

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

FINAL ENVIRONMENTAL IMPACT REPORT

**Chevron – El Segundo Refinery California Air Resources Board
(CARB) Phase 3 Clean Fuels Project**

SCH NO. 2000081088
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Final Environmental Impact Report

**Chevron – El Segundo Refinery
CARB Phase 3 Clean Fuels Project**

November 2001

South Coast Air Quality Management District

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1220 Avenida Acaso
Camarillo, California 93012**

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PREFACE

FINAL ENVIRONMENTAL IMPACT REPORT

This document and previous documents incorporated herein by reference constitute the Final Environmental Impact Report (EIR) for the Chevron – El Segundo Refinery California Air Resources Board (CARB) Phase 3 Clean Fuels Project. The EIR for the CARB Phase 3 Clean Fuels Project is a comprehensive environmental document that consists of three separate documents, including this Final EIR. The other documents include the Notice of Preparation of a Draft Environmental Impact Report (August 2000) and the Draft Environmental Impact Report (July 2001). A summary of the contents of these documents is given below. All documents comprising the Final EIR for the Chevron – El Segundo Refinery CARB Phase 3 Clean Fuels Project were circulated for public review and were otherwise available at South Coast Air Quality Management District (SCAQMD) headquarters on the dates indicated below. These documents can be obtained by contacting the SCAQMD Public Information Center at (909) 396-2039.

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE CHEVRON – EL SEGUNDO REFINERY CARB PHASE 3 CLEAN FUELS PROJECT (AUGUST 2000)

The Notice of Preparation (NOP) of an Environmental Impact Report for the Chevron – El Segundo Refinery CARB Phase 3 Clean Fuels Project was released for review on August 18, 2000. The NOP contains a project description, an environmental checklist, an analysis of the preliminary potential environmental effects that may result from implementing the proposed project. A copy of the NOP is included in Appendix A of this Final EIR.

DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE CHEVRON – EL SEGUNDO REFINERY CARB PHASE 3 CLEAN FUELS PROJECT (JULY 2001)

The Draft EIR for the Chevron – El Segundo Refinery CARB Phase 3 Clean Fuels Project was released for public review on July 25, 2001. The Draft EIR contains a complete description of the proposed project and discussions of the environmental setting, alternatives, significant environmental effects of the proposed project, the potential irreversible environmental changes, growth-inducing impacts, cumulative impacts from the CARB Phase 3 Clean Fuels Project and other related projects, and effects not found to be significant. The core of the Draft EIR is the discussion of potential environmental impacts and mitigation measures. The analysis of potential environmental impacts includes the following topics: air quality, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology/water quality, land use and planning, noise, public services, solid and hazardous waste, and transportation/circulation.

Five comment letters were received during the comment period for the Draft EIR. Responses to all comments received on the Draft EIR were prepared and are included in Exhibit 1 of this Final EIR.

Any changes associated with the Draft EIR have been identified as italics for added text and strikethrough for deleted text. Changes of either type (additions and deletions) are also noted with

a vertical bar in the outer margin on each page containing a change. These changes, however, do not substantially affect the conclusions of any environmental topic analysis of the Draft EIR.

The environmental disciplines where significant adverse environmental impacts would occur after the implementation of mitigation include air quality, hazards, noise, and transportation/circulation. Accordingly, a Statement of Findings and Overriding Considerations has been prepared for these significant impacts. The statement is included separately as Attachment 1 of the SCAQMD certification documentation.

