criteria .....	4.4-18
4.4.4 Project Impacts and Mitigation Measures.....	4.4-19
4.4.4.1 Water Supply .....	4.4-19
4.4.4.2 Sanitary Wastewater .....	4.4-19
4.4.4.3 Solid Waste (non-hazardous).....	4.4-20
4.4.4.4 Energy.....	4.4-21
4.4.4.5 Fire Protection.....	4.4-22

4.4.5	Other Issue Area Mitigation Measure Impacts .....	4.4-22
4.4.6	Cumulative Impacts and Mitigation Measures .....	4.4-23
4.5	Land Use and Policy Consistency Analysis.....	4.5-1
4.5.1	Environmental Setting .....	4.5-1
4.5.1.1	Background.....	4.5-1
4.5.1.2	Existing Land Use.....	4.5-1
4.5.1.3	Land Use Plans, Policies, Sections & Standards .....	4.5-2
4.5.1.4	San Luis Obispo County General Plan .....	4.5-2
4.5.1.5	San Luis Obispo County Local Coastal Program .....	4.5-12
4.5.1.6	South County Coastal Area Plan.....	4.5-15
4.5.1.7	Zoning.....	4.5-16
4.5.2	Regulatory Setting .....	4.5-16
4.5.2.1	Federal.....	4.5-17
4.5.2.2	State.....	4.5-17
4.5.2.3	Local .....	4.5-18
4.5.3	Significance Criteria .....	4.5-20
4.5.4	Proposed Project Impacts and Mitigation Measures.....	4.5-20
4.5.5	Policy Consistency Analysis.....	4.5-22
4.5.5.1	San Luis Obispo County General Plan .....	4.5-22
4.5.5.2	San Luis Obispo County Local Coastal Program .....	4.5-39
4.5.5.3	South County Coastal Area Plan.....	4.5-46
4.5.6	Cumulative Impacts and Mitigation Measures .....	4.5-47
4.6	Transportation and Circulation .....	4.6-1
4.6.1	Environmental Setting .....	4.6-1
4.6.1.1	Background.....	4.6-1
4.6.1.2	Methods of Describing Traffic.....	4.6-1
4.6.1.3	Existing Conditions.....	4.6-4
4.6.1.4	Project Area Overview.....	4.6-6
4.6.2	Regulatory Setting .....	4.6-10
4.6.2.1	Federal.....	4.6-10
4.6.2.2	State.....	4.6-10
4.6.2.3	Local .....	4.6-10
4.6.3	Significance Criteria .....	4.6-11
4.6.4	Project Impacts and Mitigation Measures.....	4.6-12
4.6.5	Mitigation Monitoring Plan .....	4.6-13
4.7	Water Resources .....	4.7-1
4.7.1	Environmental Setting .....	4.7-1
4.7.1.1	Water Quantity.....	4.7-1
4.7.1.2	Water Quality.....	4.7-12
4.7.2	Regulatory Setting .....	4.7-13
4.7.2.1	Federal Policies and Regulations .....	4.7-13
4.7.2.2	State Policies and Regulations .....	4.7-14
4.7.2.3	Local Policies and Regulations.....	4.7-16
4.7.3	Significance Criteria .....	4.7-16

