SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Final Negative Declaration for:
Ultramar Inc. Wilmington Refinery
Cogeneration Project

State Clearinghouse No. 2012041014

October 2014

Executive Officer
Barry Wallerstein, D. Env.

Deputy Executive Officer, Planning
Rules, and Area Sources
Elaine Chang, DrPH

Assistant Deputy Executive Officer,
Planning, Rule Development, and Area Sources
Philip Fine, Ph.D.

Director of Strategic Initiatives
Planning, Rule Development, and Area Sources
Susan Nakamura

Submitted to:
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Prepared by:
ENVIRONMENTAL AUDIT, INC.

Reviewed by:
James Koizumi – Air Quality Specialist
Michael Krause – Program Supervisor, CEQA
Barbara Baird – Chief Deputy Counsel
Connie Yee – Air Quality Engineer II
Veera Tyagi – Senior Deputy District Counsel
Megan Lorenz – Senior Deputy District Counsel
Lauren Nevitt – Senior Deputy District Counsel

[This page intentionally left blank.]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT GOVERNING BOARD

Chairman: Dr. WILLIAM A. BURKE
Speaker of the Assembly Appointee

Vice Chairman: DENNIS YATES
Mayor, City of Chino
Cities of San Bernardino County

MEMBERS

MICHAEL D. ANTONOVICH
Supervisor, Fifth District
Los Angeles County

BEN BENOIT
Councilmember, City of Wildomar
Cities of Riverside County

JOHN J. BENOIT
Supervisor, Fourth District
Cities of Riverside County

JOE BUSCAINO
Councilmember, Fifteenth District
City of Los Angeles

MICHAEL A. CACCIOTTI
Councilmember, City of South Pasadena
Cities of Los Angeles County, Eastern Region

JOSIE GONZALES
Supervisor, Fifth District
San Bernardino County

DR. JOSEPH K. LYOU, Ph.D.
Governor's Appointee

JUDITH MITCHELL
Mayor Pro Tem, City of Rolling Hills Estates
Cities of Los Angeles County, Western Region

SHAWN NELSON
Supervisor, Fourth District
Orange County

DR. CLARK E. PARKER, SR.
Senate Rule Committee Appointee

MIGUEL A. PULIDO
Mayor, City of Santa Ana
Cities of Orange County

Executive Officer
BARRY WALLERSTEIN, D. ENV.

[This page intentionally left blank.]

TABLE OF CONTENTS
~~DRAFT~~ FINAL NEGATIVE DECLARATION FOR: ULTRAMAR, INC. WILMINGTON REFINERY PROPOSED COGENERATION PROJECT

Page No.

Page No.

FIGURES:

TABLES:

APPENDICES:

PREFACE

This document constitutes the Final Negative Declaration (ND) for the Ultramar Inc. Wilmington Refinery Proposed Cogeneration Project. The Draft ND was circulated for a 30-day public review and comment period (April 12, 2013 through May 14, 2013). The public comment period was extended to June 4, 2013 at the request of Elizabeth Klebaner of Adams, Broadwell, Joseph and Cardozo. The SCAQMD received one email and two comment letters on the Draft ND during the public comment period. Those comments were reviewed and evaluated and are included in Appendix F of this Final ND, along with responses to those comments.

Minor modifications have been made to the Draft ND such that it is now a Final ND. The SCAQMD has evaluated all modifications to the proposed project and concluded that none of the modifications alter any conclusions reached in the Draft ND, nor provide new information of substantial importance relative to the draft document that would require recirculation of the Draft ND pursuant to CEQA Guidelines §15073.5. Therefore, this document is now a Final ND. Additions to the text of the ND are denoted using italics. Text that has been eliminated is shown using ~~strike outs~~.

[This page intentionally left blank.]

CHAPTER 1

PROJECT DESCRIPTION

Introduction
Agency Authority
Project Objective
Project Location
Project Description

[This page intentionally left blank.]

CHAPTER 1.0

PROJECT DESCRIPTION

1.1 INTRODUCTION

Ultramar Inc., a Valero Energy Company, doing business as Valero Wilmington Refinery (Refinery), is proposing the Ultramar Inc. Wilmington Refinery Cogeneration Project (Project), which would consist of constructing and operating a cogeneration plant (Cogen Unit) to produce electricity on-site at the Refinery. The Refinery currently does not operate any cogeneration equipment or routinely produce electricity onsite. At least 70 percent of the electricity required to operate the facility is supplied by Los Angeles Department of Water and Power (LADWP) with the remaining 30 percent supplied by the adjacent Air Products Hydrogen Plant facility. The overall focus of the proposed Project is to generate electricity on-site allowing the Refinery to rely mainly on on-site power generation under normal operating conditions as part of an effort to reduce the risk of process upset due to interruptions of power supplied by any third-party provider, with the benefit of producing less air contaminants per megawatt by utilizing cleaner technology than is currently used to produce the LADWP-purchased electricity.

To stabilize electrical needs and transfer steam production to a more efficient steam generating system, Ultramar proposes to install a new 35 megawatt (MW) Cogen Unit including a natural gas-fired turbine electric generator, a heat recovery steam generator equipped with a refinery fuel gas-fired duct burner for supplemental steam production, a selective catalytic reduction (SCR) unit and catalyst for emissions control of nitrogen oxides (NOx) and carbon monoxide (CO), the necessary piping to connect to an existing aqueous ammonia tank to supply ammonia to the SCR unit, and a new control room. The installation of the Cogen Unit would substantially decrease the Refinery's need for offsite sources of electricity and limit the use of several existing boilers that produce steam at the Refinery.

The proposed Project includes new infrastructure supporting the processes and operations throughout the Refinery. The proposed Project would involve physical changes within the Refinery while providing operational and functional stability and reliability with no change in the processing of crude and no increase in crude throughput at the Refinery.

1.2 AGENCY AUTHORITY

The California Environmental Quality Act (CEQA) (Public Resources Code §21000 et seq., and Title 14 California Code of Regulations §15000 et seq.), requires that the environmental impacts of proposed projects be evaluated and that feasible methods to reduce, avoid or eliminate significant adverse impacts of these projects be identified and implemented, if feasible. The lead agency is the public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment (Public Resources Code §21067). The proposed Project requires discretionary approval from the South Coast Air Quality Management District

(SCAQMD) for air quality permits for modifications to existing stationary source equipment and installation of new stationary source equipment and, therefore, it is subject to the requirements of CEQA. Because the SCAQMD has the primary responsibility for supervising or approving the entire project as a whole it is the most appropriate public agency to act as lead agency (CEQA Guidelines §15051(b)).

In accordance with §15002(a) CEQA Guidelines the basic purposes of CEQA are to inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects through the use of mitigation measures or alternatives to the project, and disclose to the public the reasons why a government agency approved the project if significant environmental effects are involved.

To fulfill the purpose and intent of CEQA, as the lead agency for this project, the SCAQMD originally prepared and released for public review and comment a Notice of Preparation and Initial Study (NOP/IS) to identify potentially significant environmental impacts and provided a preliminary analysis associated with the Ultramar, Inc. Wilmington Refinery Cogeneration Project. The preliminary analysis of potential adverse impacts from the proposed Project in the IS indicated that it had the potential to generate significant adverse air quality, greenhouse gas emissions, and hazards and hazardous materials impacts.

The NOP/IS was circulated for a 34-day comment period beginning on March 30, 2012, through May 3, 2012. The NOP/IS was circulated in Wilmington and to neighboring residents, responsible agencies, other public agencies, and interested individuals in order to solicit input on the scope of the environmental analysis to be included in the EIR. Four comment letters were received on the NOP/IS during the public comment period.

The NOP/IS concluded that the proposed Project would not create significant adverse environmental impacts to the following areas: aesthetics, agricultural and forestry resources, biological resources, cultural resources, energy, geology and soils, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste, and transportation/traffic. No comments were received disputing these conclusions.

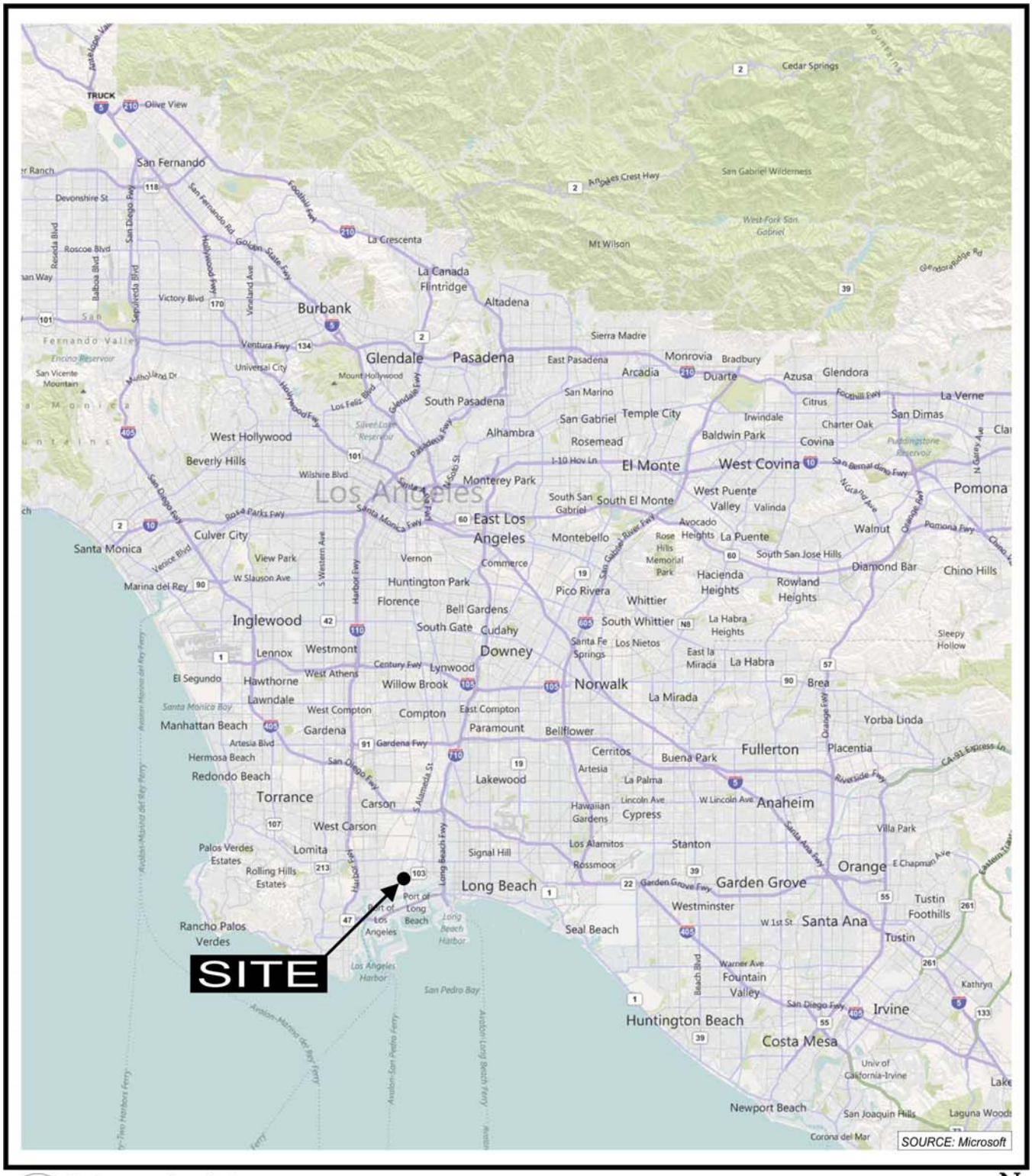
However, further evaluation of air quality, greenhouse gas emissions, and hazards and hazardous materials subsequent to the release of the NOP/IS for public review and comment did not identify any significant adverse impacts from the proposed Project. Therefore, in lieu of an EIR, the SCAQMD has prepared this Negative Declaration (ND) to address the potential adverse environmental impacts associated with the proposed Project. An ND for a project subject to CEQA is prepared when an environmental analysis of the project shows that there is no substantial evidence that the project may have a significant effect on the environment (CEQA Guidelines §15070(a)). As discussed in Chapter 2, the proposed Project is not expected to result in any significant adverse environmental impacts; therefore, an ND is the appropriate CEQA document.

The evaluation presented in Chapter 2 presents the analysis and discussions previously presented in the NOP/IS for the following areas: aesthetics, agricultural and forestry resources, biological resources, cultural resources, energy, geology and soils, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste, and transportation/traffic as all conclusions for these topics remain less than significant. The analysis for air quality, greenhouse gas emissions and hazards and hazardous materials have been revised to include detailed information demonstrating that air quality, greenhouse gas emissions and hazards and hazardous materials impacts from the proposed Project would be less than significant. Although not required, comment letters received on the NOP/IS and the responses to those comments are included in Appendix A of this ND.

1.3 PROJECT LOCATION

The proposed Project would occur at the Refinery, which is located at 2402 East Anaheim Street, in the Wilmington District of the City of Los Angeles in the southern portion of Los Angeles County (see Figure 1-1). The proposed Project is entirely within the property boundaries of the Refinery.

The Refinery is bounded to the north by Anaheim Street and industrial uses. Also northward of Anaheim Street are a metal recycling facility and another major refinery complex. The Refinery is bounded on the south by an area used previously for oil field production facilities and which is now developed for marine cargo transport and storage facilities and other Port of Long Beach related uses. The Air Products hydrogen plant is located adjacent to and immediately west of the Valero Refinery (west of the Dominguez Channel) on Henry Ford Avenue. To the west of Henry Ford Avenue are additional industrial and commercial uses and the Port of Los Angeles. To the east are automobile storage yards, a cogeneration plant, and a petroleum coke calcining plant. The Terminal Island Freeway (State Route 103) runs through the Refinery boundaries (see Figure 1-2). Historically, crude oil production facilities were scattered throughout this general area including where the Refinery is now located, most of which are no longer producing crude oil with none located within the Refinery boundary. The closest residential area is about one-half mile northwest of the Refinery in Wilmington.