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ABBREVIATIONS AND ACRONYMS

AHMs	Acutely Hazardous Materials
AQMP	Air Quality Management Plan
ASTs	Aboveground storage tanks
BACT	Best available control technology
Basin	South Coast Air Basin
bbls	Barrels
bgs	Below ground surface
BLEVE	Boiling Liquid Expanding Vapor Explosion
BOD	Biochemical oxygen demand
CAAA	California Air Act Amendments
CAAQS	California Ambient Air Quality Standards
CalARP	California Accidental Release Prevention
Cal-OSHA	California Occupational Safety and Health Association
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CaRFG2	California Reformulated Gasoline 2
CaRFG3	California Reformulated Gasoline 3
CCR	California Code of Regulations
CD	Catalytic distillation
CDMG	California Division of Mines and Geology
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	Carbon monoxide
COD	Chemical oxygen demand
CWA	Clean Water Act

ABBREVIATIONS AND ACRONYMS (Continued)

DAF	Dissolved air flotation
dB	Decibels
DDT	Dichloro-diphenyl trichloroethane
DEA	Diethanol amine
DOT	Department of Transportation
EIR	Environmental Impact Report
FAA	Federal Aviation Administration
FCC	Fluid catalytic cracking
gpd	Gallons per day
gpm	Gallons per minute
g/s-m ²	Grams per second-square meters
H ₂ S	Hydrogen sulfide
HC	Hydrocarbon
HIA	Hazard index-acute
HIC	Hazard index-chronic
HRA	Health risk assessment
IAF	Inducted air flotation
IS	Initial Study
ISCST3	Industrial Source Complex Short-Term 3
Kg/day	Kilograms per day
KW/m ²	Kilowatts per meter squared
LACDPW	Los Angeles County Department of Public Works
LACSD	Los Angeles County Sanitation Districts
LARWQCB	Los Angeles Regional Water Quality Control Board
µg/L	Micrograms per liter
µg/m ³	Micrograms per cubic meter
MACT	Maximum achievable control technology
MATES II	Multiple Air Toxics Exposure Study, 2000
MBPD	Thousand barrels per day

ABBREVIATIONS AND ACRONYMS (Continued)

MDL	Method detection limit
MEA	Monoethanol amine
MICR	Maximum individual cancer risk
mgd	Million gallons per day
mg/L	Milligrams per liter
MTBE	Methyl tertiary butyl ether
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
Ng/L	Nanograms per liter
NHT	Naphtha hydrotreater
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NSPS	New source performance standards
NSR	New Source Review
O ₃	Ozone
OCIWMD	Orange County Integrated Waste Management Department
OES	California Office of Emergency Services
OSHA	Occupational Safety and Health Administration
PAHs	Polycyclic aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
PM ₁₀	Particulate matter less than 10 microns
ppm	Parts per million
ppmw	Parts per million by weight
PQL	Practical Quantitation Levels
psi	Pounds per square inch
PSM	Process safety management
RCRA	Resource Conservation and Recovery Act

ABBREVIATIONS AND ACRONYMS (Continued)

RECLAIM	Regional Clean Air Incentives Market
RELS	Reference exposure levels
RMP	Risk Management Program
RMPPs	Risk Management Prevention Programs
RVP	Reid vapor pressure
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCR	Selective catalytic reduction
SHU	Selective hydrogenation unit
SMBRP	Santa Monica Bay Restoration Project
SO ₂	Sulfur dioxide
SO _x	Oxides of Sulfur
SOCAB	South Coast Air Basin
SPCC	Spill Prevention Control and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
T-BACT	Best available control technology
TACs	Toxic air contaminants
TAME	Tertiary amyl methyl ether
TSS	Total suspended solids
TU _c	Chronic Toxicity Unit
UCB	Uniform Building Code
U.S. EPA	(United States) Environmental Protection Agency
UST	Underground storage tank
VOC	Volatile organic compound
WBMWD	West Basin Municipal Water District
WGC	Wet gas compressor
WRD	Water Replenishment District

1.0 INTRODUCTION AND EXECUTIVE SUMMARY

Chevron Products Company (Chevron) is proposing to modify the El Segundo Refinery (Refinery) and three distribution terminals in southern California. This Environmental Impact Report (EIR) has been prepared to assess the impacts of the project on the environment as required under the California Environmental Quality Act (CEQA).

