CHAPTER 2

PROJECT DESCRIPTION

2.0 PROJECT DESCRIPTION

2.1 INTRODUCTION

Chevron Products Company is proposing a project at its El Segundo Refinery (Refinery) to increase the reliability, energy efficiency, flexibility and capacity of specific Refinery equipment. The overall focus of this project is to increase the reliability and energy efficiency of the Refinery's existing equipment, increase the capacity of certain existing equipment, and optimize the ability of specific processes to increase production of CARB regulated transportation fuels and sulfur product derived from the refining process. With respect to the transportation fuel products, the CEC report entitled *Transportation Fuels, Technologies, and Infrastructure Assessment* states: "… as California's population and economic output grow, demand for transportation services and fuel will grow. Petroleum will continue to be the energy resource of choice … total demand for gasoline and diesel fuels will increase by almost 35 percent over the next 20 years." (CEC, 2003)

The Product Reliability and Optimization (PRO) Project includes modifications to existing specific process units, and also new infrastructure that supports and links these units to other processes, units or facilities throughout the Refinery. The proposed project will involve physical changes and additions to multiple process units and operations as well as operational and functional improvements within the confines of the Refinery.

2.2 PROJECT OBJECTIVES

The objectives of the proposed project at the El Segundo Refinery are to:

1. Improve the energy efficiency, performance, and reliability of process units;

2. Allow the Refinery to efficiently and reliably process a wider range of crude oils, including higher sulfur-containing crude oils;

3. Produce lower sulfur fuel products and increase production of commercial grade elemental sulfur;

4. Improve the management of blending components of CARB fuels; and,

5. Reduce the potential for atmospheric releases and related emissions from PRDs in the No. 2 Crude Unit, No. 2 Residuum Unit, and the Minalk/Merox Unit.

The proposed project will not increase or decrease the overall Refinery crude throughput capabilities.

2.3 PROJECT LOCATION

The proposed project will occur within the confines of the Chevron Products Company El Segundo Refinery, except for the associated improvements at the WBMWD that is located just east and also just north of the Refinery. The Refinery, which was constructed over 90 years ago, is located within the overall southern California region, as shown in Figure 2-1. The Refinery is located at 324 West El Segundo Boulevard in the City of El Segundo, California, as shown in Figure 2-2.

2.4 LAND USE AND ZONING

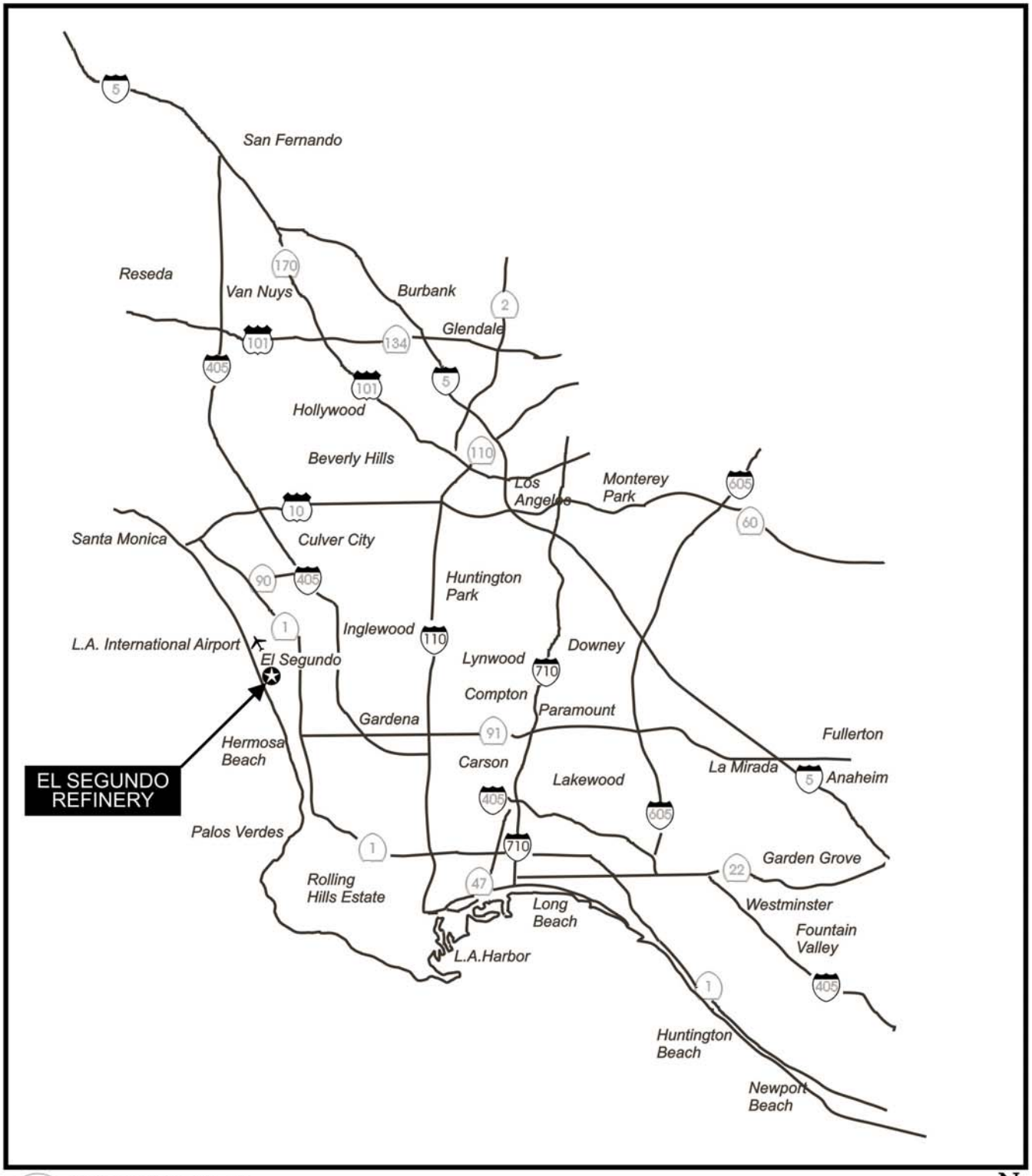
Implementation of the proposed modifications at the Chevron Products Company El Segundo Refinery will occur within existing property boundaries. Land use on the facility property and within the immediate vicinity is mixed use including heavy industry, light industry, manufacturing, commercial, and residential. The closest residential area is immediately adjacent to the property line at the southwest corner of the Refinery. The closest residential area to the proposed project locations within the Refinery is about 1,000 feet.