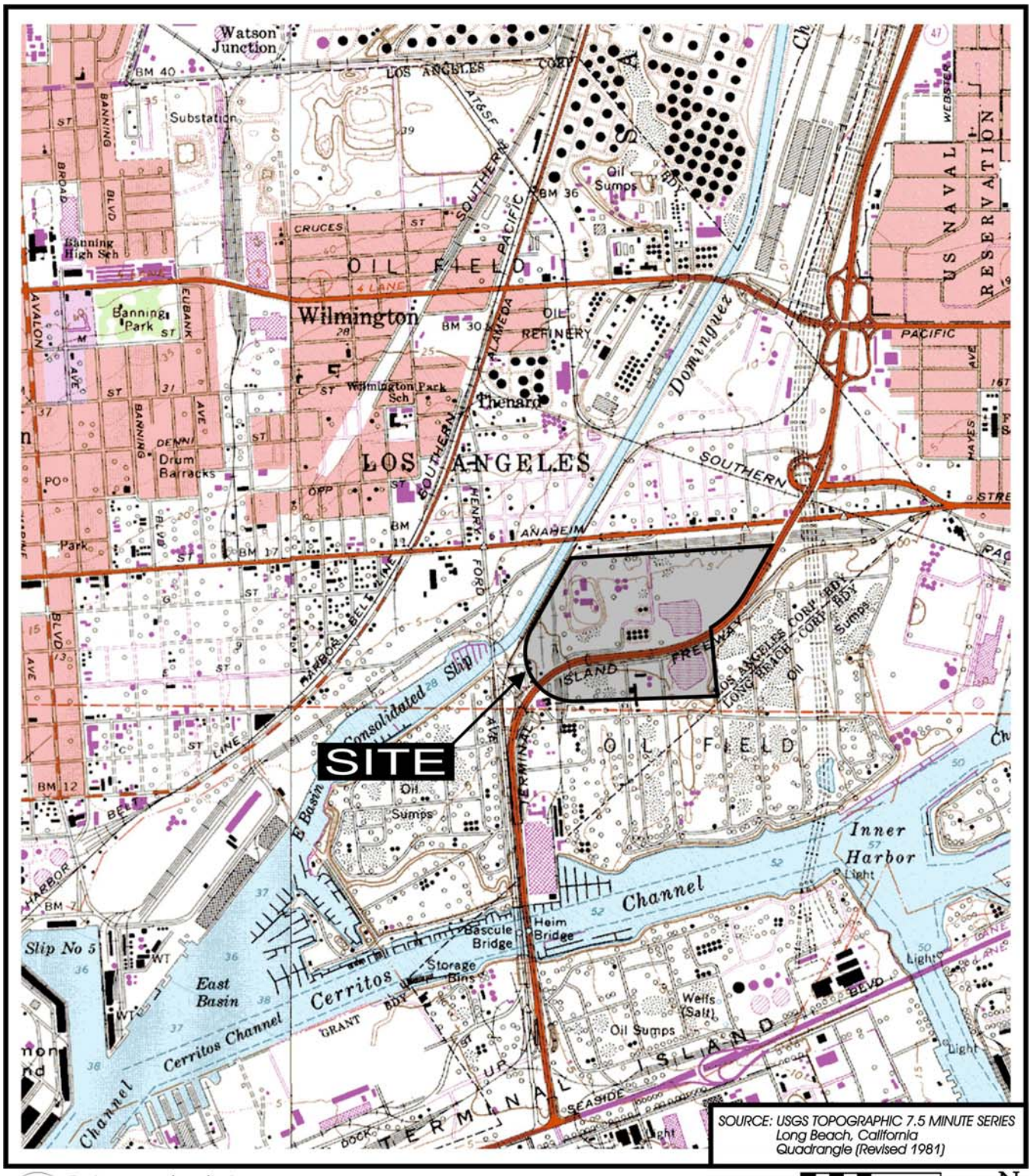
Environmental Audit, Inc.

N

FIGURE 1-1
REGIONAL MAP
VALERO

Project No. 2709

N:\2709\NegDec\RegionalMap (rev.1a).cdr



Environmental Audit, Inc.

FIGURE 1-2
SITE LOCATION MAP
VALERO

Project No. 2709
N:\2709\NegDec\SiteLocMap (rev.1a).cdr

1.4 OVERVIEW OF CURRENT OPERATIONS

Crude oils and distillates (both of which are also referred to as feedstocks), used to produce gasoline and other petroleum products, are delivered to marine terminals in the Port of Los Angeles/Port of Long Beach by ship. Feedstocks are delivered to the Refinery by pipelines. Crude oil is processed in the crude unit where it is heated and distilled into components, most of which are processed in downstream Refinery units. The heavy residual oil leaving the crude unit is further distilled in the vacuum unit to yield additional, lighter hydrocarbon products and the vacuum residuum. The lighter hydrocarbon components from the crude unit and vacuum unit are fed to other Refinery units for further processing, primarily the Fluid Catalytic Cracking Unit (FCCU), gas oil hydrotreater, the Unibon, and the naphtha hydrotreater unit. The feedstocks are refined into the major Refinery products, which include unleaded gasoline, diesel, jet fuels, low sulfur distillates, other distillate fuels, petroleum coke, and sulfur. Elemental sulfur and petroleum coke are produced as by-products of the refining process. Major processing units at the Refinery include the crude and vacuum distillation, delayed coking, catalytic reforming, hydrotreating, fluid catalytic cracking, alkylation, sulfur recovery, and auxiliary systems. Under the existing Refinery configuration, about 78,000 barrels per day (bpd) of crude oil and about 50,000 bpd of distillates are purchased and processed.

The Refinery currently purchases approximately 70 percent of the electricity needed for operations from LADWP with the remaining 30 percent delivered from the adjacent Air Products facility. The Air Products hydrogen plant uses waste heat from the hydrogen production process to produce electricity and steam, which is provided to the Refinery.

1.5 PROPOSED PROJECT

1.5.1 Cogeneration Facilities

The proposed Project would not affect or change the operations at Air Products. Electricity and steam provided by Air Products would continue to be produced from the waste steam generated from hydrogen production. Under normal operating conditions, the proposed Project would allow the Refinery to rely on on-site power generation supplemented with power currently supplied by Air Products without the need to import publicly-provided power supplied by LADWP. During normal operations, the proposed Project would replace the 70 percent of electricity currently supplied by LADWP with the remaining 30 percent continuing to be provided by Air Products. Electricity and steam demand within the Refinery continuously fluctuates. On occasion when the Refinery operated at high capacity, additional electricity demand, estimated to be a maximum of about three MW, was supplied by LADWP. This small increase in electricity demand would continue to occur periodically once the proposed Project becomes operational.

Operators of the Ultramar Refinery are proposing to build a new 35 MW Cogen Unit, which includes a natural gas-fired turbine electric generator, a heat recovery steam generator equipped with a refinery fuel gas-fired duct burner for supplemental steam

production, an SCR unit for emissions control of NOx and CO, a Continuous Emissions Monitoring System (CEMS), the necessary piping to connect to an existing aqueous ammonia tank to supply ammonia to the SCR unit, an evaporative cooler, and a control room. The proposed Project would be constructed adjacent to existing electrical switch gear in Refinery Area 8 (see Figure 1-3).

1.5.2 Modifications to Existing Boilers

Steam demand within the Refinery, like electricity demand, fluctuates continually and is provided primarily by the existing refinery gas-fired boilers 86-B-9000, 86-B-9001, and 86-B-9002 with some steam provided by non-fired boilers (i.e., non-fired boilers use hot process streams to produce steam, while cooling the process stream). Additional steam demand can be provided by Air Products, which could vary from zero to approximately ten percent depending on need. No changes to the non-fired boilers or the Air Products provided steam would occur as part of the proposed Project. The Cogen Unit would replace up to approximately 70 percent of the steam production capacity of the existing boilers 86-B-9000, 86-B-9001, and 86-G-9002. During operation of the Cogen Unit, the remaining steam demand would be provided by some combination of steam from Air Products and boilers 86-B-9001 and 86-B-9002, which would be required to operate at reduced loads. Boiler 86-B-9000 would normally be shut down while the Cogen Unit is operating. Even during low capacity periods Boilers 86-B-9001 and 86-B-9002 would need to continue operating during operation of the Cogen Unit so they are immediately available to produce steam in the event that the Cogen Unit is unexpectedly shut down. SCAQMD permits for the boilers would limit emission rates when the Cogen Unit is operating such that the Cogen Unit would be installed with no net increase in emissions of NOx, sulfur oxides (SOx), and less than significant increases in volatile organic compounds (VOC), carbon monoxide (CO), particulate matter less than ten microns in diameter (PM10), or particulate matter less than 2.5 microns in diameter (PM2.5).

1.5.3 Modifications to Existing Ammonia Delivery System

The Refinery has an existing aqueous ammonia storage and delivery system for the existing SCR units used to control NOx emissions from other refinery combustion devices. The existing aqueous ammonia delivery system would be modified to include a 600-foot length of two-inch diameter delivery line to the new SCR unit at the Cogen Unit. The new delivery line would tie-in to the existing system to the south of the Cogen Unit location. Aqueous ammonia would be supplied at a rate of up to 240 gallons per day from the existing 9,000-gallon storage tank located 700 feet east of the Cogen Unit location, so no new ammonia storage tank would be necessary. The existing ammonia storage tank is refilled approximately once every one to two months, as needed. The proposed Project would increase aqueous ammonia deliveries by as much as 16 truck trips per year, which would increase the tank refilling schedule to approximately once every three to four weeks based on maximum ammonia usage rates.

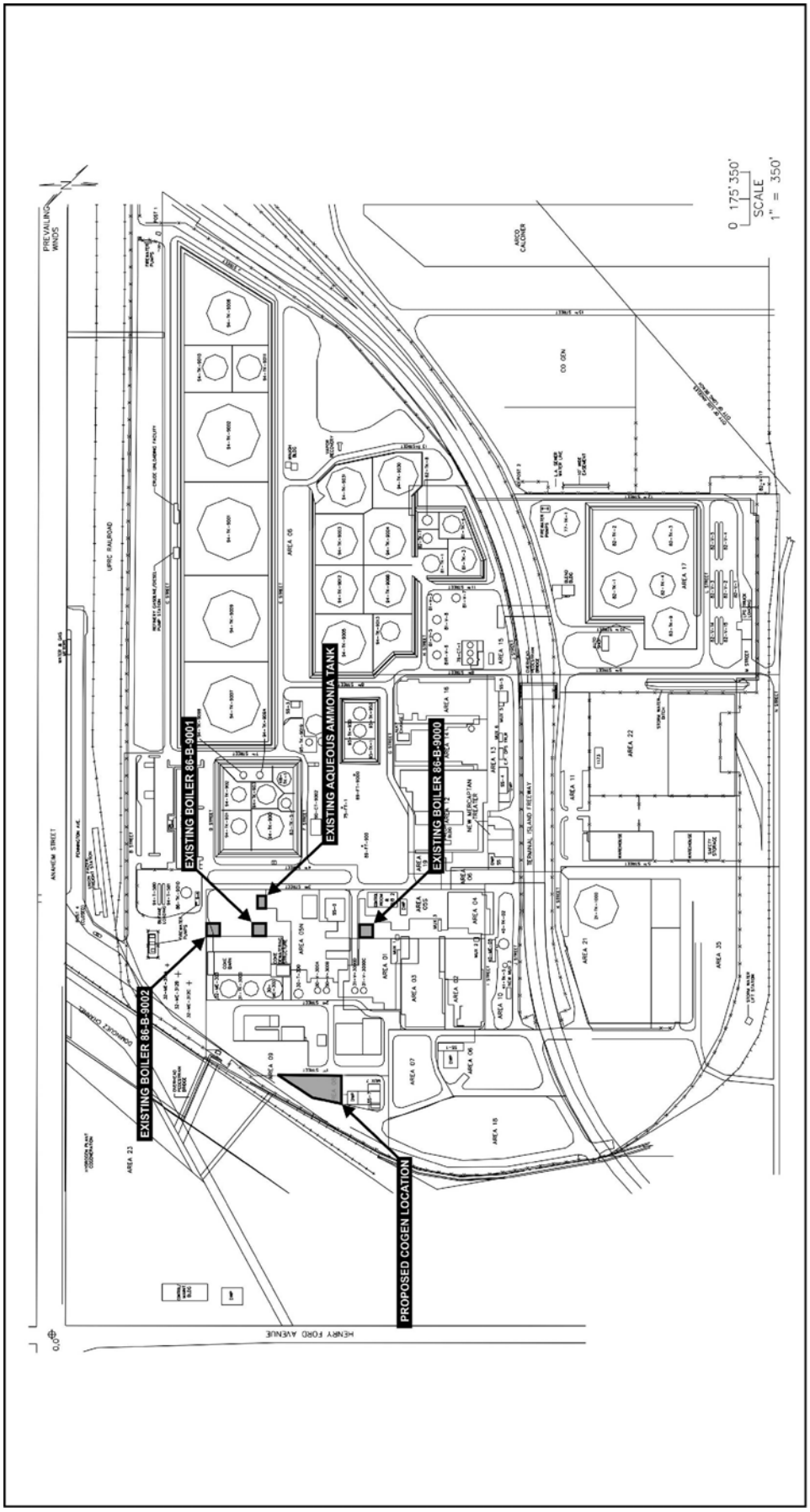


FIGURE 1-3
SITE PLAN
VALERO

ENVIRONMENTAL AUDIT, INC.

Project No. 2709

1.5.4 Modifications to Other Refinery Support Systems

Existing support systems that supply process water, natural gas, and refinery fuel gas Refinery-wide would be modified to supply the Cogen Unit. The modifications include installing two supply lines to the Cogen Unit of up to 600 feet; one two-inch diameter pipeline to supply process water and one four-inch diameter pipeline to supply refinery fuel gas, which would be connected to the existing delivery systems that service the adjacent Naphtha Hydrotreater Unit to the south of the proposed Cogen Unit. The proposed Project also includes installing 100 to 600 feet of four- to eight-inch diameter natural gas pipeline to connect to the existing natural gas delivery system located to the west of the proposed Cogen Unit, which would also supply fuel to the Cogen Unit. The support systems would deliver approximately 26,200 gallons per day of process water, eight million standard cubic feet per day of natural gas per day, and three million standard cubic feet per day of refinery fuel gas to the Cogen Unit. The proposed Project is expected to reduce the amount of process water to the boilers by as much as 16,561 gallons per day and reduce the amount of refinery fuel gas to the boilers by approximately six million standard cubic feet per day. Reducing the amount of process water and refinery fuel gas to the boilers would not require any modifications to these pipeline supply systems.