1.1 Introduction

Chevron's proposed project was developed to comply with California Air Resources Board (CARB) regulatory requirements to remove methyl tertiary butyl ether (MTBE) from product gasoline and to produce and distribute product gasoline meeting the CARB Phase 3 Reformulated Gasoline specifications.

1.1.1 Project Need

Governor Davis signed Executive Order D-5-99 on March 25, 1999, which directs that MTBE be phased-out of California's gasoline no later than December 31, 2002. The Executive Order also directs CARB to adopt gasoline regulations (CARB Phase 3) to facilitate the removal of MTBE without reducing the emission benefits of the existing program.

To comply with these new requirements, Chevron is proposing to make changes to the configuration of the Refinery by modifying existing process operating units, constructing and installing new equipment, and providing additional ancillary facilities. As indicated by Chevron, the primary objective of the project is to provide the means for manufacturing gasoline that complies with the MTBE phase-out mandate and CARB Phase 3 gasoline specifications.

To meet the oxygenate requirements of the CARB Phase 3 specifications for gasoline without MTBE, ethanol would be blended into the gasoline. The ethanol would not be blended at the Refinery, as with MTBE, but at distribution terminals. Therefore, modifications to three distribution facilities in southern California would be required. The distribution terminals are located in the cities of Montebello, Los Angeles (Van Nuys), and Huntington Beach.

1.1.2 Purpose and Authority

CEQA requires the environmental impacts of proposed projects be evaluated and feasible methods to reduce, avoid, or eliminate identified significant adverse impacts of these projects be considered. To fulfill the purpose and intent of CEQA, the South Coast Air Quality Management District (SCAQMD), as the CEQA lead agency, directed the preparation of the Draft EIR, which addresses the potential environmental impacts associated with the Chevron CARB Phase 3 Clean Fuels Project.

Lead Agency means "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment" (Public Resources

Code, Section 21067). For this project, the SCAQMD and the City of El Segundo, where the Refinery is located, evaluated the lead agency determination. Because the SCAQMD has primary discretionary approval authority over the proposed project, it was determined that the SCAQMD would be the appropriate lead agency. Additionally, improvements are required at three distribution terminals within southern California. All affected facilities are located within the South Coast Air Basin (Basin). Specifically, these facilities are located within the jurisdiction of the cities of El Segundo, Huntington Beach, Los Angeles (Van Nuys), and Montebello. As the terminal improvements are considered a part of this project, these cities may act as responsible agencies for the proposed project.

While the SCAQMD is the lead agency, the CEQA Guidelines, §§15102 and 15103, require that responsible agencies, trustee agencies, and the public to be notified of the intent and scope of the proposed project. Consistent with the above CEQA Guidelines sections, a Notice of Preparation (NOP) and Initial Study (IS) were distributed to the identified responsible agencies and parties for review and comment. The NOP/IS and comments received, and responses to these comments are included in Appendix A to this EIR.

1.2 Scope of EIR and Format

The scope of this Draft EIR meets the requirements identified under CEQA and includes a description of the proposed project in Chapter 2. The existing environmental setting is discussed in Chapter 3. The potential adverse impacts associated with the proposed project are analyzed and presented in Chapter 4. Chapter 4 also includes mitigation measures identified to reduce or lessen potential significant impacts of the proposed project. CEQA requires that both alternatives to the proposed project and cumulative impacts be analyzed in an EIR. These areas are presented in Chapters 5 and 6, respectively. The organizations and persons consulted and references used in the preparation of this document are provided in Chapters 7 and 8, respectively. Supporting documentation to the impact analysis is provided as technical appendices to this Draft EIR as recommended by CEQA Guidelines §15147.

In the IS, five environmental areas were found not to be significant: Aesthetics/Recreation, Agricultural Resources, Energy, Mineral Resources, and Population/Housing. Therefore, these subject areas are not discussed in this Draft EIR.