4.7.4	Project Impacts and Mitigation Measures.....	4.7-17
4.7.5	Cumulative Impacts and Mitigation Measures .....	4.7-21
4.7.6	Mitigation Monitoring Plan .....	4.7-21
4.8	Other Issue Areas.....	4.8-1
4.8.1	Aesthetics.....	4.8-1
4.8.2	Agricultural Resources.....	4.8-1
4.8.3	Cultural Resources.....	4.8-1
4.8.4	Geology and Soils.....	4.8-1
4.8.5	Population and Housing.....	4.8-1
4.8.6	Recreation .....	4.8-2
4.8.7	Biological Resources .....	4.8-2
<b>5.0</b>	<b>ConocoPhillips Project Alternatives Analysis .....</b>	<b>5-1</b>
5.1	Description of Alternatives and Screening Analysis .....	5-2
5.2	No Project Alternative .....	5-3
5.3	Reduced Refinery Throughput Increase.....	5-5
5.4	Increased Rail Transport .....	5-6
5.5	Santa Maria Refinery Truck Unloading.....	5-6
5.6	Summit Pump Station Truck Unloading.....	5-7
5.7	Orcutt Pump Station Truck Unloading .....	5-7
5.8	Alternative Transportation Routes.....	5-8
5.8.1	Northbound Route Alternative.....	5-8
5.8.2	Eastbound Route Alternative .....	5-9
5.8.3	Southbound Route Alternative.....	5-10
5.9	Impacts of Alternatives .....	5-11
<b>6.0</b>	<b>Comparison of Proposed Project and Alternatives .....</b>	<b>6-1</b>
6.1	Environmental Analysis of Selected Alternatives .....	6-2
6.1.1	No Project Alternative .....	6-2
6.1.2	Summit Pump Station Truck Unloading Alternative.....	6-3
6.1.2.1	Air Quality .....	6-3
6.1.2.2	Public Safety and Hazardous Materials .....	6-4
6.1.2.3	Noise and Vibration .....	6-5
6.1.2.4	Public Services and Utilities .....	6-5
6.1.2.5	Land Use and Policy Consistency Analysis.....	6-6
6.1.2.6	Water Resources .....	6-6
6.1.2.7	Transportation.....	6-7
6.1.2.8	Other Issue Areas.....	6-7
6.1.3	Southbound Route Alternative.....	6-8
6.1.3.1	Air Quality .....	6-8
6.1.3.2	Public Safety and Hazardous Materials .....	6-8
6.1.3.3	Noise and Vibration .....	6-8

6.1.3.4	Public Services and Utilities .....	6-8
6.1.3.5	Land Use and Policy Consistency Analysis.....	6-8
6.1.3.6	Transportation .....	6-9
6.1.3.7	Water Resources .....	6-9
6.1.3.8	Other Issue Areas .....	6-9
6.2	Comparison of Proposed Project and Alternatives .....	6-9
6.3	Environmentally Superior Alternative Analysis.....	6-13
6.3.1	Proposed Project Versus Alternatives.....	6-13
6.3.1.1	Proposed Project Versus the No Project Alternative .....	6-14
6.3.1.2	Proposed Project Versus the Summit Pump Station Truck Unloading Alternative 6-14	
6.3.1.3	Proposed Project Versus the Southbound Route Alternative .....	6-15
6.3.2	Environmentally Superior Alternative.....	6-15
<b>7.0</b>	<b>Other CEQA-Mandated Sections .....</b>	<b>7-1</b>
7.1	Significant Irreversible Environmental Changes That Would be Caused by the Proposed Project Should It be Implemented.....	7-1
7.2	Growth-Inducing Impacts .....	7-2
7.2.1	Removal of an Impediment to Growth .....	7-2
7.2.2	Economic Growth .....	7-2
7.2.3	Precedent-Setting Action .....	7-2
7.2.4	Development of Open Space .....	7-3
7.3	Energy Conservation.....	7-3
<b>8.0</b>	<b>Summary of Mitigation Measures and Mitigation Monitoring Plan 8- 1</b>	
8.1	Mitigation Monitoring Program.....	8-1
8.2	Monitoring Authority and Enforcement Responsibility .....	8-1
8.3	Mitigation Compliance Responsibility .....	8-2
8.4	General Monitoring Procedures .....	8-2
8.5	Mitigation Monitoring Table .....	8-3
<b>9.0</b>	<b>List of EIR Preparers .....</b>	<b>9-1</b>
<b>10.0</b>	<b>Agencies and Individuals Consulted During EIR Preparation .....</b>	<b>10-1</b>