1.5.5 Construction Schedule

Construction of the Ultramar Inc. Wilmington Cogeneration Project is expected to take approximately two years to complete. Construction activities for most aspects of the proposed Project are expected to begin in the first quarter of 2014 and be completed by the fourth quarter of 2014 (12 months). Construction activities at the Refinery would not involve the relocation of individuals, impact housing or commercial facilities, or change the distribution of the population because the proposed Project would occur completely within the boundaries of an existing industrial facility site. The construction work force of approximately 44 workers, which is temporary, is expected to come from the existing labor pool in the southern California area.

1.6 REQUIRED PERMITS AND APPROVALS

The proposed Project will require approvals from a variety of federal, state, and local agencies (see Table 1-1). Examples of general permits and approvals required for the Refinery are summarized below. 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. Table 1-1 identifies the environmental permits required for the existing Refinery operations.

TABLE 1-1

Federal, State, and Local Agency Requirements/Permits and Project Applicability

Agency Permit or Approval	Requirement	Applicability to Project
Federal		
Environmental Protection Agency (U.S. EPA)	Prevention of Significant Deterioration	Air quality requirements for new and modified major stationary sources in attainment areas.
	Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007 40 CFR 60 Subpart Ja	Contains requirements for fuel combustion devices including the refinery fuel gas-fired duct burner.
	Standards of Performance for Stationary Gas Turbines 40 CFR 60 Subpart GG	Air quality requirements for the Cogen gas turbine.
	Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries 40 CFR 60 Subpart GGGa	Contains requirements for inspection and maintenance of fugitive VOC-emitting components.
	Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems 40 CFR Part 60 Subpart QQQ	Contains requirements for controlling VOC emissions from wastewater systems.
	Standards of Performance for Stationary Combustion Turbines 40 CFR 60 Subpart KKKK	Establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines.
	Accidental Release Prevention 40 CFR 68	Requires risk management planning for specified chemicals.
	National Emission Standard for Equipment Leaks (Fugitive Emission Sources) 40 CFR 61 Subpart V	Contains requirements for inspection and maintenance of fugitive components in service where hazardous air pollutants are present.
	National Emission Standards for Hazardous Air Pollutants (NESHAPs) from Petroleum Refineries 40 CFR 63 Subpart CC	Requires monitoring reporting and recordkeeping for fugitive VOC-emitting components.
	Stationary Combustion Turbines 40 CFR 63 Subpart YYYY	Establishes emissions standards of hazardous air pollutants from gas turbines.
	Hazardous Waste Regulations 40 CFR Part 260	Establishes hazardous waste identification, classification, generation, management and disposal requirements.
Occupational Safety and Health Administration (OSHA)	Process Safety Management OSHA 29 CFR Part 1910	Worker process safety standards.

TABLE 1-1 (Continued)

Federal, State, and Local Agency Requirements/Permits and Project Applicability

Agency Permit or Approval	Requirement	Applicability to Project
State		
California Occupational Safety and Health Administration (Cal-OSHA)	Construction - related permits	Excavation, construction, worker safety permits.
California Coastal Commission	Coastal Development Permit	Required for modifications to facilities located within the Coastal Zone.
Department of Transportation (Caltrans)	Oversized Load Permits	Required for oversized deliveries.
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.
California Emergency Management Agency	California Accidental Release Prevention Program (CalARP) Title 19, CCR Division 2, Chapter 4.5	Requires risk management planning for specific chemicals.
Regional		
South Coast Air Quality Management District (SCAQMD)	CEQA Document Preparation	SCAQMD is the lead agency for preparation and certification of the proposed Project ND.
	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 218: Continuous Emissions Monitoring	Applications are required for continuous emission monitoring systems (CEMS).
	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 301: Permitting and Associated Fees	Requires fees to be paid for new or modified sources and evaluation of projects.
	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 create emissions of fugitive dust.
	SCAQMD Rule 404: Particulate Matter – Concentration	Limits particulate matter emissions from any source in excess of specified concentrations.
	SCAQMD Rule 407: Liquid and Gaseous Air Contaminants	Limits carbon monoxide (CO) and sulfur dioxide (SO_2) emissions.
	SCAQMD Rule 408: Circumvention	Prohibits building or installation of equipment without resulting in a reduction in the release of contaminants or that would conceal an emission into the atmosphere.

TABLE 1-1 (Continued)

Federal, State and Local Agency Permits and Applications

Agency Permit or Approval	Requirement	Applicability to Project
SCAQMD (continued)	SCAQMD Rule 409: Combustion Contaminants	Limits combustion contaminant emissions.
	SCAQMD Rule 430: Breakdown Provisions	Requires reporting of any malfunction or breakdown, which results in a violation of any rule or permit condition.
	SCAQMD Rule 466: Pumps and Compressors	Establishes maintenance requirements for pumps and compressors.
	SCAQMD Rule 466.1: Valves and Flanges	Establishes maintenance requirements for valves and flanges.
	SCAQMD Rule 467: Pressure Relief Devices	Requires pressure relief devices to be vented to a vapor control system and establishes inspection and maintenance requirements.
	SCAQMD Rule 475: Electric Power Generating Equipment	Establishes emission limits for electrical power generating equipment.
	SCAQMD Rule 476: Steam Generating Equipment (excluding NOx Requirements)	Establishes emission limits for steam generating equipment.
	SCAQMD Rule 480: Natural Gas Fired Control Devices	Requires contingency plan for use curtailment activities during a natural gas shortage.
	SCAQMD Rule 701: Air Pollution Emergency Contingency Actions	Establishes requirements during smog alerts.
	SCAQMD Regulation IX: Standards of Performance for New Stationary Sources	Incorporates Federal regulations by reference.
	SCAQMD Regulation X: National Emissions Standards for Hazardous Air Pollutants	Incorporates Federal regulations by reference.
	SCAQMD Rule 1123: Refinery Process Turnarounds	Establishes operating requirements during process unit scheduled shutdown and maintenance activities (turnarounds).
	SCAQMD Rule 1134: Emissions of Oxides of Nitrogen from Stationary Gas Turbines	Establishes nitrogen oxide (NOx) emission limits for gas turbines.
	SCAQMD Rule 1166: Excavation of VOC Contaminated Soils	Required if soils to be excavated are impacted by hydrocarbons.
	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 requirements for best available control technology (BACT), modeling for significant impacts, and providing offsets for emission increases.

TABLE 1-1 (Concluded)

Federal, State and Local Agency Permits and Applications

Agency Permit or Approval	Requirement	Applicability to Project
SCAQMD (concluded)	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 (T-BACT) is required when equipment 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 and for greenhouse gas emission sources.
	SCAQMD Regulation XX: Regional Clean Air Incentives Market (RECLAIM) including key rules: Rule 2005: NSR for RECLAIM Pollutants	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. Requires the use of BACT.
	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.
Regional Water Quality Control Board – Los Angeles Region	Stormwater Pollution Prevention Plan	Required for construction activities.
Local		
City of Los Angeles	Coastal Development Permit	Required for facilities within the Coastal Zone.
	Building permit	Required for foundations, building, etc.
	Grading permit	Required prior to grading land.
	Plumbing and electrical permits	General construction permit.

1.6.1 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 applicability or non-applicability from some federal agencies 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, Regulation XXX - Title V, Regulation IX -New Source Performance Standards (NSPS), and Regulation X – National Emissions Standards for Hazardous Air Pollutants (NESHAPs) are implemented by the SCAQMD, while hazardous waste regulations (Title 40 of the Code of Federal Regulations) are enforced by the California Department of

Toxic Substances Control (DTSC). However, the U.S. EPA is still required to review the Title V Permits for Title V compliance. 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.

1.6.2 State Approvals

Construction-related permits may be required from the California Occupational Safety and Health Administration (CalOSHA) for construction, excavation, and crane erection. Any transport of heavy construction equipment or oversized equipment (e.g., gas turbine), 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 California Coastal Commission (CCC) is responsible for issuing the Coastal Development Permit for areas of the coast that do not have approved Local Coastal Plans.

1.6.3 Regional Approvals

The SCAQMD has responsibility as lead agency for the CEQA process, including preparation and certification of this ND 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. Permit conditions or plan approvals, e.g., SCAQMD Rule 1166 plans for soil remediation and demolition activities, may also be required for the proposed Project.

1.6.4 Local Approvals

While the City of Los Angeles does not have an approved Local Coastal Plan, such that the CCC-issued Coastal Development Permit is required, the City of Los Angeles is responsible for issuing the local Coastal Development Permit. The Los Angeles City Fire Department 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 Los Angeles to assure that the proposed Project complies with the California Building Code.

CHAPTER 2

ENVIRONMENTAL CHECKLIST

[This page intentionally left blank.]

INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a proposed project's adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

GENERAL INFORMATION

Project Title:	Ultramar Inc. Wilmington Refinery – Proposed Cogeneration Project
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
Contact Person:	James Koizumi
Contact Phone Number:	(909) 396-3234
Project Sponsor's Name:	Ultramar Inc., a Valero Energy Company
Project Sponsor's Address:	2402 East Anaheim Street Wilmington, CA 90744
General Plan Designation:	Heavy Manufacturing
Zoning:	M3-1
Description of Project:	The proposed Project consists of the addition of a 35 MW Cogeneration Unit including a gas turbine, heat recovery steam generator, a selective catalytic reduction unit, an evaporative cooler, and connections to an existing aqueous ammonia tank at the Refinery.
Surrounding Land Uses and Setting:	Industrial and commercial uses including petroleum refining, hydrogen production facilities, storage tank facilities, distribution terminals, and scrap yards. The Refinery is located within the Coastal Zone, as defined by the California Coastal Act.
Other Public Agencies Whose Approval is Required:	City of Los Angeles U.S. EPA California Coastal Commission City of Los Angeles Fire Department Regional Water Quality Control Board, Los Angeles Region Cal-OSHA Caltrans DTSC

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with an "✓" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

☑ Aesthetics	☑ Geology and Soils	☐ Population and Housing
☐ Agriculture and Forestry Resources	☑ Hazards and Hazardous Materials	☐ Public Services
☑ Air Quality and Greenhouse Gas Emissions	☑ Hydrology and Water Quality	☐ Recreation
☐ Biological Resources	☐ Land Use and Planning	☑ Solid/Hazardous Waste
☐ Cultural Resources	☐ Mineral Resources	☑ Transportation/Traffic
☑ Energy	☑ Noise	☑ Mandatory Findings

DETERMINATION

On the basis of this initial evaluation:

☑ I find the proposed project COULD NOT have a significant effect on the environment, and that a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: April 10, 2013 **Signature**: 

Michael Krause
CEQA Program Supervisor

ENVIRONMENTAL CHECKLIST AND DISCUSSION

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
1.0	**AESTHETICS.** Would the project:				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☑	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

1.1 Significance Criteria

The proposed project impacts on aesthetics will be considered significant if:

The project will block views from a scenic highway or corridor.

The project will adversely affect the visual continuity of the surrounding area.

The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

1.2 Environmental Setting and Impacts

1. a), b), and c) Construction activities are not expected to adversely impact scenic views, scenic resources or substantially degrade the visual character of the site since most of the heavy equipment and activities would occur entirely within the western portion of the Refinery which is isolated from surrounding facilities and the nearest residential neighborhoods located to the west of Henry Ford Avenue and the Dominguez Channel. Most of the construction equipment is low in height and would not be visible to surrounding offsite areas due to the presence of fencing and structures, which currently buffer the views of low structures at the Refinery. A maximum of two cranes may temporarily (approximately three months) be visible to the surrounding industrial areas and to people traveling on the Terminal Island Freeway (since the freeway is elevated and bisects the Refinery). Residential areas are located about one-half mile northwest

of the Refinery and construction activities are not expected to be noticeable in these areas due to the distance from the Refinery and other buildings or structures that block views of the refinery from the residences.

The proposed Project would introduce a minor visual change to the Refinery. The Cogen Unit would include the natural-gas fired turbine, a heat recovery steam generator with a refinery fuel gas-fired duct burner, an SCR unit and catalyst to reduce NOx and CO, a control room, and a CEMS, and a new 95-foot stack that would be visible to areas outside the Refinery. The new stack, ducting, and facilities would be similar in height to the existing refinery equipment and would be considerably lower than the structures nearby including the four coke drums, which including the superstructure, are over 200 feet tall and the three flare stacks at the refinery are 250 feet tall. The appearance of the new unit is expected to be similar to the existing industrial uses within and adjacent to the Refinery, so that no significant adverse impacts to aesthetic resources are expected. Residential areas are located about one mile away so that most of the new structures are not expected to be noticeable in these areas due to the distance from the Refinery.

The general area around the Refinery is zoned for heavy industrial uses ([Q]M3-1, previously M3-1VL). The City of Los Angeles "VL" designation limits construction of buildings and structures to a height not greater than 45 feet. In December 1996, the City of Los Angeles enacted a zoning ordinance which eliminated the 1VL height limit designation for the Refinery to make it consistent with the local land use plan that allows for refining operations in heavy industrial zones (Los Angeles City Ordinance No. 171439, 1996). A portion of the property west of the Dominguez Channel acquired from the Port of Los Angeles was restricted to port-related uses, which is now leased to Air Products. In 1994 the Refinery obtained a zoning land use variance from the City of Los Angeles, Office of the Zoning Administrator to allow Refinery projects on this property (Wilmington, Case No. ZA 94-0593(ZV)). Accordingly, the Refinery property may be developed for refinery applications free of height limitations and other restrictions.

There are no state designated scenic highways on or near the Refinery. Consequently, there are no historic buildings located within scenic highways or corridors located in the vicinity of the Refinery. Similarly, there are no scenic resources such as trees or rock outcroppings located within scenic highways on or near the Refinery.

Therefore, based on the above, no significant adverse impacts to the following aesthetic resources are expected: scenic vistas; scenic resources, including, but not limited to, trees, rock outcroppings, or historic buildings within a state scenic highway; or degradation of the existing visual character.

1. d) Construction activities are not anticipated to require additional lighting because they are scheduled to take place during daylight hours. Although not anticipated, if the construction schedule requires nighttime activities, temporary lighting may be necessary. Because the Refinery operates 24 hours per day, for safety and security reasons, the Refinery is currently brightly illuminated at night. The Port facilities and adjacent industrial operations, which also operate 24 hours per day, are brightly illuminated at night for safety and security purposes.