1.3 Chapter 2 Summary - Project Description

The proposed Refinery modifications will allow for the production of CARB Phase 3 compliant gasoline. The proposed project will not alter the Refinery's current crude oil throughput capacity. The types of refinery products and overall volume of production are not expected to change substantially.

To comply with the new CARB Phase 3 gasoline requirements, the objectives of the Refinery improvements will be to eliminate ether blending, reduce vapor pressure of the gasoline, reduce sulfur content of the gasoline, and expand the Fluid Catalytic Cracking (FCC) to reduce the gasoline production shortfall from MTBE and pentane removal. To accomplish these objectives, the proposed project at the Refinery consists of the construction of ~~one new unit, and~~ replacements and modifications to several existing processing units. There is also some new equipment associated with modifications to the existing units. Each of the proposed modifications is discussed separately and in greater detail in Chapter 2. Replacements and modifications would include addition of new equipment (such as replacing three small debutanizer columns with one new larger column and adding a second reboiler and replacing existing trays in the FCC Light Gasoline Depentanizer to improve removal of pentanes) and replacement of existing equipment with new equipment.

Under the new requirements, ethanol would need to be added to the gasoline to meet oxygenate content criteria. The ethanol would not be blended at the Refinery, as with MTBE, but at the terminals. Therefore, modifications to the three distribution terminals located in the cities of Montebello, Los Angeles (Van Nuys), and Huntington Beach are necessary. The regional locations of the Refinery and the distribution terminals are shown in Figure 1.1-1. The primary improvements at the distribution terminals will include: (1) the addition of new storage tanks; (2) the conversion of existing storage tanks to accommodate the ethanol product; and (3) the modification of piping and their associated infrastructure.

1.4 Chapter 3 Summary - Setting

The existing Refinery and three existing distribution terminals are located within highly developed portions of the greater Los Angeles area. The land use surrounding these affected facilities is comprised of a blend of heavy and light industrial, commercial, residential, recreation, and transportation-related uses. A detailed existing setting discussion for each of the following environmental issues is presented in Chapter 3: Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology/Water Quality, Land Use and Planning, Noise, Public Services, Solid and Hazardous Waste, and Transportation/Circulation.