The Refinery is bounded by El Segundo Boulevard to the north, Sepulveda Boulevard to the east, Rosecrans Avenue to the south, and Vista Del Mar to the west. The Chevron Refinery is located in an area of mixed land uses, with industrial, recreation, residential, and commercially zoned areas nearby. Land use to the north of the Chevron Refinery is primarily residential, with a mix of commercial and light industrial zoning. The predominant adjacent land uses west of the Refinery are nearly all heavy industrial, or open space, which includes: Dockweiler State Beach, Manhattan Beach, and the El Segundo Generating Station, although a small parcel of land at the southwest corner of the Chevron property is made up of commercial and multiple-family residential.

Directly south of the Refinery, there is a single-family residential area bordering the entire length of the Refinery separated by Rosecrans Avenue. The corridor immediately east of the Refinery is comprised of a golf course at the corner of Sepulveda Boulevard and El Segundo Boulevard, with light commercial and heavy industrial zoning for the rest of the tract. The Refinery is located in the City of El Segundo within Los Angeles County in an urbanized area which includes a substantial amount of industrial development, due to the proximity of LAX (see Figure 2-2).

2.5 EXISTING REFINERY CONFIGURATION AND OPERATION

The locations of the existing Refinery units are shown in Figure 2-3 along with the proposed new and modified units. Figure 2-4 shows a flow diagram of the existing Refinery operations. Crude oil, used to produce gasoline and other refinery products, is delivered by ship to the marine terminal and pumped to the Refinery by existing pipelines or received via pipeline directly to the Refinery.



Environmental Audit, Inc.

REGIONAL MAP
Chevron Products Company
El Segundo Refinery

Project No. 2505

Figure 2-1

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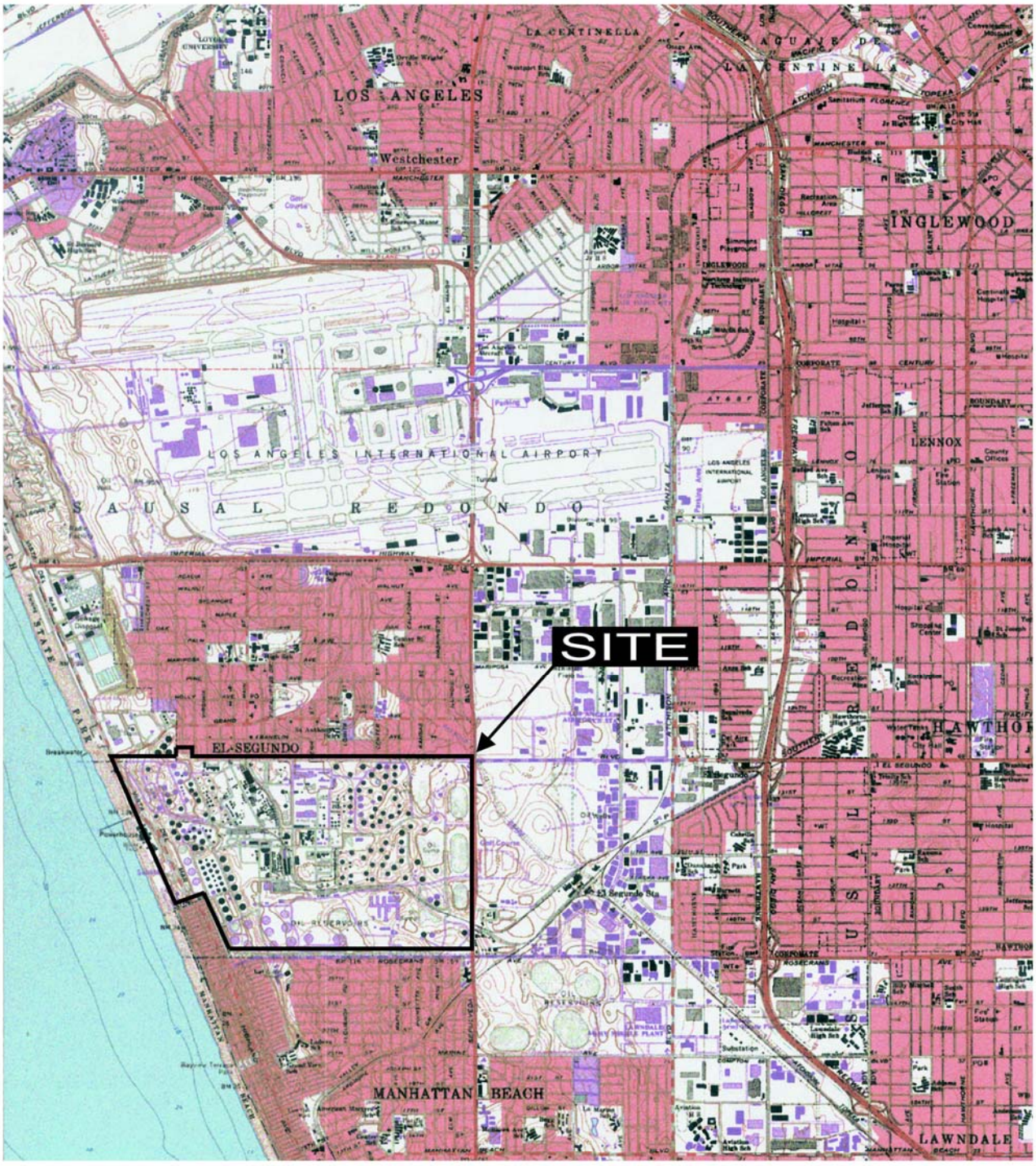

Environmental Audit, Inc.