Since the project location is completely located within the boundaries of the existing Refinery, any additional temporary lighting is not expected to be discernible from the existing permanent night lighting. Any temporary nighttime lighting will be required to point toward the interior of the Refinery to limit the potential for offsite glare.

If additional permanent light sources are necessary for operation of the Cogen Unit and associated equipment, they would be installed on the new equipment to provide illumination for operations personnel at night in accordance with applicable safety standards including the Cal-OSHA (Title 8, California Code of Regulations (CCR), §3317). These additional light sources, if needed, are not expected to create an offsite glare impact because the proposed Project components would be located within existing industrial facilities, which are already lighted at night for nighttime operations. Further, adjacent Port and industrial facilities are also brightly lit and residential areas are located about one mile away from the Refinery so additional lighting at the site is not expected to be noticeable in residential areas. Therefore, no significant adverse light and glare impacts are anticipated from the proposed Project.

1.3 Mitigation Measures

No significant adverse impacts from the proposed Project on aesthetics are expected, therefore, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
2.0	**AGRICULTURE AND FOREST RESOURCES.** Would the project:				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	☐	☐	☐	☑
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104 (g))?	☐	☐	☐	☑
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑

2.1 Significance Criteria

Project-related impacts on agricultural resources will be considered significant if any of the following conditions are met:

The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.

The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.

The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural uses.

2.2 Environmental Setting and Impacts

2. a), b), c), and d) The proposed Project would occur within the confines of the existing Refinery. The project would be consistent with the heavy industrial zoning for the Refinery ([Q]M3-1). No agricultural or forest resources are present at or in the vicinity of the Refinery. Therefore, the proposed Project would not convert farmland to non-agricultural use or involve other changes in the existing environment that could convert farmland to non-agricultural use or conflict with agricultural land uses, or Williamson Act contracts. Additionally, the proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use. Finally, there is no conflict with existing zoning for agricultural or forest use nor would the proposed Project require rezoning of agricultural or forest zoned areas.

2.3 Mitigation Measures

No significant adverse impacts from the proposed Project on agricultural resources are expected, therefore, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
3.0	**AIR QUALITY AND GREENHOUSE GAS EMISSIONS.** Would the project:				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑	☐
b)	Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☐	☑	☐
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☑	☐
d)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☑	☐
f)	Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	☐	☐	☑	☐
g)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
h)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

3.1 Significance Criteria

Impacts will be evaluated and compared to the significance criteria in Table 2-1. If impacts equal or exceed any of the following criteria, they will be considered significant.

TABLE 2-1

Air Quality Significance Thresholds

Mass Daily Thresholds[a]		
Pollutant	**Construction[b]**	**Operation[c]**
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants, Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk $\geq$ 10 in 1 million Chronic and Acute Hazard Index $\geq$ 1.0 (project increment) Cancer Burden $\geq$ 0.5 excess cancer cases (in areas $\geq$ 1 in 1 million)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000MT/yr CO_2eq for industrial facilities	
Ambient Air Quality for Criteria Pollutants[d]		
NO_2 1-hour average annual average	In attainment; significant if project causes or contributes to an exceedance of any standard: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM10 24-hour annual average	10.4 $\mu g/m^3$ (construction)[e] and 2.5 $\mu g/m^3$ (operation) 1.0 $\mu g/m^3$	
PM2.5 24-hour average	10.4 $\mu g/m^3$ (construction)[e] and 2.5 $\mu g/m^3$ (operation)	
SO_2 1-hour average 24-hour average	0.255 ppm (state) and 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 $\mu g/m^3$ (state)	
CO 1-hour average 8-hour average	In attainment; significant if project causes or contributes to an exceedance of any standard: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day average Rolling 3-month average Quarterly average	1.5 $\mu g/m^3$ (state) 0.15$\mu g/m^3$ (federal) 1.5$\mu g/m^3$ (federal)	

a) Source: SCAQMD Air Quality Significance Thresholds, www.aqmd.gov/ceqa/handbook/signthres.pdf.
b) Construction thresholds apply to both the SCAB and Coachella Valley (Salton Sea and Mojave Desert Air Basin)
c) For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.
d) Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
e) Ambient air quality threshold based on SCAQMD Rule 403.

KEY: ppm = parts per million; $\mu g/m^3$ = microgram per cubic meter; lbs/day = pounds per day; MT/yr CO2eq = metric tons per year of CO_2 equivalents, $\geq$ greater than or equal to, > = greater than

3.2 Environmental Setting and Impacts

3. a) The 2012 Air Quality Management Plan (AQMP) demonstrates that the applicable ambient air quality standards can be achieved within the timeframes required under federal law. Growth projections from local general plans adopted by cities in the district are provided to the Southern California Association of Governments (SCAG), which develops regional growth forecasts, which are then used to develop future air quality forecasts for the AQMP. Development consistent with the growth projections in the City of Los Angeles General Plan is considered to be consistent with the AQMP. Since the proposed Project would be consistent with the City of Los Angeles General Plan, it would be consistent with the AQMP. The proposed Project would be consistent with the Los Angeles General Plan for the following reasons:

- As indicated in the Population and Housing and Transportation/Traffic sections, the estimated 44 construction workers are expected to be drawn from the existing labor pool in the southern California area, so would not result in changes to future growth forecasts.

- As indicated in the Population and Housing and Transportation/Traffic sections, the proposed Project is not expected to require additional Refinery employees, so would not generate additional worker-related traffic during operation requiring traffic improvements already envisioned in local or region transportation plans.

- Because the proposed Project would not require additional workers during operations, it would not increase the demand for additional housing, so would not require changes to local use designations.

Therefore, because the proposed Project would not exceed growth projections in the City of Los Angeles General Plan requiring a General Plan amendment, it is considered to be consistent with the Los Angeles General Plan.

Additionally, this project must comply with all applicable SCAQMD requirements for new and modified stationary sources. For example, new and modified stationary emission sources associated with the proposed Project are required to comply with the SCAQMD's Regulation XIII - New Source Review, requires installing of Best Available Control Technology (BACT) and providing emission reduction credit offsets for any emission increases greater than one pound per day. The proposed Project must also comply with prohibitory rules, such as SCAQMD Rule 403 - Fugitive Dust and Rule 1173 - Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants. By meeting these requirements, the proposed Project would be consistent with the emission reduction goals and objectives of the AQMP.

3. b) an f) Emissions Estimates

Construction Emission Impacts

Regional Impacts

Construction activities are expected to occur in Area 8 of the Refinery (see Figure 1-3) focused in an approximately 0.5-acre area. Construction emissions were calculated for peak day construction activities in each month construction is expected to occur. Daily construction emissions were calculated for the peak construction day activities and are presented in Table 2-2. Peak day emissions are the sum of the highest daily emissions for each criteria pollutant from employee vehicles, fugitive dust sources, construction equipment, and transport activities for the construction period. Total peak construction emissions for VOC, CO, NOx, and SOx occur in Month 8 when the Cogen Unit would be installed, while peak construction emissions for PM10, and PM2.5 occur in Month 1, when foundation work and earth moving would occur. Detailed construction emissions calculations are provided in Appendix B.

TABLE 2-2

Ultramar Wilmington Refinery Peak Construction Emissions (lbs/day)

ACTIVITY	VOC	CO	NOx	SOx	PM10	PM2.5[(b)]
Peak Construction Emissions[(a)]						
Construction Equipment	3.7	28.7	44.3	0.07	2.4	2.3
Vehicle Emissions	1.0	8.9	2.3	0.02	0.95	0.3
Fugitive Dust From Construction[(c)]	--	--	--	--	34.6	20.1
Fugitive Road Dust[(c)]	--	--	--	--	5.2	1.1
Architectural Coating	1.7	--	--	--	--	--
Total Emissions[(4)]	**6.4**	**37.6**	**46.7**	**0.09**	**43.2**	**23.8**
SCAQMD Threshold Level	75	550	100	150	150	55
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

(a) Peak emissions for VOC, CO, NOx, and SOx predicted to occur during Month 8. Peak emissions for PM10, and PM2.5 predicted to occur during Month 1

(b) PM2.5 is determined using SCAQMD, 2006. Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 CEQA Significance Thresholds, SCAQMD, October 2006, https://www.aqmd.gov/ceqa/handbook/PM2_5/pm2_5ratio.xls

(c) Assumes application of water three times per day.

(d) The emissions in the table may differ slightly from those in Appendix B due to rounding.

Construction Equipment

Construction emissions are expected from the following equipment and processes:

- Onsite Construction Equipment (dump trucks, backhoes, graders, etc.);
- Onsite and Offsite Vehicle Emissions, including Delivery Trucks and Worker Vehicles;

- Onsite Fugitive Dust Associated with Site Construction Activities; and,
- Onsite and Offsite Fugitive Dust Associated with Travel on Unpaved and Paved Roads.

On-site construction equipment would be one source of combustion emissions. Construction equipment may include backhoes, compressors, compactors, cranes, dozers, excavators, front-end loaders, generators, graders, pile drivers, roll-off trucks, tractors, trenchers, water truck, and welding machines. The construction schedule for the proposed Project is planned for a single shift where equipment is assumed to be operating ten hours per day and within the limits imposed by the City of Los Angeles Noise Ordinance (see Section 12 – Noise for more information). Construction workers are expected to be at the site for longer than ten hours per day, including time for lunch and breaks, organization meetings, and so forth, but construction equipment would not be expected to operate the entire time. Emission factors for construction equipment were taken from the CARB OFF-ROAD 2011 Emissions Inventory model and tables available on the SCAQMD webpage (http://aqmd.gov/ceqa/hdbk.html). Estimated emissions from construction equipment used for construction are included in Table 2-2.

Vehicle Emissions

Vehicle emissions include construction worker commute vehicles, pick-up trucks, flatbed trucks dump trucks, water trucks, semi tractors, concrete trucks, and delivery trucks. Primary emissions generated would include combustion emissions from engines during idling and while operating. Emissions are based on the estimated number of trips per day and the round trip travel distances.

Construction emissions include emissions from construction worker vehicles traveling to and from the work site. The peak manpower needed during the construction period is expected to be 44 workers during Months 6 and 7. However, the peak PM10 and PM2.5 emissions, which is expected to occur during Month 1, estimated using the assumption that only 25 workers would be traveling to the site each weekday, while peak day emissions for VOC, CO, NOx, and SOx , which were calculated for Month 8, included the assumption that 42 workers would be traveling to the site each weekday, which are the expected manpower needs during those months (see Appendix B). Each worker commute vehicle is assumed to travel 14.7 miles (CalEEMod) to and from work each day, making two one-way trips per day. Emissions from employee vehicles are presented in Table 2-2. Emissions from employee vehicles were calculated using the CARB EMFAC2011 Emission Inventory model.

Cars and pickup trucks used for short trips within and near the Refinery are assumed to travel five miles per trip.

Medium-duty and heavy-duty diesel trucks used during construction include dump trucks, flatbed trucks, water trucks, and delivery trucks. Heavy heavy-duty semi-trucks and concrete trucks were also included in the project construction analysis. Primary emissions generated would include exhaust emissions from diesel engines while operating. Emissions from trucks (both medium-duty and heavy-duty) are calculated using the CARB EMFAC2011 Emission Inventory model. Estimated emissions for all trucks are included in Table 2-2.

Fugitive Dust Associated with Site Construction Activities

Activities that may generate fugitive dust at the site include grading, trenching, wind erosion, and truck filling/dumping, which occur primarily when constructing necessary foundations. During construction activities, water used as a dust suppressant would be applied in the construction area during grading, trenching, and earth-moving activities to control or reduce fugitive dust emissions pursuant to SCAQMD Rule 403. It is assumed that one water application per day reduces PM emissions by 34 percent, two applications per day reduce emissions by 50 percent, and three applications per day reduce emissions by 61 percent (SCAQMD, 2011). Fugitive dust suppression, often using water, is a standard operating practice and is one method of complying with SCAQMD Rule 403. Estimated peak controlled PM10 and PM2.5 emissions during peak construction activities for fugitive dust sources are 34.62 pounds per day and 20.08 pounds per day, respectively, which assumes watering three times per day (see Table 2-2). The detailed emission calculations are provided in Appendix B.

Fugitive Dust Associated with Travel on Paved and Unpaved Roads

Vehicles and trucks traveling on paved and unpaved roads, including public roads and roads on-site, are also a source of fugitive emissions during the construction period. Fugitive road dust emissions were calculated for vehicles traveling to the Refinery, on-site cars, light-duty trucks, and buses. The analysis included the assumption that fugitive emissions from delivery trucks would travel on paved roads (both public and on-site) and water trucks and off-road construction equipment would travel on unpaved roads. Fugitive dust emissions caused by travel on paved roads were calculated using the U.S. EPA's, AP-42, Section 13.2.1 emission factor for travel on paved roads. Fugitive dust emissions caused by travel on unpaved roads were calculated using the U.S. EPA's, AP-42, Section 13.2.2 emission factor for travel on unpaved roads. CARB's Methodology 7.9 was used to determine the appropriate silt loading for calculating fugitive dust emissions from paved roads. The estimated fugitive PM10 and PM2.5 emissions from vehicles traveling on paved roads during peak construction activities (Month 1) are 0.95 pound per day and 0.29 pound per day, respectively (see Table 2-2 and Appendix B). The estimated fugitive PM10 and PM2.5 emissions during peak construction activities (Month 1) from vehicles traveling on unpaved roads are 5.20 pounds per day and 1.09 pounds per day, respectively (see Table 2-2 and Appendix B).

Architectural Coatings

The proposed Project would include painting some equipment with industrial maintenance coatings. The units are expected to be delivered pre-painted, however, an estimated two gallons of industrial maintenance coating use on the peak day is expected to be necessary for touch up to the units once they are installed. The proposed Project would use SCAQMD Rule 1113 compliant coatings, which limits the VOC emissions of the industrial maintenance coating to 100 grams per liter (0.83 pound per gallon). The estimated VOC emissions from industrial maintenance coatings during peak construction activities (Month 8) are 1.66 pounds per day (see Table 2-2 and Appendix B).

Miscellaneous Emissions

In addition to the construction-related emissions already identified for the proposed Project, the proposed Project could generate emissions of VOC if contaminated soil is found and soil remediation activities are necessary. VOC emission estimates from soil contamination would be speculative at this time, however because the presence of contamination or levels of contamination specifically on the proposed Project site are currently unknown. VOC contaminated soil is defined as soil which registers 50 parts per million or greater per the requirements of SCAQMD Rule 1166 – Volatile Organic Compound Emissions from Decontamination of Soil. If VOC contamination is found, soil remediation must occur under an SCAQMD-approved Rule 1166 Plan to assure the control of fugitive VOC emissions, which generally includes covering soil piles with heavy plastic sheeting and watering activities to assure the soil remains moist.