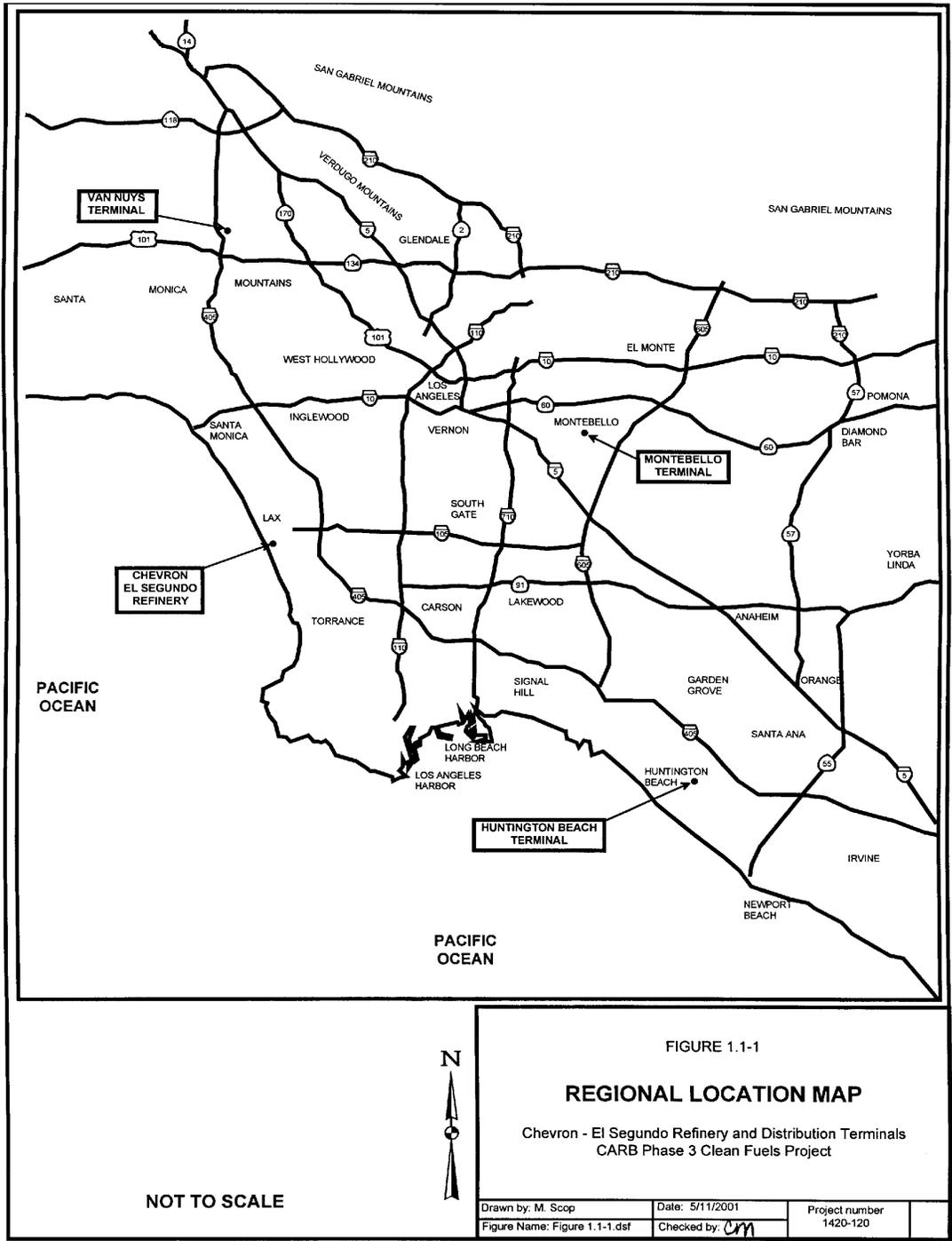


Figure 1.1-1 Regional Location Map

1.5 Chapter 4 Summary - Potential Environmental Impacts and Mitigation Measures

Table 1.5-1 presents a summary of the identified potential adverse environmental impacts and the significance determination for each of the environmental topics as they relate to the proposed project, the alternatives, and cumulative with other projects. Five categories were eliminated in the IS process as having no potential for significant project-related impacts: Aesthetics, Recreation, Agricultural Resources, Energy, Mineral Resources, and Population/Housing. Proposed mitigation measures for the significant impacts are summarized in Table 1.5-2. No significant adverse environmental impacts have been identified for biology, hydrology/water quality, land use and planning, public services, and solid and hazardous waste.

Potential significant impacts that can be mitigated to a level below significance have been identified for potential to uncover cultural resources at the Huntington Beach Terminal, earthquake-induced liquefaction at the Van Nuys Terminal, and increased noise from operations at the Refinery and during construction at the Montebello Terminal.

Significant potential adverse environmental impacts resulting from the proposed project after implementation of available mitigation measures have been identified for four topics: air quality, hazards, noise, and transportation/circulation. The air quality impacts are primarily from construction activities, additional ship calls and on-site train usage, and emissions from proposed modifications to the terminals. A ship call is defined as the period of time between when a ship enters the California coastal waters (located approximately 100 miles from the coastline), docks to load or unload, and exits the California coastal waters. The hazards impacts are primarily due to the addition of a pentane storage sphere and process modifications at the Refinery, as well as from potential accidents or spills related to the new ethanol storage tanks at the Montebello Terminal. The potential for significant noise impacts are due to new operational equipment and additional hours of operating the onsite rail engine at the Refinery along with rail car deliveries at the Montebello Terminal. The transportation/circulation impacts will be short-term and limited to the evening commute period during construction at one intersection near the Refinery. A detailed analysis for each environmental topic and any mitigation measures, if required, is provided in Chapter 4.