## List of Figures

Figure ES-1	Proposed Project Location .....	ES-3
Figure 1-1	Location of the Santa Maria Refinery.....	1-2
Figure 2-1	Facility Location .....	2-2
Figure 2-2	Facility Location and Pipeline Route to Rodeo Refinery .....	2-4
Figure 2-3	Santa Maria Facility Plot Plan .....	2-6
Figure 2-4	Santa Maria Facility and Pipeline Facilities South of the SMF.....	2-8
Figure 2-5	Local Oil Fields.....	2-10
Figure 2-6	Current Operations – Santa Maria Facility Block Flow Diagram .....	2-12
Figure 2-7	Effluent Water Block Flow Diagram.....	2-16
Figure 2-8	Historical Coke and Sulfur Production and Movement Levels (Tons).....	2-18
Figure 2-9	Historical Green Coke and Sulfur Movement Levels (Truck Trips) .....	2-19
Figure 2-10	San Luis Obispo County Pump Stations - Pipeline from SMF to Rodeo Refinery2- 21	
Figure 2-11	SMF Operations Areas Photographs.....	2-24
Figure 4.1-1	Nipomo-Guadalupe Meteorological Station Wind Rose – 2009 .....	4.1-8
Figure 4.1-2	Areas Requiring Asbestos ATCM Geological Analysis and Requirements... 4.1-12	
Figure 4.1-3	US Greenhouse Gas Emissions.....	4.1-18
Figure 4.1-4	Transportation Route Diesel Exhaust Health Risk Contours - Cancer .....	4.1-25
Figure 4.2-1	Steps Involved in Developing a Quantitative Risk Assessment .....	4.2-5
Figure 4.2-2	Santa Maria Pump Station to Refinery Pipeline Elevation Profile .....	4.2-33
Figure 4.3-1	Sensitive Receptors and Noise Monitoring Locations Near the Project Site....	4.3-9
Figure 4.3-2	Land Use Compatibility for New Development near Transportation Noise Sources .....	4.3-15
Figure 4.4-1	Area Landfills.....	4.4-5
Figure 4.4-2	San Luis Obispo County Fire Stations.....	4.4-11
Figure 4.5-1	Land Use Designations of the Project Area .....	4.5-2
Figure 4.6-1	Traffic Routes .....	4.6-7
Figure 4.7-1	Santa Maria Groundwater Basin and Management Area .....	4.7-2
Figure 4.7-2	Santa Maria Basin – Well Network for Monitoring Shallow Groundwater .....	4.7-3
Figure 4.7-3	Santa Maria Basin – Well Network for Monitoring Deep Groundwater.....	4.7-4
Figure 4.7-4	Generalized Geology of the Arroyo Grande – Nipomo Mesa Area .....	4.7-6
Figure 4.7-5	Geologic Cross Section A – A’ .....	4.7-7
Figure 4.7-6	Geologic Cross Section B – B’ .....	4.7-8
Figure 4.7-7	Geologic Cross Section C – C’ .....	4.7-9

Figure 5-1 Location of Alternatives ..... 5-4  
 Figure 5-2 Northbound Route Alternative..... 5-9  
 Figure 5-3 Eastbound Route Alternative ..... 5-10  
 Figure 5-4 Southbound Route Alternative..... 5-11

**List of Tables**

Table ES-1 Summary of Impacts and Mitigation Measures for the Proposed Project ..... ES-10  
 Table ES-2 Summary of Impacts and Mitigation Measures for the Proposed Project ..... ES-13

Table 2-1 General Project Site Information ..... 2-3  
 Table 2-2 Historical Crude Oil Production ..... 2-5  
 Table 2-3 Properties of Crude Oil Currently Received at the Santa Maria Facility ..... 2-7  
 Table 2-4 Delivery Sources, Volumes, and Truck Trips to the Santa Maria Pump Station in 2009 ..... 2-9  
 Table 2-5 Historical Petroleum Coke Inventories at the SMF ..... 2-13  
 Table 2-6 Truck and Rail Shipping ..... 2-17  
 Table 2-7 Santa Maria Facility Utility Usage ..... 2-22  
 Table 2-8 Baseline and Proposed Project Operations ..... 2-26