Construction Emission Summary

Construction activities associated with modifications to the Refinery would result in emissions of CO, VOC, NOx, SOx, PM10, and PM2.5. Construction emissions for the proposed Project are summarized in Table 2-2, together with the SCAQMD's daily construction significance threshold levels. The construction phase of the Refinery's proposed Project is expected to be well below the applicable significance thresholds for all criteria pollutants both for the proposed construction schedule. Therefore, unmitigated air quality impacts associated with construction activities are concluded to be less than significant.

Localized Air Quality Impacts During Construction

The SCAQMD has developed a Localized Significance Threshold (LST) Methodology to evaluate potential localized air quality impacts of criteria pollutants from construction and operational activities on sensitive receptors in the vicinity of a proposed project (SCAQMD, 2009). Therefore, the SCAQMD has required an LST analysis for CO, NO_2, PM10, and PM2.5 construction emissions associated with the proposed Project. Potential air quality impacts from other criteria pollutants are regional in nature and, therefore, are not required to be included as part of the localized air quality analysis. Pursuant to the SCAQMD's LST methodology, only onsite construction emissions sources were included in the LST analysis. The closest sensitive receptor is located in the residential area, which is about one-half mile northwest of the Refinery in Wilmington.

The SCAQMD LST Methodology includes lookup tables that may be used to determine significance for projects with an area of five acres or less. Because the area of the proposed Project is approximately 0.5 acre, the lookup tables used to determine significance are for a one-acre area. If the calculated emissions for the construction activity are below the emission level found in the LST lookup tables, localized air quality impacts from the construction activity are not considered significant. The LST lookup tables were developed using conservative assumptions, including the worst meteorological conditions in the district. If localized emissions exceed the values in the LST lookup tables, dispersion modeling, which is more precise, may be performed. The CO, NOx, PM10, and PM2.5 emissions from the construction activities for the

proposed Project are well below the LST emission levels found in the LST lookup tables and, therefore, are expected to be less than significant (see Table 2-3).

TABLE 2-3

Localized Significance Threshold Screening Evaluation for Construction Emissions (lbs/day)

Criteria Pollutant	CO	NOx	PM10	PM2.5
Peak Construction Emissions	37.58	45.50	43.16	23.80
LST Value[(a)]	7,558	142	158	93
Significant?	No	No	No	No

(a) Appendix C of the SCAQMD Final LST Methodology (Oct. 2009). SRA #4 with the nearest receptor located at or beyond 500 meters.

The Federal one-hour NO_2 ambient air quality standard was not analyzed because the federal standard is based on a three-year monitoring period. The proposed Project construction period would be less than three years, lasting approximately one year. Therefore, the state one-hour NO_2 ambient air quality standard is the appropriate standard for evaluating impacts from this proposed Project. The SCAQMD LST tables are based on the state one-hour NO_2 ambient air quality standard.

The LST analysis indicates that construction emissions of NO_2, CO, PM10, or PM2.5 from construction activities associated with the proposed Project are not expected to exceed the LST significance thresholds in Table 2-1. Therefore, the proposed Project would not be expected to create any significant localized air quality impacts during the construction period.

Operational Emission Impacts

Under the existing operations boilers supply steam to refinery operations and electricity is provided by offsite sources. The proposed Project includes adding two combustion sources at the new Cogen Unit to be constructed at the Refinery, the gas turbine and the duct burner. Under the proposed Project steam and electricity would be provided by the Cogen Unit. However, the addition of the new combustion sources would not substantially increase the peak daily emissions from the combination of boilers and proposed Cogen Unit in that the boilers (as discussed below), which have operated at various capacities up to maximum duties in the past and would continue to operate at current levels in the event the Cogen Unit is down for maintenance or unexpected shutdown. As such, when the Cogen Unit is not operating, peak daily emissions from the boilers would not change.

Under the proposed Project, the boilers are operating in a state that allows them to provide backup to the Cogen Unit and supplement steam supply to the Refinery when demand is high. That is, if the Cogen Unit needs to be shut down (e.g., for maintenance or breakdown event), then the boilers would be needed to generate steam to prevent upset of the refining processes. In order for the boilers to respond in a timely manner to prevent upset of the refining process, the boilers would have to operate in a "hot standby mode. In a "hot standby mode" the boilers are

operating and ready to increase production should the Cogen Unit steam production fluctuate. Additionally, during peak operating periods, the boilers would be available to provide additional steam to meet the demands of Refinery operations.

The analysis presented herein demonstrates that for various operating scenarios of the Cogen Unit and boilers, the addition of the Cogen Unit would not substantially increase peak daily emissions. The operating scenarios analyzed include the Cogen Unit operating at maximum capacity with boilers 86-B-9001 and 86-B-9002 operating at various reduced capacities. The operating scenarios are presented in Table 2-4.

TABLE 2-4

Proposed Project Operating Scenarios Analyzed

Scenario [a]	Operating Status		
	Cogen Unit	Percentage of Maximum Capacity	
		Boiler 86-B-9001	Boiler 86-B-9002
1 – B-9002 at Minimum, B-9001 Operating	Full Capacity	38	31
2 – B-9002 Off, B-9001 Operating	Full Capacity	75	0
3 – B-9001 at Minimum, B-9002 Operating	Full Capacity	30	36
4 – B-9001 Off, B-9002 Operating	Full Capacity	0	54

[a] Under all scenarios, boiler B-9000 would be shut down during operation of the Cogen Unit.

[b] All scenarios are based on the Cogen Unit running at full capacity and one or both of existing boilers operating in reduced firing mode capable of responding to the varying steam demand of the Refinery.

Peak scenarios were used to estimate the worst-case emissions from the proposed Project. The scenarios all assume that the Cogen Unit is operating at full capacity and that only one or both boilers are running in a reduced firing mode capable of responding to the varying steam demands of the Refinery. Therefore, the boilers have been evaluated at operating levels that would meet the expected maximum steam demand of the Refinery. As indicated in Table 2-4, scenario 1 assumes that the Cogen Unit operates at full capacity and boiler 86-B-9002 is operating up to a minimal level (31 percent load) and boiler 86-B-9001 is operating up to a level (38 percent load), where both boilers would generate supplemental steam as needed. Scenario 2 assumes that the Cogen Unit operates at full capacity, boiler 86-B-9002 is off and boiler 86-B-9001 would be ready to generate supplemental steam as needed (75 percent load). Scenario 3 assumes that the Cogen Unit operates at full capacity and boiler 86-B-9001 is operating up to a minimal level (30 percent load) and boiler 86-B-9002 is operating up to a level (36 percent load) where both boilers would generate supplemental steam as needed. Scenario 4 assumes that the Cogen Unit operates at full capacity, boiler 86-B-9001 is off and 86-B-9002 (54 percent load) would generate supplemental steam as needed. As a permit condition, when the boilers are used to supply steam instead of supplement steam to the Refinery the Cogen Unit will not operate. When the boilers are supplying steam to the Refinery, the worst-case emissions from the project would be the same as the existing setting (since the Cogen Unit would not be operating). The operating conditions of the boilers and Cogen Unit combined would be restricted through permit

conditions to limit emissions in any combination of equipment such that the NOx emissions from the proposed Project would not exceed the current permitted NOx emission limits on the existing boilers.

Combustion Sources

The proposed Cogen Unit would include a natural gas-fired turbine electric generator, a heat recovery steam generator equipped with a refinery fuel gas-fired duct burner for supplemental steam production, an SCR unit, and catalyst for emissions control of NOx and CO. Combustion source emissions are calculated based on fuel feed rate and standard emission factors or emission factor guarantees provided by the equipment manufacturer. Operation of the proposed Project is expected to require an additional 16 ammonia delivery truck trips on an annual basis. However, the peak daily number of truck trips is not expected to increase because only one ammonia truck is needed to fill the ammonia tank and the tank would only need to be filled approximately once every three weeks. No new employees are expected as part of the proposed Project. Therefore, there would be no increase in the number of worker commute trips.

Fugitive Emissions

Fugitive emissions are emissions released directly into the atmosphere that do not pass through a stack, vent, etc., and typically do not require SCAQMD permits. Although fugitive VOC emissions from flanges, valves, etc., generated by the proposed Project would not require SCAQMD permits, they would be monitored for compliance with SCAQMD Rule 1173. The proposed Project would also increase fugitive VOC emission from fuel piping to the new units.

Operational Emissions Summary

To determine the potential air quality impact of the proposed Project, it is necessary to establish baseline emissions from operating boilers 86-B-9000, 86-B-9001, and 86-B-9002. To derive baseline emissions, emissions from the boilers were combined to identify the maximum documented daily emissions from operating boilers 86-B-9000, 86-B-9001, and 86-B-9002. These were actual operating emissions, which are less than the maximum permitted emission limits. Because boiler operations fluctuate as steam demands within the Refinery vary, calendar year 2011 operations were analyzed to identify the top 98^{th} percentile (or the top two percent of operating conditions) to represent the maximum emissions achieved during boiler operations. Eight days of operations comprise the top two percent of operating days. The emissions data for each pollutant for those eight days were averaged to establish average peak daily baseline boiler emissions. The methodology and calculations for deriving baseline boiler emissions can be found in Appendix B.

Once the proposed Project is operational, daily operational emissions would include only stationary combustion and fugitive emissions sources, as no changes in daily mobile source emissions are expected from the proposed Project. A maximum of 16 additional ammonia delivery trucks are expected to visit the Refinery each year, but as explained above, the maximum number of delivery trucks visiting the Refinery on a single day would not change. The primary source of emissions from the proposed Project would be from the new Cogen Unit.

Boilers 86-B-9000, 86-B-9001, and 86-B-9002 would each receive new enforceable SCAQMD permit limits and conditions. During operation of the Cogen Unit, boilers 86-B-9001 and 86-B-9002 would be required to operate at reduced loads and boiler 86-B-9000 would be prohibited from operating. The Cogen Unit combined with the existing boilers would be subject to permit conditions that would restrict operational emissions to levels that would not exceed the current permitted NOx emission limits on the existing boilers, while still allowing the boilers to operate in a reduced capacity and produce supplemental steam as Refinery demand fluctuates. Allowing the boilers to continue to operate at reduced capacity would allow the Refinery to remain operational should the Cogen Unit lose steam production from the heat recovery steam generator, providing a backup source for steam production. No physical modifications to the boilers would occur as part of the proposed Project.

The worst-case operational emission impacts from the proposed Project would occur under Scenario 2 (see Table 4-2), where the Cogen Unit operates at full capacity, boiler 86-B-9002 is off and boiler 86-B-9001 would generate supplemental steam as needed (75 percent load). Table 2-5 presents a comparison this worst-case scenario (Scenario 2) to the baseline boiler emissions.

TABLE 2-5

Ultramar Wilmington Refinery
Comparison of Proposed Project Operational Emissions[(a)] to Baseline Emissions
(lbs/day)

Sources	VOC	CO	NOx	SOx	PM10	PM2.5[(b)]
Baseline Boiler Emissions[(c)]	38.0	118.0	106.5	72.1	62.2	62.2
Proposed Peak Scenario Emissions (Scenario 2 from Table 2-4)[(d)]	63.6	319.8	205.3	91.6	158.0	82.8
Emissions Change[(e)]	25.6	201.8	98.8	19.5	95.8	20.6
Fugitive VOC Emissions	7.8	0.0	0.0	0.0	0.0	0.0
Subtotal Project Emissions	33.4	201.8	98.8	19.5	95.8	20.6
RECLAIM Credits[(f)]	**--**	**--**	**-98.8**	**-19.5**	**--**	**--**
Total Project Emissions	**33.4**	**201.8**	**0**	**0**	**95.8**	**20.6**
Significance Thresholds	**55**	**550**	**55**	**150**	**150**	**55**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

(a) Maximum emissions based on various boiler operating scenarios while the Cogen Unit is operating.
(b) For existing boilers PM2.5 is assumed to be PM10. For the Cogen Unit, PM2.5 is a fraction of PM10 due to ammonium nitrate formation, which is considered as PM10.
(c) Maximum existing boiler emissions are the average of the actual emissions for each boiler for the operating days, which were above the 98th percentile of the combined boiler emissions during 2011.
(d) Emission estimates for each of the four operating scenarios in Table 2-4 are included in Appendix B. Based on these estimates, Scenario 2 is expected to generate the greatest emissions.
(e) Negative numbers denote emission reductions.
(f) RECLAIM credits are required to be surrendered annually based on actual emissions to comply with SCAQMD Regulation XX.

Equipment that is not part of the proposed Project, but is potentially affected by the proposed Project (upstream or downstream) was evaluated to determine if the proposed Project would result in an emissions increase, even though the affected equipment would be operating within existing permit limits and no permit modification would be required. Due to the nature of Refinery operations, all equipment fluctuates in activity levels over time. However, no other units, beyond those evaluated for the proposed Project, were identified that would result in a discernible increase in emissions due to the proposed Project.

The Refinery is subject to SCAQMD Regulation XX – RECLAIM for NOx and SOx emissions. Compliance with Regulation XX requires the facility to annually surrender RECLAIM trading credits (RTCs) equal to the actual emissions of NOx and SOx from new or modified projects. Therefore, no increase in NOx or SOx is expected to occur as a result of the proposed Project. Emissions of VOC, CO, PM10, and PM2.5 would increase, but would be less than the SCAQMD's daily operational significance thresholds. Unmitigated peak daily operational emissions are shown in Table 2-5, together with the SCAQMD's daily operational significance thresholds. See Appendix B for operational emissions calculations. The operation of the proposed Project is not expected to exceed any of the SCAQMD's applicable operational significance thresholds. Therefore, potential air quality impacts associated with operational emissions from the proposed Project are concluded to be less than significant.