SITE LOCATION MAP
Chevron Products Company
El Segundo Refinery

Project No. 2505

Figure 2-2

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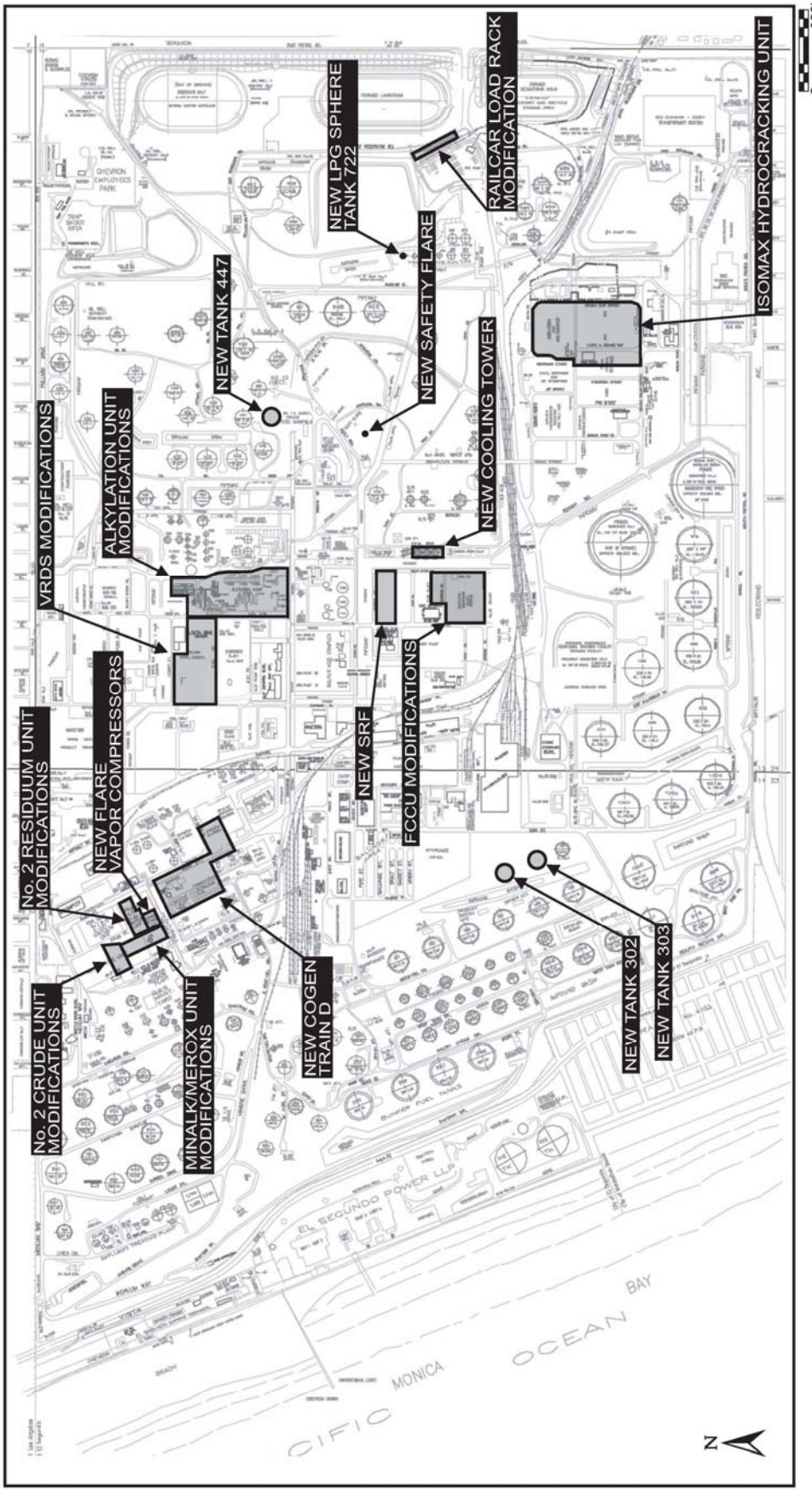