Table 3-1 Cumulative Projects ..... 3-3

Table 4.1-1 State and National Criteria Air Pollutant Standards, Effects, and Sources ..... 4.1-4  
 Table 4.1-2 Monitoring Results at the Nipomo Monitoring Station ..... 4.1-6  
 Table 4.1-3 Attainment Status of Criteria Pollutants in the South Central Coast Air Basin 4.1-7  
 Table 4.1-4 San Luis Obispo County Ozone Precursors and PM Emissions by Source.... 4.1-10  
 Table 4.1-5 Global Warming Potential of Various Gasses ..... 4.1-15  
 Table 4.1-6 Electricity Generation Resource Mix and Greenhouse Gas Emissions ..... 4.1-17  
 Table 4.1-7 2009 Refinery Emissions – Annual and Daily..... 4.1-20  
 Table 4.1-8 Offsite Vehicle Emissions Year 2009– Within and Outside of San Luis Obispo County ..... 4.1-21  
 Table 4.1-9 Greenhouse Gas Emissions - Refinery Operations 2007, metric tonnes ..... 4.1-22  
 Table 4.1-10 2004 Toxic Emissions From Santa Maria Refinery ..... 4.1-23  
 Table 4.1-11 SLOC APCD Thresholds of Significance for Operational Emissions..... 4.1-34  
 Table 4.1-12 SLOC APCD Thresholds of Significance for Construction Emissions Imp .. 4.1-34  
 Table 4.1-13 Current Draft or Proposed GHG Thresholds in California ..... 4.1-35  
 Table 4.1-14 Proposed Project Refinery Emissions and the Associated Increase ..... 4.1-38  
 Table 4.1-15 Offsite Mobile Emissions – Proposed Project Operations..... 4.1-40  
 Table 4.1-16 Emissions Increases and APCD Thresholds – SMF and Offsite Mobile Sources ..... 4.1-41  
 Table 4.1-17 Refinery and Mobile Emissions Increases and APCD Thresholds-Mitigated 4.1-42  
 Table 4.1-18 Refinery GHG Emissions Increase over the Baseline Operations Scenario... 4.1-45

Table 4.2-1 Frequencies for Common Events..... 4.2-10

Table 4.2-2	Department of Transportation National Gas Transmission Pipelines Incident Causes .....	4.2-13
Table 4.2-3	Thermal Radiation Serious Injury and Impacts .....	4.2-23
Table 4.2-4	Overpressure Damage .....	4.2-25
Table 4.2-5	Fatality and Serious Injury Rates .....	4.2-26
Table 4.2-6	Event Tree Probabilities.....	4.2-29
Table 4.2-7	Hazardous Wastes Generated by the Refinery.....	4.2-34
Table 4.3-1	Representative Environmental Noise Levels .....	4.3-4
Table 4.3-2	Typical Levels of Ground-Borne Vibration.....	4.3-7
Table 4.3-3	Roadway Noise Levels: Noise Element and Calculated Current.....	4.3-10
Table 4.3-4	Existing Ambient Noise Levels Near the Project Site .....	4.3-12
Table 4.3-5	Noise Element Maximum Allowable Noise Exposure - Stationary Sources..	4.3-16
Table 4.3-6	Noise Element Maximum Allowable Noise Exposure - Transportation Sources .....	4.3-16
Table 4.4-1	San Luis Obispo County Class III Landfill Capacity and Usage.....	4.4-4
Table 4.4-2	San Luis Obispo County Electricity and Gas Consumption.....	4.4-7
Table 4.4-3	PG&E Planning Area Electricity Consumption.....	4.4-8
Table 4.4-4	SCGC Planning Area Gas Consumption .....	4.4-9
Table 4.6-1	Level of Service and Volume to Capacity Ratio Parameters.....	4.6-3
Table 4.6-2	LOS Screening Classifications and Roadway Daily Volumes .....	4.6-4
Table 4.6-3	Existing Traffic for Project-Related Roadway Segments.....	4.6-8
Table 4.6-4	Existing Traffic for Project-Related Roadway Intersections .....	4.6-9
Table 4.7-1	Existing and Future Water Usage .....	4.7-12
Table 4.7-2	Potential Future Water Usage in the SMGB.....	4.7-18
Table 5-1	Evaluation and Selection of Potential Alternatives .....	5-3
Table 5-2	Alternative Screening Analysis – Impacts Relative to Proposed Project (Non-Transportation Routes).....	5-12
Table 6-1	Summary of Environmental Impacts for the Proposed Project and Alternatives .....	6-10
Table 8-1	Air Quality .....	8-4
Table 8-2	Public Safety and Hazardous Materials .....	8-6
Table 8-3	Noise and Vibration .....	8-8
Table 8-4	Public Services.....	8-9
Table 8-5	Land Use Policy and Consistency Analysis.....	8-11
Table 8-6	Transportation and Circulation .....	8-12
Table 8-7	Water Resources .....	8-13

## List of Appendices

Appendix A – Air Quality.....	A-1
Appendix B – NOP, Comments, and Responses.....	B-1
Appendix C – NMMATG Annual Report 2009 .....	C-1
Appendix D – List of Abbreviations and Acronyms.....	D-1
Appendix E – References.....	E-1