Localized Air Quality Impacts During Operation

Dispersion modeling was used to calculate ambient concentrations of criteria pollutants from the proposed Project sources that emit CO, NOx, SOx, PM10, and PM2.5 emissions to determine the potential localized air quality impacts. The U.S. EPA AERMOD air dispersion model was used to predict the ambient concentrations for CO, NOx, SOx, and PM10 (VOC emissions are not required to be modeled under SCAQMD Rule 1303, Appendix A because they do not normally contribute to localized air quality impacts). Since PM2.5 emissions are a large fraction of PM10 emissions from stationary combustion sources and the significance thresholds are the same for PM10 and PM2.5, PM2.5 emissions were not specifically modeled, but the modeling results for PM10 would also serve as the modeling results for PM2.5. The Cogen Unit would use natural gas and refinery fuel gas; therefore, as a new stationary combustion source, localized impact modeling for SOx emissions is required.

CO, NOx, SOx, and PM10 emissions were modeled using the AERMOD dispersion model according to the pollutant averaging time for each pollutant's ambient air quality standard, both state and national. Averaging times modeled include one-hour, eight-hours, and 24-hours, and annual. The emission rates, locations, and ground level concentrations are included in Appendix B. The calculated localized air quality impacts of the modeled criteria pollutants are presented in Table 2-6.

Based on the AERMOD air dispersion model (see Table 2-6), ground level concentrations of the criteria pollutants required to be modeled would be below the applicable significance thresholds. Therefore, no significant adverse localized air quality impacts are anticipated to occur during operation of the proposed Project.

TABLE 2-6

Results of Criteria Pollutants Air Quality Modeling

Criteria Pollutant	Averaging Time	Calculated Concentrations for Project[(a)]	Agency Standard	Significance Threshold[(b)]	Significant?
CO	1-Hour	3,467.15 $\mu g/m^3$	State	23,000 $\mu g/m^3$	No
CO	1-Hour	3,467.15 $\mu g/m^3$	Federal	40,000 $\mu g/m^3$	No
CO	8-Hour	2,992.52 $\mu g/m^3$	Both	10,000 $\mu g/m^3$	No
NOx	1-Hour	273.51 $\mu g/m^3$	State	339 $\mu g/m^3$	No
NOx	1-Hour	175.33 $\mu g/m^3$	Federal	188 $\mu g/m^3$	No
NOx	Annual	40.30 $\mu g/m^3$	State	57 $\mu g/m^3$	No
NOx	Annual	40.30 $\mu g/m^3$	Federal	100 $\mu g/m^3$	No
SOx	1-Hour	237.72 $\mu g/m^3$	State	655 $\mu g/m^3$	No
SOx	1-Hour	56.31 $\mu g/m^3$	Federal	655 $\mu g/m^3$	No
SOx	24-Hour	31.87 $\mu g/m^3$	Both	105 $\mu g/m^3$	No
SOx	Annual	5.86 $\mu g/m^3$	Federal	80 $\mu g/m^3$	No
PM10	24-Hour	0.71 $\mu g/m^3$	Both	2.5 $\mu g/m^3$	No
PM10	Annual	0.16 $\mu g/m^3$	Both	1 $\mu g/m^3$	No
PM2.5	24-Hour	0.71 $\mu g/m^3$	Both	2.5 $\mu g/m^3$	No
PM2.5	Annual	0.16 $\mu g/m^3$	Both	1 $\mu g/m^3$	No

(a) Calculated concentrations are the project impact combined with the background ambient concentrations for NOx. See Appendix B for detailed calculations.
(b) Most stringent ambient air quality standard or significant change in air quality thresholds.

CO Hot Spots

The potential for high concentrations of CO emissions associated with truck/vehicle traffic was considered and evaluated per the requirements of the SCAQMD CEQA Air Quality Handbook (SCAQMD, 1993). The Handbook indicates that any project that could negatively impact levels of service at local intersections may create a CO hot spot and should be evaluated. No changes in level of service are expected from the proposed Project during construction or operation (see discussion under environmental topic "17.0 Transportation/Traffic). Therefore, no significant adverse impacts to ambient air quality due to the traffic impact at the intersection in the vicinity of the proposed Project are expected, so no mitigation is required.

3. c) Cumulative Impacts

Construction air quality impacts from the proposed Project would contribute to potentially significant adverse cumulative construction air quality impacts if project-specific construction emissions are considered to be cumulatively considerable as defined by CEQA Guidelines

§15064(h)(1). Impacts are considered to be cumulatively considerable if they exceed the project-specific air quality significance thresholds. Construction emissions for the proposed Project are expected to be less than the construction significance thresholds and, therefore, are not considered to be cumulatively considerable and cumulatively significant.

Other past, present, and reasonably foreseeable future projects may contribute to significant adverse cumulative air quality impacts if their combined operational emissions would exceed the SCAQMD's project-specific daily emission thresholds for operations (see Table 2-1). As shown in Table 2-5, the proposed Project would result in a less than significant increase in daily operational emissions during peak operations because of permit conditions on the proposed new Cogen Unit combined with the new permit conditions for existing boilers that prohibit operations under any scenario from exceeding current permitted NOx emission limits. Therefore, project-specific air quality impacts associated with operational emissions from the proposed Project are not considered to be cumulatively considerable and, therefore, do not contribute to significant adverse cumulative air quality impacts.

Therefore, the construction and operational emissions from the proposed Project are not considered to contribute to significant adverse cumulative construction or operational impacts. This conclusion is consistent with CEQA Guidelines §15064(h)(4), which states, "The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable."

3. d) Toxic Air Contaminants

A health risk assessment (HRA) was performed to determine if TAC emissions generated by the proposed Project would exceed the SCAQMD thresholds of significance for cancer risk or non-cancer health risks. The following subsections outline health risks from exposure to TAC emissions by onsite and offsite receptors associated with the proposed new Cogen Unit and the health risks associated with existing operations of the boilers B-9001 and B-9002. The HRA, summarized herein for the proposed Project, includes an evaluation of the emission increases only from the new Cogen Unit and associated fugitive emissions. For this analysis, the total risk of the proposed Project is based on the Cogen Unit HRA results combined with the existing boilers' health risks as calculated in the 2010 AB2588 facility-wide HRA. The actual risk for the proposed Project is expected to be less than the combined risk value calculated for the Cogen Unit and the boilers because, during peak Cogen Unit operations, permit conditions would not allow proposed Project emissions to exceed current permitted NOx emission limits. In addition, the Cogen Unit generates lower health risks per megawatt than the boilers. Therefore, the combined risk provides a conservative analysis for health risk impacts from the proposed Project.

HRA Methodology

The HRA for the Cogen Unit has been prepared in accordance with the August 2003 Office of Environmental Health Hazard Assessment (OEHHA) Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments (OEHHA, 2003) and the October 2003 Air Resources Board Recommended Interim Risk Management Policy for Inhalation-based

Residential Cancer Risk memo (CARB/OEHHA, 2003). The HRA includes a comprehensive analysis of the dispersion of specified AB2588-listed compounds into the environment, the potential for human exposure, and a quantitative assessment of individual health risks associated with the predicted levels of exposure. CARB Hotspots Analysis Reporting Program (HARP) model is the most appropriate model for determining the air quality impacts from the proposed Project (CARB, 2005). The HARP model is well suited for refinery modeling since it can accommodate multiple sources and receptors. The HARP model combines the U.S. EPA Industrial Source Complex dispersion model with a risk calculation model based on the Air Toxics Hot Spots Program Risk Assessment Guidelines (OEHHA, 2003). The model default values were modified to conform to the SCAQMD Supplemental Guidelines for Preparing Risk Assessment for AB2588 (SCAQMD, 2011a).

Hazard Identification

Operation of the Cogen generates various toxic air contaminants. Some of these chemical compounds are potentially carcinogenic, or potentially toxic or hazardous depending on concentration or duration of exposure. Numerous federal, state, and local regulatory agencies have developed lists of TACs. The list of potentially-emitted substances considered in the preparation of an HRA is identified in Appendix A-I of the CARB AB2588 requirements and by OEHHA. The AB2588 TACs emitted from the proposed Project are shown in Appendix C of this Negative Declaration. Some of these pollutants were consolidated into one category, e.g., polycyclic aromatic hydrocarbons (PAHs). Health effects data are not available for all compounds. However, a total of 53 TACs were included in the air dispersion modeling (see Appendix C). For carcinogens, cancer slope factors were used to compute cancer risk through inhalation. If the carcinogen is a multi-pathway pollutant, a potency slope was used for estimation of risk from non-inhalation pathways. For non-cancer health effects, reference exposure levels (REL) and acceptable oral doses (for multi-pathway pollutants) were used. The non-carcinogenic hazard indices were computed for chronic and acute exposures with their respective toxicological endpoints shown.

Emission Estimations and Sources

The emissions estimates of TACs for combustion are calculated using emission factors from the 2010 Annual Emissions Report for the heat recovery steam generator and the Supplemental Instructions for Reporting Quadrennial Air Toxics Emissions for natural gas turbines. Fugitive emissions are derived using Method 2 of the *SCAQMD Guide for Fugitive Emissions Calculations* (SCAQMD, 2003). The calculated emissions are presented in Appendix C.

Cancer Risk Analysis

The maximum cancer risk from the proposed Cogen Unit for the maximum exposed individual resident (MEIR) is located 1.5 miles east of the Refinery boundary. The incremental cancer risk is 3.86×10^{-7} or 0.4 per million at the MEIR. Polycyclic aromatic hydrocarbons (PAHs) contribute approximately 72.5 percent of the calculated cancer risk at the MEIR. The oral pathways account for 71.2 percent of the cancer risk. Detailed cancer risk contributions by pathway and pollutants are presented in Appendix C.

The maximum exposed incremental worker (MEIW) offsite cancer risk for occupational exposure is located approximately 1,200 feet east of the Refinery boundary. The incremental cancer risk is 1.11×10^{-7} or 0.1 per million at the MEIW. PAHs contribute approximately 70 percent of the calculated cancer risk at the MEIW. The oral pathways account for 69.2 percent of the cancer risk. Detailed cancer risk contributions by pathway and pollutants are presented in Appendix C.

Non-Cancer Risk Analysis

The maximum chronic hazard index (MCHI) total for the proposed Cogen Unit for the respiratory system is 0.0029. The MCHI is located approximately 1,100 feet east of the Refinery boundary. Formaldehyde contributes approximately 42.8 percent of the calculated MCHI. Detailed contribution by pollutant to the chronic hazard index for the maximum receptor location is presented in Appendix C.

The maximum acute hazard index (MAHI) total for the eyes is 0.0157. The MAHI is located approximately 450 feet west of the Refinery boundary. Ammonia contributes approximately 61.5 percent of the calculated MAHI. Detailed contribution by pollutant to the acute hazard index for the maximum receptor location is presented in Appendix C.

Existing Health Risk

As described in Section 1.6.2, during the operational phase, the new Cogen Unit would replace most of the steam generated from the existing boilers with the boilers remaining on-line with a reduced steam production, therefore, the health risk associated with the boilers while the Cogen Unit is operating would be reduced. The existing boilers were previously analyzed in the 2010 AB2588 HRA for the Refinery. The MEIR for boilers 86-B-9000, 86-B-9001, and 86-B-9002 are 1.99×10^{-8}, 5.41×10^{-8}, and 1.10×10^{-7}, respectively. The MEIW for boilers 86-B-9000, 86-B-9001, and 86-B-9002 are 3.31×10^{-8}, 1.62×10^{-8}, and 1.65×10^{-7}, respectively. The chronic and acute risk values were not presented by source in the 2010 AB2588 HRA, however, the refinery-wide risk for the MCHI and MAHI are 0.133 and 0.706, respectively. However, in March 2012, the RELs for nickel were revised. Therefore, the chronic and acute modeling results from the 2010 HRA were updated to reflect the new nickel RELs. Only the chronic risk value is affected by the revisions making the facility-wide MCHI 0.158. The MCHIs for boilers 86-B-9000, 86-B-9001, and 86-B-9002 are 0.0027, 0.0016, and 0.0167, respectively, for a total MCHI from all three boilers of 0.021. The MAHIs for boilers 86-B-9000, 86-B-9001, and 86-B-9002 are 1.76×10^{-4}, 1.67×10^{-3}, and 1.48×10^{-3}, respectively, for a total MAHI from all three boilers of 0.0033. The boiler health risks would be reduced in direct relation to the reduced operations when the Cogen Unit is operating (expected to be between 25 and 69 percent depending on the operating scenario). Under most operating conditions, the health risks associated with boiler 86-B-9000 would be eliminated as a result of implementing the proposed Project.

Combined Health Risks

The combined maximum cancer and non-cancer health risks from the Cogen Unit and boilers 86-B-9000, 86-B-9001, and 86-B-9002 are shown in Table 2-7. The sensitive receptor location would remain the same as the current sensitive receptor location, which is located 1.5 miles east of the Refinery boundary. As indicated in Table 2-7, none of the cancer and non-cancer health risk categories analyzed for the proposed Project would exceed the applicable significance threshold. Therefore, cancer and non-cancer health risks from the proposed project are concluded to be less than significant.

TABLE 2-7

Combined Health Risks

Equipment	MEIR	MEIW	MCHI	MAHI
Cogen Unit	0.386×10^{-6}	0.111×10^{-6}	0.0029	0.0157
Boiler 86-B-9000	0.019×10^{-6}	0.033×10^{-6}	0.0027	1.76×10^{-4}
Boiler 86-B-9001	0.054×10^{-6}	0.016×10^{-6}	0.0016	1.67×10^{-3}
Boiler 86-B-9002	0.110×10^{-6}	0.165×10^{-6}	0.0167	1.48×10^{-3}
Total	0.57×10^{-6}	0.33×10^{-6}	0.024	0.019
Significance Threshold	10×10^{-6}	10×10^{-6}	1.0	1.0
Significant?	No	No	No	No

The combined health risk values assume that the boilers and the Cogen Unit would be operating at full capacity concurrently, which is not the planned mode of operation. During operation of the proposed Project, the boilers would operate at reduced capacities that would vary depending on the operating scenario, with the Cogen Unit typically operating at full capacity. The health risks expected from the various operating scenarios would be less than the combined maximum health risks shown in Table 2-7. Therefore, the combined HRA results in Table 2-7 represent a conservative analysis of the proposed Project's cancer and non-cancer health risks.