CHEVRON PRODUCTS COMPANY
PROJECT COMPONENT LOCATIONS

Figure 2-3

Project No. 2505
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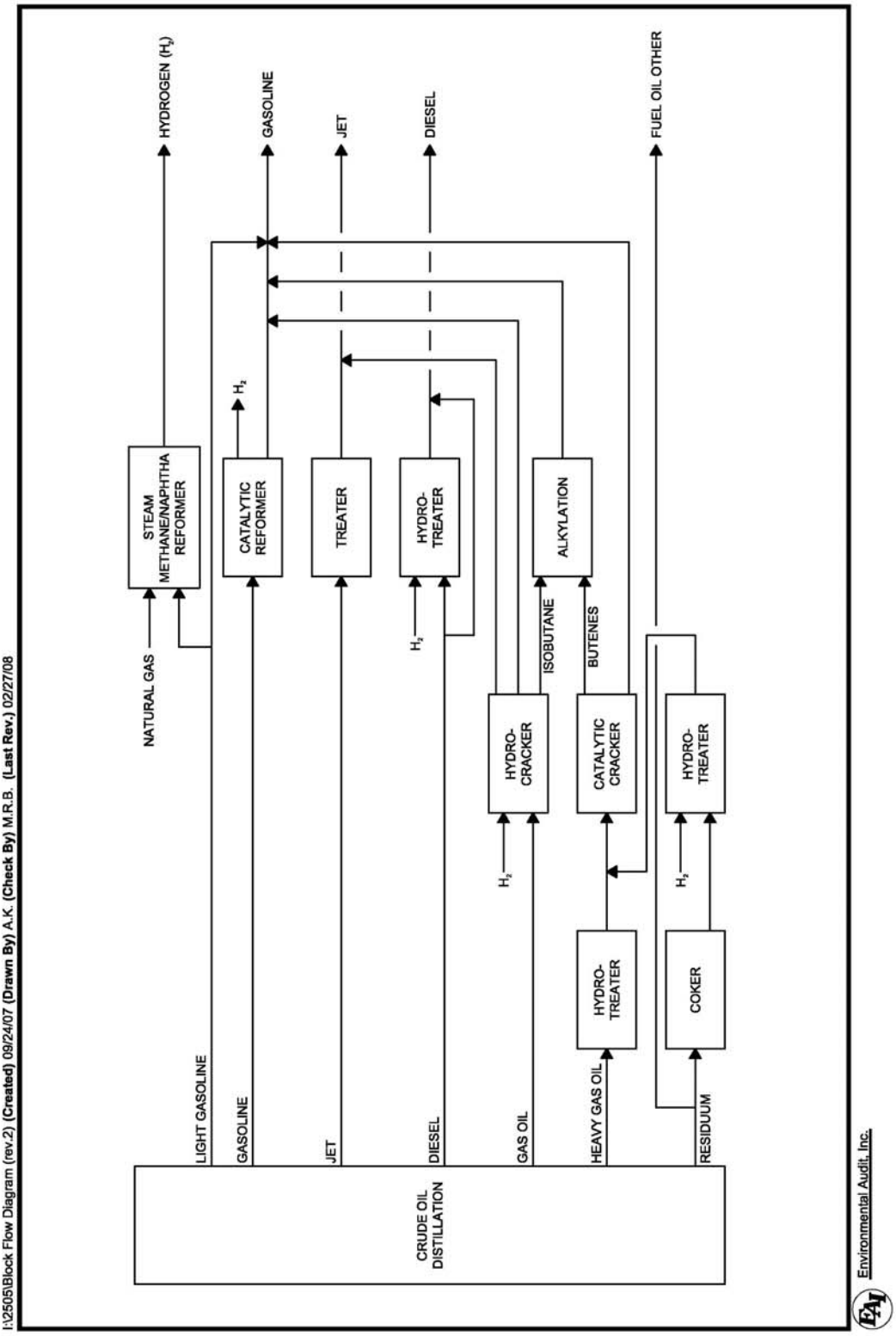
I:\2505\Block Flow Diagram (rev.2) (Created) 09/24/07 (Drawn By) A.K. (Check By) M.R.B. (Last Rev.) 02/27/08
HYDROGEN (H_2)
GASOLINE
JET
DIESEL
FUEL OIL OTHER
STEAM METHANE/NAPHTHA REFORMER
CATALYTIC REFORMER
TREATER
HYDRO-TREATER
ALKYLATION
HYDRO-CRACKER
CATALYTIC CRACKER
HYDRO-TREATER
HYDRO-TREATER
COKER
H_2
NATURAL GAS
ISOBUTANE
BUTENES
LIGHT GASOLINE
GASOLINE
JET
DIESEL
GAS OIL
HEAVY GAS OIL
RESIDUUM
CRUDE OIL DISTILLATION
Environmental Audit, Inc.
REFINERY BLOCK FLOW DIAGRAM
Project No. 2505
Figure 2-4

The crude oil is then processed in the crude units where it is heated and distilled into multiple feedstock components that are later processed elsewhere in the Refinery. The heavy residual oil leaving the crude units is further distilled in the vacuum units to yield additional, lighter hydrocarbon products and vacuum residuum. The vacuum residuum is processed in the Coker Unit and the lighter hydrocarbon components from the crude units and vacuum units are fed to other Refinery units for further processing. Some of the major downstream processes are cracking (i.e., breaking up larger molecules into smaller ones) in the FCCU and ISOMAX Unit, processing to separate sulfur in the hydrotreating units including the VRDS Unit, synthesizing (i.e., combining smaller molecules into larger ones) in the Alkylation Unit, and reforming (i.e., rearranging straight-chain molecules into branched-chain molecules) in the CCR Unit.

Certain units in the Refinery are designed to separate elemental constituents, such as sulfur and nitrogen, from crude oil for conversion into commercial products. Sulfur Recovery Units convert sulfur compounds separated from crude oil into elemental sulfur, which is sold commercially. Nitrogen separated from the crude oil is converted into ammonia and used onsite and also sold commercially.

Auxiliary systems are also needed to support Refinery operations including hydrogen plants (to produce hydrogen needed for certain refinery reactions), boilers to produce steam, cogeneration plants to produce electricity and steam, and wastewater treatment systems.

2.6 PROPOSED PROJECT MODIFICATIONS TO THE REFINERY

The following discussions describe each of the proposed Refinery modifications. The locations of both the proposed new and modified components are shown in Figure 2-3.

2.6.1 PROPOSED PROCESS UNIT MODIFICATIONS

The following units will be modified as part of the PRO Project.

2.6.1.1 No. 2 Crude Unit

The No. 2 Crude Unit provides the initial separation of crude oil by distillation. The various distillates are then further refined in other processing units in the Refinery. The proposed modifications to the No. 2 Crude Unit include rerouting atmospheric PRDs to the proposed new Vapor Recovery and Safety Flare System. In addition, two knock-out drums will be added to the unit to collect, for recovery purposes, any liquids released from the PRDs in the No. 2 Crude Unit, the No. 2 RSU, and the Minalk/Merox Unit. The purpose of this modification is to voluntarily reduce potential emissions from PRDs that currently vent to atmosphere in the event of a process upset.

2.6.1.2 No. 2 Residuum Stripper Unit

The No. 2 RSU processes the heavy hydrocarbons from the bottom of the No. 2 Crude Unit using vacuum distillation to produce various weight gas oils. The proposed modifications to the No. 2 RSU are limited to rerouting PRDs to the proposed new Vapor Recovery and Safety Flare System via the two new knock-out drums in the No. 2 Crude Unit. The purpose of this modification is to voluntarily reduce potential emissions from PRDs that currently vent to the atmosphere in the event of a process upset.

2.6.1.3 Minalk/Merox Unit

The Minalk/Merox Unit converts sulfur compounds (mercaptans) to disulfides using a catalyst. The proposed modifications to the Minalk/Merox Unit are limited to rerouting PRDs to the proposed new Vapor Recovery and Safety Flare System via a new knock-out drum in the No. 2 Crude Unit. The purpose of this modification is to voluntarily reduce potential emissions from PRDs that currently vent to the atmosphere in the event of a process upset.

2.6.1.4 Waste Gas Compressors

The WGCs at the No. 2 Crude Unit are currently connected to the LSFO vapor recovery system and safety flare. As part of connecting PRDs to the New Vapor Recovery and Safety Flare System, the WGCs will be rerouted to the New Vapor Recovery and Safety Flare System. The purpose of this modification is to align all PRDs from the No. 2 Crude Unit, No.2 RSU, Minalk/Merox Unit, and the WGCs to a common vapor recovery and safety flare system.