Long-term growth-inducing impacts are not expected to occur as a result of this project. The project will have a short-term increase in workers onsite during construction; but the project is not expected to induce growth.

**Table 1.5-1
Summary of Potential Environmental Impacts from the Project,
Project Alternatives or Cumulatively with Other Projects**

Issue Area	Potential Impacts from the Project	Level of Significance				
		Project	Alternative			Cumulative
			1	2	3	
Air Quality	Construction emission impacts	S	S	S	S	S
	Operational emissions oxides of nitrogen (NO _x), sulfur oxides (SO _x), volatile organic compounds (VOCs), and particulate matter less than 10 microns (PM ₁₀)	S	S	S	S	S
	Operational emissions carbon monoxide (CO)	N	N	N	N	N
	Increased chronic noncancer and cancer risk from air toxic emissions	N	N	N	N	N
	Acute risk from air toxic emissions	N	N	N	N	N
Biological Resources	Impacts from construction or operation	N	N	N	N	N
Cultural Resources	Potential to encounter cultural resources during excavation	M	M	M	M	N
Geology and Soils	Potential for earthquake –induced liquefaction	M	M	M	M	N
Hazards	Increased risk from catastrophic failure of new storage tanks and pipelines at Refinery	S	S	S	S	N
	Increased risk from catastrophic failure of new storage tank at terminal	S	S	S	S	N
	Increased risk from catastrophic failure of truck and rail car deliveries of ethanol at terminals	S	S	S	S	N
	Increased risk from new and modified units at the Refinery and terminals	S	S	S	S	N
Hydrology/Water Quality	Increased water use	N	N	N	N	N
	Increased wastewater discharge	N	N	N	N	N
	Decreased water quality	N	N	N	N	N
Land Use Planning	Alter existing land use designations	N	N	N	N	N
Noise	Increased noise during construction at the Refinery	N	N	N	N	N
	Increased noise from operations at the Refinery	M	M	M	M	N
	Increased noise during construction at the Montebello Terminal		M	M	M	M
	Increased noise during rail spur operations at the Montebello Terminal	S	S	S	S	N

Table 1.5-1 (Concluded)
Summary of Potential Environmental Impacts from the Project,
Project Alternatives or Cumulatively with Other Projects

Issue Area	Potential Impacts from the Project	Level of Significance				
		Project	1	2	3	Cumulative
Public Services	Increased use of public services	N	N	N	N	N
Solid and Hazardous Waste	Increased disposal of hazardous and nonhazardous waste	N	N	N	N	N
Transportation/Circulation	Increased traffic during construction at the Refinery	S	S	S	S	S
	Increased traffic during operations at the Refinery	N	N	N	N	N
	Blocked traffic due to rail car deliveries at the Montebello Terminal	N	N	N	N	N
Growth-Inducing Impacts	Foster population growth requiring the need for additional housing and/or infrastructure	N	N	N	N	N

Level of Significance:
N – No significant impacts from the project
M – Significant impacts before mitigation; no significant impacts after mitigation
S – Significant impacts even after mitigation
Alternatives:
1 – Construct new Alkylate Depentanizer
2 – Construct refrigerated pentane storage tank
3 – Feeding incremental butanes produced at the FCC to the Alkylation Unit
Note:
Five issue areas or subareas were eliminated in the Initial Study as having no potential for significant environmental impacts: aesthetics/recreation, agriculture resources, energy, mineral resources, and population/housing.