Summary of Health Impacts

The health impacts related to air quality impacts have been evaluated in several ways. First, the short-term air quality impacts related to construction emissions were evaluated by comparing the peak day construction emissions to the SCAQMD mass daily significance thresholds. In the short-term, the air quality impacts related to construction emissions would not exceed the SCAQMD's construction significance thresholds for all criteria and VOC pollutants analyzed, so it was concluded that the proposed Project would generate less than significant air quality impacts. In order to evaluate the localized air quality impacts from construction emissions to nearby sensitive receptors, a LST analysis was also completed. The results of the LST analysis indicated that the short-term construction emissions would be below the applicable LST significance thresholds. The LST significance thresholds are based on the most stringent ambient air quality standard applicable for the exposures duration related to construction activities for NO_2 and CO, which are based on health effects. The LSTs for PM10 and PM2.5 were derived based on fugitive dust control requirements in SCAQMD Rule 403, which are

indirectly based on the state PM10 standard. Since construction of the proposed Project is short-term and would not exceed the applicable LST significance thresholds for localized air quality impacts, no significant adverse health impacts associated with construction emissions are expected. The impacts from operation would not exceed the SCAQMD's operational significance thresholds for all criteria and VOC pollutants analyzed and were also concluded to be less than significant. The proposed Project's onsite emissions were modeled to evaluate potential localized air quality impacts, which were demonstrated to be below the applicable LSTs or ambient air quality standards, which are health-based standards. The primary health effects associated with exposure to NO_2, CO, PM10, and PM2.5 are respiratory impacts including decreased lung function, aggravation of chronic respiratory condition, and aggravation of heart disease conditions. No such adverse health impacts are expected during the construction or operation of the proposed Project.

Epidemiological analyses have consistently linked air pollution, especially TACs, with excess mortality and morbidity. Health studies have shown both short-term and long-term exposures of ambient concentrations are directly associated with increased mortality and morbidity. To estimate potential air quality impacts from a particular facility, the AERMOD air dispersion model can be used to provide PM10 concentration levels at a set of receptor points. A concentration-response equation can be calculated on the modeled air quality impacts and changes in mortality to determine the relative change in mortality associated with the estimated changes in annual PM levels and estimate the potential for health impacts. For this calculation, it is assumed that all the PM10 is PM2.5. The log-linear form of the concentration response equation is:

$$\Delta \text{ Mortality} = y_0 (e^{\beta \Delta PM} - 1) * \text{population}$$

where

y_0 = county level all cause annual death rate per person for ages 30 and older,

β = PM2.5 coefficient from health study,

ΔPM = change in annual mean PM2.5 concentration, and

Population = population of ages 30 and older.

The resulting change in cases of mortality in a population age group living in a specific location with a given change in PM can then be calculated. By applying the census tract level for all census tracts within the modeling domain, the overall estimate in the change in mortality from PM emission of the facility is determined. Since the air quality analysis shows that the onsite PM emissions from the proposed Project do not have offsite consequences (i.e., no concentrations above the ambient air quality standards), the above modeling procedure is not required and, thus, no increase in morbidity or mortality rates or related health effects are anticipated.

The indirect PM emissions associated with the proposed Project are limited to an increase in truck trips associated with additional aqueous ammonia shipments to the Refinery. The potential annual increase in truck trips does not produce a localized increase in PM because only one truck per day with up to 16 additional truck trips per year would be needed. Therefore, no significant

adverse air quality or related health impacts are expected due to operation of the proposed Project.

The long-term air quality impacts from exposure to toxics were evaluated through the preparation of an HRA. The HRA evaluated the emissions associated with the operation of the proposed Project to derive cancer and non-cancer health risk values, which were then compared to carcinogenic and non-carcinogenic significance thresholds. As demonstrated in the HRA, the carcinogenic and non-carcinogenic impacts for all receptors are expected to be less than the applicable significance thresholds. Therefore, no significant adverse carcinogenic or non-carcinogenic health risk impacts associated with the operation of the proposed Project are expected.

3. e) Odors

The proposed Project is not expected to create significant objectionable odors, either during construction or during operations. Sulfur compounds (e.g., hydrogen sulfide) are the primary sources of odors at a refinery. The Cogen Unit would use natural gas and refinery fuel gas in the gas turbine and duct burner, respectively. While both fuels contain trace amounts of sulfur compounds, significant objectionable odors are not expected since the fuel supply systems must be operated as a closed system to prevent safety hazards (e.g., potential fires).

Ammonia would be used in the SCR to control of NOx emissions. Ammonia can have a strong odor; however, the proposed Project is not expected to generate substantial odor impacts from ammonia emissions, since the proposed Project would use aqueous ammonia. The aqueous ammonia would be stored in an existing tank with controls to reduce ammonia emissions and transported in enclosed piping to the SCR at the Cogen Unit. Unreacted ammonia emissions from the SCR stack (also referred to as ammonia slip) would be limited to five parts per million (ppm). Since exhaust emissions are buoyant as a result of being heated, ammonia would disperse and ultimate ground level concentrations would be substantially lower than five ppm. Five ppm is below the odor threshold for ammonia of 20 ppm (OSHA, 2007).

The Refinery maintains a 24-hour environmental surveillance effort where operators are trained to report odors so that the source can be identified and remedied promptly, which helps to minimize the frequency and magnitude of odor events. No odors are expected from the new equipment. In addition, all new or modified components would be required to comply with BACT requirements as well as existing SCAQMD rules and regulations, including Rule 402 - Prohibition of Nuisances. Therefore, no significant odor impacts are expected from constructing and operating the proposed Project.

3. g and h) Greenhouse Gas Emissions

Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation, and temperature. Historical records have shown that temperature changes have occurred in the past, such as during previous ice ages. Some data indicate that the current temperature record differs from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of greenhouse gases needed to stabilize global temperatures and climate change impacts. It concluded that a stabilization of greenhouse gases (GHGs) at 400 to 450 ppm carbon dioxide-equivalent concentration is required to keep global mean warming below two degrees Celsius, which is assumed to be necessary to avoid dangerous climate change.

The potential health effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems (i.e., heat rash and heat stroke). In addition, climate sensitive diseases may increase, such as those spread by mosquitoes and other disease carrying insects. Those diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture, which would have negative consequences. Drought in some areas may increase, which would decrease water and food availability. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution.

Table 2-8 presents the GHG emission inventory by major source categories in calendar year 2008, as identified in the 2012 AQMP, for Basin. The emissions reported herein are based on in-Basin energy consumption and do not include out-of-Basin energy production (e.g., power plants, crude oil production) or delivery emissions (e.g., natural gas pipeline loss). Three major greenhouse gas pollutants have been included: the carbon dioxide (CO_2), nitrous oxide (N_2O), and methane (CH_4). These GHG emissions are reported in million metric tons of CO_2 equivalent ($MMTCO_2e$.) Mobile sources generate 59.4 percent of the total GHG emissions in the Basin (47.0 percent from on-road vehicles and 12.5 percent from other mobile sources (aircraft, trains, ships and boats, and other sources (construction equipment, airport equipment, oil and gas drilling equipment)). The remaining 40.6 percent of the total Basin GHG emissions are from stationary and area sources. The largest stationary/area source is fuel combustion, which is 27.8 percent of the total Basin GHG emissions (68.6 percent of the GHG emissions from the stationary and area source category).

Contribution of the Proposed Project

The analysis of GHG emissions is a different analysis than for criteria pollutants for the following reasons. For criteria pollutant, significance thresholds are based on daily emissions because attainment or non-attainment is typically based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects to human health, e.g., one-hour and eight-hour. Using the half-life of carbon dioxide (CO_2), 100 years, for example, the effects of GHGs are longer-term, affecting the global climate over a relatively long time frame. As a result, the SCAQMD evaluates GHG effects over a longer timeframe than a single day. The interim significance threshold for industrial projects is 10,000 metric tons per year of CO_2 equivalent emissions (see Table 2-1).

TABLE 2-8

2008 GHG Emissions for the Basin

Source Category	Emissions						
	CO_2	N_2O	CH_4	CO_2	N_2O	CH_4	CO_2e
	(TPD)			(TPY)			(MMT)
Fuel Combustion							
Electric Utilities	34,303	0.08	0.71	12,520,562	29.0	258	11.4
Cogeneration	872	0.00	0.02	318,340	0.60	6.00	0.29
Oil and Gas Production (Combustion)	2,908	0.01	0.08	1,061,470	4.71	29.5	0.96
Petroleum Refining (Combustion)	44,654	0.06	0.57	16,298,766	20.7	207	14.8
Manufacturing and Industrial	22,182	0.06	0.48	8,096,396	20.9	174	7.35
Food and Agricultural Processing	927	0.00	0.02	338,516	0.84	7.16	0.31
Service and Commercial	21,889	0.08	0.59	7,989,416	30.8	215	7.26
Other	2,241	0.02	0.16	818,057	8.58	58	0.75
Total Fuel Combustion	**129,977**	**0.32**	**2.62**	**47,441,523**	**116**	**956**	**43.1**
Petroleum Production and Marketing							
Oil and Gas Production	92.1	0.00	0.92	33,605	0.06	336	0.04
Petroleum Refining	770	0.00	1.65	280,932	0.36	603	0.27
Petroleum Marketing			83.8	0	0.00	30,598	0.58
Other			0.00	0	0.00	0	0.00
Total Petroleum Production and Marketing	**862**	**0.00**	**86.4**	**314,536**	**0.42**	**31,537**	**0.89**
Other Source Categories							
Total Waste Disposal(1)	3,772	0.04	508	1,376,870	14.9	185,278	4.78
Total Cleaning and Surface Coatings(2)	2,648	0.00	0.33	966,628	1.22	122	0.88
Total Industrial Processes(3)	279	0.00	1.49	101,832	0.19	543	0.10
Total Solvent Evaporation(4)	0.00	0.00	0.07	0.00	0.00	24.20	0.00
Total Miscellaneous Processes(5)	38,850	0.12	27.9	14,180,326	45.3	10,179	13.1
Total On-Road Motor Vehicles(6)	217,480	6.11	8.26	79,380,188	155	187	72.7
Total Other Mobile Sources(7)	57,572	1.83	8.95	21,013,816	668	3,268	19.3
Total Other Source Categories	**320,601**	**8.10**	**555**	**117,019,660**	**885**	**199,601**	**111**
Total 2008 Baseline GHG Emissions for Basin	**451,440**	**8.42**	**644**	**164,775,719**	**1,001**	**232,094**	**155**

(1) Waste Disposal includes sewage treatment, landfills, incineration, and other waste disposal.
(2) Cleaning and Surface Coatings includes laundering, degreasing, coatings and related processes, printing, adhesives and sealants, and other cleaning and surface coatings.
(3) Industrial Processes include chemical, food and agriculture, mineral processes, metal processes, wood and paper, glass and related products, electronic, and other industrial processes.
(4) Solvent Evaporation includes consumer products, architectural coating and related solvents, pesticides and fertilizers, and asphalt paving and roofing.
(5) Miscellaneous Processes include residential fuel combustion, farming operations, construction and demolition, paved road dust, unpaved road dust, fugitive windblown dust, fires, waste burning and disposal, utility equipment, cooking, and other miscellaneous processes.
(6) On-Road Motor Vehicles include trucks (all sizes), motorcycles, buses (all types), and motorhomes.
(7) Other Mobile Sources include aircraft; trains; ships; commercial boats, construction, airport, and oil and gas drilling equipment.

GHGs do not have human health effects like criteria pollutants. Rather, it is the increased accumulation of GHGs in the atmosphere that may result in global climate change. Due to the complexity of conditions and interactions affecting global climate change, it is not possible to predict the specific impact, if any, attributable to GHG emissions associated with a single project. Furthermore, the GHG emissions associated with the proposed Project would be small relative to total global or even state-wide GHG emissions. Thus, the significance of potential impacts from GHG emissions related to the proposed Project has been analyzed for long-term operations on a cumulative basis, as discussed below.

Construction

Construction equipment may include backhoes, compressors, cranes, front-end loaders, motor graders, trenchers, and water trucks. The equipment is assumed to be operational up to ten hours per day during most of the construction period. While construction workers are expected to be at the site for longer than eight hours per day due to time necessary for lunch and breaks, organization meetings, and so forth, construction equipment would not be expected to operate the entire time workers are onsite. Therefore, the assumption of equipment operating ten hours per day provides a conservative estimate of GHG emissions from the construction equipment. Emission factors for construction equipment were taken from the Construction Equipment Emissions tables available on the SCAQMD webpage (http://aqmd.gov/ceqa/hdbk.html). Estimated emissions from construction equipment used for construction activities are included in Table 2-9, with more detailed calculations in Appendix B.

TABLE 2-9

Construction GHG Emissions for the Proposed Project (metric tons)

Source	CO_2e[(1)]
Construction Equipment	355
30 Year Amortized	11.8

(1) CO_2 equivalent emissions or CO_2e.

Operational

When analyzing GHG emission impacts, SCAQMD policy requires combining construction emissions amortized over 30 years with operational emissions and then comparing this total to the GHG emissions significance threshold. The total GHG construction emissions associated with the proposed Project are estimated to be 355 metric tons over the entire construction period, or 11.8 metric tons per year amortized over 30 years. Operation of the proposed Project includes onsite generation of electricity in lieu of purchasing power from LADWP and operation of the existing boilers at reduced capacities. The calculated GHG emissions from proposed Project operation are shown in Table 2-10. The operation GHG emissions associated with the proposed Project are 43,801 metric tons per year. The total GHG emissions associated with the proposed Project, including the 30-year amortized construction GHG emissions, is 43,813 metric tons per year, which would require inclusion in the Refinery's GHG emission inventory.

TABLE 2-10

Operational GHG Emissions for the Proposed Project (metric tons per year)

Source	CO_2e
Current Operations	
Existing Boilers[1]	125,809
Third-Party Power[2]	162,781
Total Current Operations	288,590
Proposed Project	
Existing Boilers	72,677
New Cogen Unit	248,608
Third-Party Power[3]	11,107
Total Proposed Project	332,391
Increase from Proposed Project	43,801
30-Year Amortized Construction	11.8
Total GHG w/ Construction	**43,813**
AB32 Required Offsets	**43,813**
Emissions Increase	**0**
Significance Threshold	**10,000**
Significant?	**No**

(1) Based on average of 2009 and 2010 GHG emissions.
(2) Based on average of purchased power during 2009 and 2010.
(3) Anticipate less than three MW continue to be purchased from LADWP.