2.6.1.5 Fluidized Catalytic Cracking Unit

The FCCU converts heavy petroleum gas oils into lighter, more valuable products such as gasoline, LPG, and refinery intermediate product streams. The FCCU consists of a number of major sections, including the Reactor Section, the Regenerator Section, the Main Fractionator Section and the Gasoline Recovery Section. The reactor is the vessel where preheated feed is vaporized, contacted by regenerated catalyst, and cracked into lighter components. In the Regenerator Section, spent catalyst from the reactor is regenerated with oxygen to remove carbon. The reaction mix from the reactor enters the Main Fractionator where the separation of cracked gas oils and lighter products takes place. The Gasoline Recovery Section receives gases and liquids from the Main Fractionator overhead. The uncondensed gases in this overhead stream are compressed by the wet gas compressor and routed to the deethanizer where most of the hydrogen, methane and ethane are separated from the stream to be desulfurized and then utilized in the Refinery fuel gas system. Fuel gas is burned to provide heat to operate the Refinery.

The proposed FCCU modifications do not functionally change the process flow, control of the FCCU, or affect the emissions from the control equipment at the FCCU (i.e., the electrostatic precipitator and SCR). The purposes of the modifications to the FCCU are to

increase reliability, consolidate existing equipment, more efficiently separate intermediate streams, increase production of CARB gasoline components, and to improve energy efficiency. The modifications and equipment additions are as follows:

- Installing a new motorized main air blower replacing the existing steam turbine driven main air blower (the existing equipment will be idled and removed from the existing permit);
- Installing a new depropanizer column replacing three smaller existing distillation columns;
- Installing a new deethanizer column;
- Installing new pumps; and,
- Installing new heat exchangers.

2.6.1.6 Alkylation Unit

The Alkylation Unit combines light olefins (propylene, butylene and pentenes) with isobutane to produce an alkylate product for use as a gasoline blending component. The unit provides the controlled conditions for the alkylation reaction, which occurs in the presence of sulfuric acid catalyst. The Alkylation Unit also produces propane and normal butane as secondary commercial product streams. The proposed modifications to the Alkylation Unit include supplemental cooling that will be supplied by a new cooling tower (see Section 2.6.2.4) and additional heat exchangers. The depropanizer column (C-12), located in the older section of the Alkylation area, will be removed. This column is one of the three depropanizer columns being removed as part of FCCU upgrades. The purpose of the modifications is to improve reliability through more efficient cooling (i.e., heat removal) and improve product separation in the unit.

2.6.1.7 Vacuum Residuum Desulfurization Unit

The VRDS Unit desulfurizes and denitrifies gas oil feedstock for the FCCU. There are two parallel reactor trains, each consisting of two reactors in series. Feed to the reactors is mixed with hydrogen and then preheated in reactor feed/effluent heat exchangers and a feed heater. Treated gas oil from the reactors passes through the high pressure separator to remove hydrogen and then to the low pressure separator to remove remaining gases and then fed to the H_2S Stripper Column. VRDS product from the bottom of the stripper is cooled and pumped to the FCCU or to intermediate tankage. Hydrogen from the high pressure separator is cooled and sent through two liquid separators to the DEA Scrubber to capture H_2S prior to being directed to the reactors. The H_2S is converted to commercial grade sulfur in the SRUs.

The purpose of the modification to the VRDS Unit is to allow taking one of the parallel reactor trains out of service to replace the catalyst while the other train remains in service. The unit modifications and additions are as follows:

- Installing valve manifolds to separate the reactor trains;
- Installing a new, parallel high pressure separator;
- Repiping of the existing Recycle Hydrogen Heat Exchangers and Recycle Hydrogen Air Coolers to split them between the two trains; and,
- Installing new facilities to allow sulfiding of fresh catalyst in one reactor train with the other train in operation. This includes installation of two new separator vessels, a new sulfiding recycle hydrogen compressor, and a new recycle hydrogen air cooler. In addition, the existing VRDS Product Coolers will be repiped so they can be used in the catalyst sulfiding loop.

2.6.1.8 ISOMAX Unit

The ISOMAX Unit converts light and intermediate gas oils into jet fuel, motor gasoline, and LPG. The feed and makeup hydrogen are passed through four parallel CKN (a Century Type ISOMAX Catalyst for deNitrification) reactor modules to convert sulfur and nitrogen to H_2S and ammonia. The H_2S and ammonia are absorbed in water that is injected into the reaction stream, removed from the unit, and processed into commercial products in other units in the Refinery. CKN gas oils and additional hydrogen are passed through two parallel Iso-reactor modules, where the hydrocracking reaction takes place. Products are separated from the reaction mix in the distillation section.

The ISOMAX unit will be modified to increase the feed capacity by approximately 10,000 BPD and to produce two additional products, ULSD fuel and desulfurized FCCU feed. The purpose of the modifications is to accommodate gas oil production and optimize output from the unit.

In the CKN section the main feed pumps will be replaced. Feed/effluent heat exchangers in each module will be replaced with larger units to preclude the need for fired heater modifications. A new hydrogen booster compressor will be installed.

The Distillation Section modifications include: installing a new vacuum distillation column, and appurtenances; and, replacing three Iso-splitter Column bottoms pumps with larger pumps.

A PSA Unit will be installed to recover hydrogen for reuse in existing Refinery hydrocracking and hydrotreating processes. The additional hydrogen will be recovered from hydrogen-rich fuel gas produced at No. 4 Hydrogen Sulfide Plant. This hydrogen is currently routed into the Refinery fuel system, which provides fuel to combustion sources

(e.g., process heaters) throughout the Refinery in lieu of commercially purchased natural gas.

The new equipment includes an eight-bed PSA skid together with a motor-driven feed gas/purge gas compressor. The compressor system has feed gas suction, intermediate and discharge knockout drums with inter-coolers and after-coolers. Purge gas from the PSA skid will be fed to the existing on-site hydrogen manufacturing plant.