Table 1.5-2
Proposed Mitigation Measures for Significant Impacts

Issue Area	Impact	Required Mitigation Measure	
Air Quality	Construction emission for VOC, NO _x , SO _x , and PM ₁₀	AQ-1	Increase watering of active sites by one time per day.
		AQ-2	Wash wheels of vehicles leaving unimproved areas.
		AQ-3	Removal visible roadway dust tracked out onto roadway.
		AQ-4	Evaluate retrofitting of large off-road construction equipment that will be operating for significant periods.
		AQ-5	Use low sulfur diesel (as defined in SCAQMD Rule 431.2) where feasible.
		AQ-5	Proper equipment maintenance.
Cultural Resources	Potential for cultural resources during ground disturbance at the Huntington Beach Terminal	AQ-6	Cover haul trucks with full tarp.
		CR-1	If ground disturbance is planned within recorded site, a limited Phase II evaluation of the archaeological site shall first be conducted.

**Table 1.5-2 (Concluded)
Proposed Mitigation Measures for Significant Impacts**

Issue Area	Impact	Required Mitigation Measure
Geology and Soils	Potential for earthquake-induced liquefaction at the Van Nuys Terminal	GS-3 All project components will employ project design and construction practices that adhere to appropriate earthquake safety codes and the current Uniform Building Code.
Hazards	Incremental risks from use and storage of hazardous materials	H-1 Perform a pre-startup safety review by qualified personnel.
	Risk from catastrophic failure of new pentane storage sphere	H-2 Risk of upset from pentane storage tank will be reduced by implementation of a 24-hour, 7-day week staffing; fire detectors; manual shutdown of liquid in/out of pentane sphere in case of fire; high-pressure fire deluge systems and protective coatings for pentane tank and support structure to reduce possibility of boiling liquid expanding vapor explosions (BLEVEs) caused by nearby fire; and the current monitoring system will apply to the existing and modified pipelines related to this project.
	Potential risk from additional truck trips of ethanol	H-3 Hiring policies to ensure driver familiarity with flammable material hauling; and improved driver training; enhanced vehicle inspection and maintenance programs.
Noise	Impacts from construction of the rail spur at the Montebello Terminal	N-8 Rail Spur construction at the Montebello Terminal will be limited to daytime hours (7:00 AM to 6:00 PM) during the weekdays (Monday through Friday).
	Impacts from operation of new and modified equipment at the Refinery	N-9 Specify that to the extent feasible all pumps and compressors meet a specification of 85 dBA at 3 feet.
	Impacts from additional rail use at the Refinery	N-10 Minimize rail traffic noise through proper routine maintenance

1.6 Chapter 5 Summary - Project Alternatives

Pursuant to CEQA Guidelines §15126.6, this Draft EIR identifies and compares the relative merits of a range of reasonable alternatives to the proposed project. A detailed discussion of the alternatives is presented in Chapter 5.

In order to evaluate the environmental impacts of the proposed project, the environmental characteristics of the existing environment has been compared to the proposed project as well as the environmental impacts of three project alternatives. The project alternatives consider other possible means of feasibly attaining the objectives of the proposed project that would avoid or substantially lessen any of the significant effects of the proposed project, and provide a means for evaluating the comparative merits of each alternative.

- Alternative 1: Construct a New Alkylate Depentanizer

- Alternative 2: Construct a Refrigerated Pentane Storage Tank Instead of Pentane-Gasoline Mix Storage Tank
- Alternative 3: Feeding All of the Incremental Butanes Produced at the FCC to the Alkylation Unit

In accordance with Public Resource Code §21178(g) the “no project” alternative and alternative sites outside of existing Refinery boundaries are not considered in this Draft EIR. Therefore, the “no project” alternative is not considered in the Draft EIR.

1.7 Chapter 6 Summary - Cumulative Impacts

In order to assess cumulative impacts, other planned projects in the area of the Refinery and distribution terminals were identified. These cumulative impacts and discussion are presented in Chapter 6. No significant cumulative impacts beyond those impacts identified with project are anticipated to occur.

1.8 Chapters 7 and 8 Summary – Persons and Organizations Consulted and References

Information on persons and organizations contacted and references cited is presented in Chapters 7 and 8, respectively.