Heaters in the ISOMAX Unit will be retrofitted with low NOx burners to reduce NOx emissions. Firing rates for the heaters will operate within existing permit limits.

2.6.1.9 Cogeneration Facilities

The Refinery currently operates a multi-train cogeneration plant to supply electricity and steam used by processing equipment. To supplement electrical needs, electricity is purchased from offsite sources (e.g., SCE). The existing cogeneration plant will be expanded by an additional 49.9 MW. The new 49.9 MW Cogeneration Unit (Cogen Train D) includes a natural gas and refinery gas-fired turbine electric generator, a new steam-driven turbine electrical generator, feed gas compressors, knockout and surge pots, waste heat boilers (including duct burners) to generate steam, a CO oxidation catalyst unit, and an SCR unit to control emissions. Expansion of this facility will substantially decrease the Refinery's need for offsite sources of electricity.

2.6.1.10 Railcar Loading/Unloading Rack

The Refinery currently ships and receives liquefied petroleum gas (LPG) by trucks and rail cars. As part of the PRO Project, the LPG Loading/Unloading Rack will be expanded by the addition of four new loading/unloading positions for added flexibility that will increase the ability to optimize CARB-gasoline blending.

2.6.1.11 Utility Improvements

SCE and the WBMWD will improve systems to service the proposed project. SCE improvements expected to be made include adding new 66 kV circuit breakers in their existing Chevmain Power Substation, which is located north of Rosecrans Avenue, new 66 kV to 13.2 kV transformers at their existing ISOMAX Power Substation, about 500 feet of overhead or underground 66 kV cables connecting the two sites and a new transformer at the Chevgen Power Substation. WBMWD currently provides boiler feed water from secondary-treated effluent from the Hyperion Wastewater Treatment Plant that has been further processed by filtration, chlorination, and demineralization by reverse osmosis. WBMWD also currently provides cooling tower water from secondary-treated effluent from the Hyperion Wastewater Treatment Plant that has been further processed by filtration, chlorination, and denitrification. Improvements as part of the PRO Project at WBMWD, located nearby, include increasing reverse osmosis and denitrification water production facilities.

2.6.2 PROPOSED NEW PROCESS UNITS

The following subsections describe each of the proposed new units at the Refinery. The locations of the proposed new components are shown in Figure 2-3.

2.6.2.1 Sulfur Recovery Facilities

Sour Water Stripper

A new SWS with a capacity of 300 gpm will be constructed to supplement the existing plants. Sour water is a process water stream that contains sulfur compounds, primarily H_2S, nitrogen compounds, and ammonia. The sulfur and nitrogen are contained in crude oil and are recovered from the crude oil for use when it is processed. This stripper will allow for increased processing of sour water and production of commercial grade sulfur. The overhead stream from the stripper, containing H_2S, ammonia and water vapor, will be fed to a new SRU.

Sulfur Recovery Unit

A new SRU with a capacity of 175 long tons per day will be installed to process increased amounts of H_2S to commercial grade, molten sulfur for sale. Ammonia in the feed stream to the SRU will be converted to atmospheric nitrogen and water and exhausted through the TGU to the atmosphere.

Tail Gas Unit

The exhaust from the SRU will be vented to a new TGU for further processing to remove SOx before discharging to the atmosphere. The TGU will include a new incinerator.

2.6.2.2 Vapor Recovery and Safety Flare System

A new closed relief system, including vapor recovery compressors and an elevated safety flare, will be installed that is designed to be capable to handle emergency releases from the equipment that is connected to it. The PRDs on the No. 2 Crude Unit, the No. 2 RSU, and the Minalk/Merox Unit that currently may vent to atmosphere under upset conditions will be routed to this new Vapor Recovery and Safety Flare System. The existing WGCs currently routed to the LSFO vapor recovery system will be rerouted to the new Vapor Recovery and Safety Flare System. In addition, PRDs from the new SWS, SRU and TGU will be routed to this new Vapor Recovery and Safety Flare System. The recovered gases will be treated prior to being added to the existing refinery fuel gas system.

2.6.2.3 Additional Storage Capacity

The proposed project will require additional segregation and storage of intermediate hydrocarbon streams and products. A new LPG sphere (Tank 722), two new FCCU light gasoline tanks (Tanks 302 and 303), and a new ISOMAX diesel tank (Tank 447) with the

flexibility to store other products will be added. In addition, new pumps will be added to transfer materials to and from the new tanks.

2.6.2.4 Cooling Tower

A new cooling tower with a water circulation rate of approximately 12,000 gpm will be constructed to support cooling needs at the existing Alkylation Unit, new SRU, new SWS, and new TGU.

2.6.2.5 Hydrogen Compression and Transfer Facilities

Hydrogen (H_2) is currently produced onsite at the Refinery. Additional hydrogen compression and transfer facilities will be installed to supply Refinery units with hydrogen at the required pressures.

2.7 CONSTRUCTION OF THE PROPOSED PROJECT

Construction activities for the PRO Project are expected to begin in the second quarter of 2008 and be completed in 2010. As shown in Figure 2-5, the construction schedule for each component of the PRO Project varies. The construction activities for most of the components are expected to overlap from the second quarter of 2008 until the fourth quarter of 2009. Construction work shifts are expected to last about ten hours per day during most portions of the construction schedule. However, during certain Refinery unit shutdown periods (e.g., January, February, and October 2009), two construction shifts are expected. The first shift is scheduled to operate from 6:30 a.m. to 5:00 p.m. and the second shift is scheduled to operate from 5:00 p.m. to 3:30 a.m. Construction activities include the delivery of project-related equipment to the Refinery.

2.8 OPERATION OF THE PROPOSED PROJECT

The permanent work force at the Refinery is expected to increase by about 12 additional workers as a result of the proposed project. The proposed project is expected to incrementally reduce truck traffic by about two trucks per day associated with the transport of materials to and from the Refinery including among other things, catalyst deliveries and offsite shipments of commercial sulfur and ammonia products. The Refinery has an ammonia plant and currently produces excess aqueous ammonia. The excess aqueous ammonia is sold as a product, but the project will require ammonia for the Cogen Train D SCR. In addition, ammonia can be used a a fuel source in the proposed new Sulfur Recovery Facilities. Therefore, the truck traffic reduction is due to the decrease in the sale of aqueous ammonia. In addition, a maximum of about 12 additional railcars per day of intermediate products (i.e., LPG and CARB gasoline blending components) could travel to and from the Refinery as a result of the proposed project. These additional railcars are expected to be added to existing trains that already visit the Refinery. No change to marine vessel traffic is expected from the proposed project.

Figure 2-5

Chevron Products Company El Segundo Refinery
Product Reliability and Optimization Project
Construction Schedule

Project	2008												2009											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
MODIFICATIONS																								
No. 2 Crude Unit PRDs																								
No. 2 Residuum Stripper Unit PRDs																								
Minalk/Merox Unit PRDs																								
WGCs																								
FCCU																								
Alkylation Unit																								
VRDS Unit																								
ISOMAX Unit																								
Cogen Train D Facilities																								
Railcar Loading/Unloading Rack																								
Utility Improvements																								
SCE																								
WBMWD																								
NEW UNITS																								
Sulfur Recovery Facilities																								
SWS																								
SRU																								
TGU																								
Vapor Recovery and Safety Flare System																								
Additional Storage Facilities																								
Cooling Tower																								
H_2 Compression & Transfer Facilities																								

2.9 PERMITS AND APPROVALS

The proposed project will require approvals or permits from a variety of federal, state, and local agencies (see Table 2-1). Examples of general permits and approvals required for the Refinery are summarized in the following subsections. The following discussion summarizes representative permits required for the Refinery but is not necessarily exhaustive. Many of these permits are not expected to require permit modifications due to the proposed project.

Federal Approvals

No federal agency approvals for the proposed project are expected to be required although the project applicant is required to notify and receive concurrence on some issues (e.g., Prevention of Significant Deterioration (PSD) applicability). Many of the U.S. EPA regulations and requirements are implemented by state or local agencies. For example, New Source Performance Standards (NSPS) are implemented by the SCAQMD and hazardous waste regulations are enforced by the California Department of Toxic Substances Control (DTSC). The Spill Prevention Control and Countermeasure (SPCC) Plan (40 Code of Federal Regulations (CFR) Part 112) may require modifications to assure that all new and modified Refinery units are included in the Plan. The U.S. EPA also has authority over the PSD Program with some authority delegated to the SCAQMD and the proposed project may require review to assure compliance with the PSD program for the proposed modifications.

The Occupational Safety and Health Administration (OSHA) regulates workplace hazards and enforces regulations that protect worker health and safety. Under federal OSHA, regulations have been promulgated that require the preparation and implementation of a Process Safety Management (PSM) Program (40 CFR Part 1910, Section 119, and Title 8 of the California Code of Regulations (CCR), Section 5189). The Refinery will be required to complete a PSM program to evaluate and minimize hazards associated with the proposed project. Finally, the U.S. Department of Transportation (U.S. DOT) regulates the transportation of hazardous substances and the Federal Aviation Administration regulates the height of structures that could impact navigable airspace.

State Approvals

Construction-related permits may be required from the California Occupational Safety and Health Administration (CalOSHA) for demolition, construction, excavation, and tower and crane erection. Any transport of heavy construction equipment, which requires the use of oversized transport vehicles on state highways, will require a Caltrans transportation permit. DTSC regulates the generation, transport, treatment and disposal of hazardous wastes. Hazardous wastes generated by the proposed project activities and related to refining activities are governed by rules and regulations enforced by DTSC. The existing PSM program and hazard communication program may require updating with CalOSHA due to the proposed project revisions.

TABLE 2-1

Federal, State and Local Agency Permits and Applications

Agency Permit or Approval	Requirement	Applicability to Project
Federal		
Environmental Protection Agency (U.S. EPA)	NSPS 40 CFR Part 60 General Provisions (Subpart A)	Requires facilities subject to a NSPS to provide notification, maintain and submit records, and in some cases undertake performance tests.
	Accidental Release Prevention Risk Management Program, 40 CFR 68 (and California Accidental Release Program, Title 19, Div. 2, Chapter 4.5)	Off-site consequence analysis required for regulated hazardous materials.
	Benzene Waste National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61 Subpart FF	Reporting and record keeping.
	Refinery Maximum Achievable Control Technology (MACT) Standard, 40 CFR Part 63 Subpart CC	Requires a startup, shutdown, and malfunction plan for process vents and on-site gas loading.
	National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline) 40 CFR Part 63 Subpart EEEE	Other organic liquids distribution.
	Prevention of Significant Deterioration	Air quality requirements for modifications to stationary sources in attainment areas.
	Superfund Amendments and Reauthorization Act (SARA) Title III	Requires reporting off-site releases of hazardous substances.
	Emergency Planning and Community Right-to-Know Act, Section 302	Requires disclosure of hazardous substances being used.
	Pretreatment Standards, 40 CFR Part 400 et seq.	Standards for wastewater discharge.
	Resource Conservation and Recovery Act (RCRA), 40 CFR Parts 260 – 279	Requires proper handling of hazardous waste material.
	Spill Prevention Control and Countermeasure Plan (40 CFR 112)	Modifications to Refinery facilities that affect the potential for oil or flammable materials discharge into navigable waters.
	National Pollutant Discharge Elimination System (NPDES), 40 CFR Part 122	Requires compliance with Clean Water Act (CWA) standards for discharges to Santa Monica Bay.
Federal Aviation Administration (FAA)	Notice of Proposed Construction or Alteration (FAA Form 7460-1) to comply with FAA Advisory Circular 70/7460-21, Proposed Construction or Alteration of Objects that may Affect Navigable Airspace (14 CFR Part 77.13)	Construction or alteration of a structure more than 200 feet above the ground level. Construction equipment, such as cranes, are subject to this requirement.
U.S. Department of Transportation (U.S. DOT)	Compliance with DOT regulations regarding transportation of hazardous substances (as defined in 49 CFR parts 171 – 180)	Project-related transportation of hazardous substances such as ammonia and sulfur, as well as hydrocarbons such as LPG.
Occupational Safety and Health Administration (OSHA)	Process Safety Management OSHA 29 CFR Part 1910	Worker process safety standards.

TABLE 2-1 (continued)

Federal, State and Local Agency Permits and Applications

Agency Permit or Approval	Requirement	Applicability to Project
State		
California Department of Transportation (Caltrans)	Transportation permit	Application required to transport overweight, oversize, and wide loads on highways.
Cal-OSHA	Construction - related permits	Excavation, construction, demolition, and tower and crane erection permit.
Office of Environmental Health Hazard Assessment	Proposition 65 warnings for known exposures to listed chemicals	Required if significant risk identified exceeds regulatory limit.
Department of Toxic Substances Control (DTSC)	Hazardous Waste Control Law (HSC, Division 20, Chapter 6.5)	Required if facility stores, treats or disposes of hazardous waste as described in the regulation.
Regional		
Regional Water Quality Control Board (RWQCB)	Remedial action plan	Required if contaminated soil is found and remediated.
South Coast Air Quality Management District (SCAQMD)	CEQA Review/EIR	SCAQMD is the lead agency for certification of the proposed project EIR.
	SCAQMD Rule 201: Permit to Construct	Applications are required to construct or modify stationary emissions sources.
	SCAQMD Rule 203: Permit to Operate	Applications are required to operate stationary source emissions.
	SCAQMD Rule 212: Standards for Approving Permits	Requires public notification for a "significant project."
	SCAQMD Rule 219: Equipment Not Requiring a Written Permit Pursuant to Regulation II	Equipment with minimal emissions does not need to be permitted.
	SCAQMD Rule 401: Visible Emissions	Prohibits visible emissions from single emission sources.
	SCAQMD Rule 402: Nuisance	Discharges which cause a nuisance to the public are prohibited.
	SCAQMD Rule 403: Fugitive Dust	Contains best available control measure requirements for operations or activities that cause or allow emissions of fugitive dust.
	SCAQMD Rule 407: Liquid and Gaseous Contaminants	Limits CO and sulfur dioxide (SO2) emissions.
	SCAQMD Regulation IX: Standards of Performance for New Stationary Sources	Incorporates Federal regulations by reference.
	SCAQMD Rule 1113: Architectural Coating	Specifies allowable VOC content of coatings for structures.
	SCAQMD Rule 1118: Emissions from Refinery Flares	Requires monitoring and limiting flaring events during startup and shutdown activities.
	SCAQMD Rule 1158: Storage, Handling, and Transport of Coke, Coal, and Sulfur	Places requirements on storage and handling of solid sulfur and coke to control dust.
	SCAQMD Rule 1166: Excavation of VOC Contaminated Soils	Required if soils to be excavated are impacted by hydrocarbons.

TABLE 2-1 (concluded)

Federal, State and Local Agency Permits and Applications

Agency Permit or Approval	Requirement	Applicability to Project
SCAQMD (concluded)	SCAQMD Rule 1173: Fugitive Emissions of VOC	Contains requirements for inspection and maintenance of fugitive VOC emitting components.
	SCAQMD Rule 1176: Sumps and Wastewater Separators	A compliance plan is required for VOC control from wastewater systems.
	SCAQMD Regulation XIII: New Source Review (NSR) including key rules Rule 1303: Requirements Rule 1304: Exemptions Rule 1306: Emission Calculations Rule 1309: Emission Reduction Credits	New source review requirements for non-RECLAIM pollutant emissions sources, including need for BACT, modeling for significant impacts, and providing offsets for emission increases.
	SCAQMD Rule 1401: NSR of Toxic Air Contaminants	New sources emitting toxic air contaminants must limit emissions to the extent that the health risks to the maximum exposed individual are within allowable limits. Best Available Control Technology for Toxics (TBACT) is generally required when cancer risk is greater than one in one million (1×10^{-6}).
	SCAQMD Regulation XVII: Prevention of Significant Deterioration Permits	Partial delegation of Prevention of Significant Deterioration (PSD) Permits for new or modified PSD permit air quality requirements for modifications to stationary sources in attainment areas.
	SCAQMD Regulation XX: Regional Clean Air Incentives Market (RECLAIM)	RECLAIM is a market incentive program designed to allow facilities flexibility in achieving emission reduction requirements for NOx, and SOx under the Air Quality Management Plan using methods which include, but are not limited to: add-on controls, equipment modifications, reformulated products, operational changes, shutdowns, and the purchase of excess emission reductions.
	Title V of the 1990 Clean Air Act	SCAQMD Regulations XXX: Title V Permits. Applications are required to construct, operate, or modify air emission sources.
Local		
County Sanitation Districts of Los Angeles	Industrial wastewater discharge approval	Required when discharging into sewer.
El Segundo Fire Department – Hazardous Materials Division	Permit for above ground storage tanks and storage of flammable materials; business disclosure form, building plan check	Required for ASTs and areas where storage of flammable materials occur; required for storage of hazardous materials; required to review plans for construction.
City of El Segundo	Building permit	Required for foundations, building, etc.
	Grading permit	Required prior to grading land.
	Plumbing and electrical permits	General construction permit.

Regional Approvals

The proposed project may require a Remedial Action Plan approved by the RWQCB if contaminated soil is found.

The SCAQMD has responsibility as lead agency for the CEQA process and for certification of the EIR because it has primary approval authority over the proposed project (CEQA Guidelines §15051(b)). Permits to Construct/Operate for new equipment and modifications to existing units will be required. Certain components of the proposed project would also be subject to existing SCAQMD rules and regulations. Permits or plan approvals also may be required by SCAQMD Rule 1166 for soil remediation activities and demolition activities.

Local Approvals

The LACSD and the LACDPW have responsibility for issuance of industrial wastewater discharge permits which are required for discharges into public sewers. No modifications are expected to be required to the Refinery's existing industrial wastewater discharge permits due to the proposed project.

The El Segundo Fire Department, Hazardous Materials Division is responsible for issuing permits for storage tanks and for review and approval of Risk Management Plans (RMP) which will be required as part of the proposed project. The Fire Department also is responsible for assuring that the City fire codes are implemented. Building and grading permits for the proposed project will be required from the City of El Segundo to assure that the proposed project complies with the Uniform Building Code.