CARB has designed a California cap-and-trade program that is enforceable and meets the requirements of AB 32. The program began on January 1, 2012, with an enforceable compliance obligation beginning with the 2013 GHG emissions inventory. The Refinery is subject to the requirements of the AB32 Cap and Trade Program and will have a GHG allocation based on current GHG emissions levels. The AB32 Cap-and-Trade Program has divided allocations into sectors and established a Refinery Sector allocation. The Refinery Sector allocation is to be distributed among the refineries based on the complexity and energy efficiency of each refinery. The more energy efficient a refinery is, the greater the allocation it will receive. The Ultramar Inc. Refinery has a low energy efficiency index (i.e., a low energy efficiency index equates to high energy efficiency) and, therefore, will receive a greater GHG allocation than less energy efficient refineries. The GHG allocations for the Refinery Sector have not yet been assigned due to quality control issues that are being resolved (Chu, 2012). Additionally, the Refinery allocation process includes both on-site generated and third-party power. The AB32 Cap-and-Trade Program will require that the Refineries subject to the program to offset any GHG emissions in excess of the total allocation obtained through the program.

When the Cogen Unit is expected to be operational in 2014, GHG offsets would be required. As such, the GHG emissions associated with the proposed Project would be required to be offset, so that there would be no net increase in GHG emissions from the Refinery. Therefore, the

proposed Project with regulatory required GHG offsets would have a no net GHG emissions increase. GHG emissions from the proposed Project would be less than the interim SCAQMD GHG significance threshold of 10,000 metric tons per year (see Table 2-10). Thus, the GHG emissions from the proposed Project are considered less than significant.

3.3 Mitigation Measures

No significant adverse impacts from the proposed Project on air quality are expected, therefore, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
4.0	**BIOLOGICAL RESOURCES.** Would the project:				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
c)	Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☑
e)	Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
f)	Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

4.1 Significance Criteria

The impacts on biological resources will be considered significant if any of the following criteria apply:

The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.

The project interferes substantially with the movement of any resident or migratory wildlife species.

The project adversely affects aquatic communities through construction or operation of the project.

4.2 Environmental Setting and Impacts

4. a), b), c), d), e), and f) The proposed Project would be located in a heavy industrial area, entirely within the boundaries of an existing industrial facility. The Refinery has been fully developed and is essentially void of vegetation with the exception of some landscape vegetation near administration buildings. The Refinery controls the growth of vegetation at the site for fire prevention purposes. All native habitats have long since been removed from the site. The proposed Project does not include the acquisition of additional land for use by the Refinery or expansion outside of the Refinery's current boundaries, which further eliminates the potential for biological resource impacts. The proposed Project would not have an adverse effect, either directly or indirectly or through habitat modifications, on any sensitive biological species, riparian habitat, or other sensitive natural habitat because no flora or fauna of this type is located on or adjacent to the Refinery. The proposed Project would not result in the addition or the elimination of water ponds that could be used by animals or migratory fowl. Further, the proposed Project would not adversely affect federally protected wetlands as defined in §404 of the Clean Water Act as there are none on or adjacent to the Refinery. There are no rare, endangered, or threatened species at the Refinery site. There are no significant plant or animal resources, locally designated species, natural communities, wetland habitats, or animal migration corridors that would be adversely affected by the proposed Project. The proposed Project would not impact any local policies or ordinances that protect biological resources or conflict with the provisions of a Habitat Conservation Plan or other similar plan. Because the area in and near the Refinery is devoid of native habitat, impacts to other, non-listed species are not expected. Based on the above, no significant adverse impacts on biological resources are expected from the proposed Project.

4.3 Mitigation Measures

No significant adverse impacts on biological resources are expected from the proposed Project, therefore, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
5.0	**CULTURAL RESOURCES.** Would the project:				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☑
b)	Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☐	☐	☑
c)	Directly or indirectly destroy a unique paleontological resource, site, or feature?	☐	☐	☐	☑
d)	Disturb any human remains, including those interred outside formal cemeteries?	☐	☐	☐	☑

5.1 Significance Criteria

Impacts to cultural resources will be considered significant if:

The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.

Unique paleontological resources are present that could be disturbed by construction of the proposed project.

The project would disturb human remains.

5.2 Environmental Setting and Impacts

5. a), b), and c) CEQA Guidelines §15064.5 states that resources listed in the California Register of Historical Resources or in a local register of historical resources are considered "historical resources." Additionally, CEQA Guidelines §15064.5(a)(3) states that "generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing in the California Register of Historical Resources including the following:

(A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Is associated with the lives of persons important in our past;

(C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values;

(D) Has yielded or may be likely to yield information important in prehistory or history".

The Refinery an existing industrial facility in an area zoned for heavy industrial activity and has been previously graded and paved. No cultural resources have been found during past construction projects. The entire Refinery site has been previously graded and developed and is primarily located on fill material. The larger Refinery structures and equipment are supported on concrete foundations. The remainder of the site is unpaved. Any archaeological or paleontological resources that may have been present prior to development of the Refinery are not expected to be found at the site due to past disturbance and imported fill material.Therefore, unique paleontological resources are not expected.

In November 2010, a records search of cultural sites was conducted at the South Central Coastal Information Center located at California State University, Fullerton to determine if cultural resources were located within the area in the vicinity of the Refinery (City of Los Angeles, 2011). The records search indicated that no isolates (typically defined as three or fewer artifacts not associated with a defined, discrete archaeological site and, therefore, not eligible for the National Register of Historic Places or California register of Historic Resources inclusion) were identified at or within one mile of the Refinery.

The records search also indicated that there are no National Register of Historic Places listings within one mile of the Refinery. There is one California Registered Historical Landmark within one mile of the Refinery. The Drum Barracks was established in 1862 and became the United States military headquarters for southern California, Arizona, and New Mexico. The Drum Barracks was abandoned in 1866, but the site remains a landmark of the civil war in California.

The City of Los Angeles Historic Cultural Monuments list includes five properties within one mile of the Project. These properties are the Drum Barracks and Officers' Quarters Monument 21; Monument 25, the General Phineas Banning Residence; the Powder Magazine (Camp Drum) Monument 249; the Wilmington Cemetery, Monument 414; and Camphor Trees, Monument 509. None of these Monuments are within the Refinery and all are located more than one-half mile to the northwest of the Refinery in residential areas.

Based on the results of these record searches, the proposed Project modifications would not cause an adverse change in the significance of a resource listed in the California Register of Historical Resources or in a local register of historical resources; cause substantial adverse change in the significance of an archaeological resource as defined in §15064.5; or directly or indirectly destroy a unique paleontological resource, site, or feature.

There are no known prehistoric or historic structures or objects within the Refinery or adjacent areas. The proposed Project would be constructed within the confines of the existing Refinery

and would not affect structures in the surrounding area as no demolition of structures is required. Previous construction activities at the Refinery have not uncovered any archaeological or paleontological resources. No existing structures at the Refinery are considered architecturally or historically significant by the City of Los Angeles or any other group. Therefore, no impacts to historic resources would occur due to the proposed Project.

5. d) No known human remains or burial sites have been identified at the Refinery during previous construction activities so the proposed Project is not expected to disturb any human remains. As required by State law, if human remains are unearthed, no further disturbance will occur until the County Coroner has made the necessary findings concerning the origin and disposition of these remains. The Native American Heritage Commission will be notified if the remains are determined to be of Native American descent.

5.3 Mitigation Measures

No significant adverse impacts from the proposed Project on cultural resources are expected, therefore, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
6.0	**ENERGY.** Would the project:				
a)	Conflict with adopted energy conservation plans?	☐	☐	☐	☑
b)	Result in the need for new or substantially altered power or natural gas utility systems?	☐	☐	☑	☐
c)	Create any significant effects on local or regional energy supplies and on requirements for additional energy?	☐	☐	☑	☐
d)	Create any significant effects on peak and base period demands for electricity and other forms of energy?	☐	☐	☑	☐
e)	Comply with existing energy standards?	☐	☐	☐	☑

6.1 Significance Criteria

The impacts to energy and mineral resources will be considered significant if any of the following criteria are met:

The project conflicts with adopted energy conservation plans or standards.

The project results in substantial depletion of existing energy resource supplies.

An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.

The project uses non-renewable resources in a wasteful and/or inefficient manner.

6.2 Environmental Setting and Impacts

6. a) and e) The proposed Project is not expected to conflict with an energy conservation plan or energy standards. The proposed Project would include installation of a Cogen Unit. The proposed Project is not expected to conflict with an adopted energy conservation plan because there are no known energy conservation plans that would be impacted by the proposed Project. The proposed Project is not expected to substantially increase the Refinery's energy demand, but is designed to shift the Refinery's energy supply to on-site efficient cogeneration from offsite power less efficiently produced by LADWP. Producing electricity on-site is considered energy efficient as energy transmission losses are eliminated.

6. b), c), and d) An incremental increase of up to 12,150 gallons (approximately 55 gallons per day(gpd)) of gasoline and 10,850 gallons (approximately 50 gpd) of diesel usage would occur during construction activities (e.g., operation of construction equipment, material delivery trucks, and worker commute vehicles). *Gasoline and Diesel usage in the Los Angeles region in 2011 was about 425,000 barrels per day (13.4 million gpd) (CEC, 2011) and 24,400 barrels per day (0.77 million gpd) (CEC, 2011a), respectively. Assuming construction-related activities in the future years would yield similar results, the fuel required by the proposed Project would represent about 0.00074 percent of the projected daily demand.* ~~Gasoline usage for transportation activities in the Los Angeles region in 2001 was about 600,000 barrels per day or about 25 million gpd (CEC, 2002). Assuming construction-related activities in the future years would yield similar results, the fuel required by the proposed Project would represent about 0.0002 percent of the projected daily demand.~~ This demand occurs for the construction period only and represents a very small percentage of the total demand for fuels in the Los Angeles region. Therefore, the gasoline and diesel fuel usage for project construction is not considered a significant adverse impact or a wasteful use of energy resources.

Electrical power may be required for certain construction equipment, e.g., electric welders, lights, etc. However, most of the construction equipment is operated using gasoline and diesel fuels. The electricity requirement for the construction phase is expected to be within the normal electricity usage of the Refinery since electric welders and lights require minimal electricity (about 35-50 horsepower). This requirement can be met with the existing electrical capacity so no significant adverse impact on electricity is expected during the construction phase.

No significant increase in natural gas demand is expected during the construction phase of the proposed Project since most of the construction equipment would be operated using gasoline and diesel fuels. None of the construction equipment is expected to use natural gas; because heavy duty natural gas-powered construction equipment is, generally, not currently available. Therefore, no significant adverse impacts to natural gas utilities are expected due to construction activities.

Operation of the proposed Project would produce about 35 MW of electricity, 31 MW of which would replace the electricity provided by the LADWP. The LADWP is the largest of the public-owned electric utilities in southern California and provides electricity service to most customers located in the City of Los Angeles. Ultramar is one of the largest customers of power from the LADWP. As such, the proposed Project would reduce the power demand from LADWP by 31 megawatts. Therefore, the proposed Project is not expected to create any significant effects on local or regional electrical supplies or peak and base period demands.

Operation of the proposed Project would require additional natural gas and refinery fuel gas. The Refinery is expected to generate sufficient refinery fuel gas to supply the Cogen Unit duct burner because the boilers, which combust refinery fuel gas, would be restricted by permit limits to operate at reduced loads when the Cogen Unit is operating. Depending of operating conditions, approximately 59 to 71 percent of the seven million cubic feet of the refinery fuel gas that is currently combusted in two boilers would be available for use in the Cogen Unit. The Cogen Unit is expected to require about 3.5 million cubic feet per day of refinery fuel gas, or approximately 50 percent of the amount currently combusted in the two boilers. Therefore, a

sufficient supply of refinery fuel gas is available for the proposed Project. In addition to the refinery fuel gas diverted from the two boilers, approximately eight million cubic feet per day of additional natural gas would be required to supply the gas turbine portion of the Cogen Unit. About 5,700 million cubic feet per day of natural gas is consumed in California (SCAQMD, 2007). The natural gas impacts from the implementation of the proposed Project are a small percentage of the total natural gas usage and are expected to be less than significant. These energy impacts are expected to be less than significant because sufficient natural gas and refinery fuel gas capacity and supplies are expected to be available.

6.3 Mitigation Measures

No significant adverse impacts on energy are expected from the proposed Project, therefore, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
7.0	**GEOLOGY AND SOILS.** Would the project:				
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☑
	• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☐	☑
	• Strong seismic ground shaking?	☐	☐	☑	☐
	• Seismic–related ground failure, including liquefaction?	☐	☐	☑	☐
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐
c)	Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☑	☐
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☑	☐
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☑	☐

7.1 Significance Criteria

The impacts on the geological environment will be considered significant if any of the following criteria apply:

Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.

Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.

Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.

Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.

Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

7.2 Environmental Setting and Impacts

7. a), c), and d) The proposed Project would be constructed in an area of known seismic activity. Approximately 35 active faults are known to exist within a 50-mile radius of the Refinery. Of primary concern are two active faults: the Newport-Inglewood Fault, approximately four miles north of the Refinery, and the Palos Verdes Fault, approximately 5.5 miles south of the site.

The Newport-Inglewood Fault Zone represents the most significant source of strong seismic ground shaking at the Refinery. The Newport-Inglewood Fault Zone extends more than 40 miles from Newport Bay to Beverly Hills and trends to the northwest. The greatest concentration of seismic events on the Newport-Inglewood Fault Zone is related to the 1933 Long Beach earthquake and its aftershocks. The fault is considered capable of generating a 6.9 magnitude earthquake.

Another significant fault in the immediate Refinery vicinity is the Palos Verdes Fault Zone. This fault extends approximately 72 miles from Santa Monica Bay south to Lausen Knoll in the southern San Pedro Channel. The Palos Verdes fault is considered capable of a 7.1 magnitude earthquake. Evaluations by the Southern California Earthquake Center indicate that there is a 10 percent probability of earthquake ground motion exceeding 0.45 gravity at the Refinery site over a 30-year period (SCEC, 2010).

Although the Refinery is located within a seismically active area, according to the Alquist-Priolo Earthquake Fault Zoning Maps and Fault Activity Map of California (1994), it is not located on a fault trace that would define the site as a special seismic study zone under the Alquist-Priolo Act,

so the site would not likely be subject to ground surface ruptures. Thus, the risk of earthquake-induced ground rupture is considered less than significant.

Based on the historical record, it is highly probable that earthquakes would affect the Los Angeles region in the future. Research shows that damaging earthquakes would occur on or near recognized faults which show evidence of recent geologic activity. The proximity of major faults to the Refinery increases the probability that an earthquake may adversely affect the existing Refinery and the proposed Project, resulting in the potential for damage in the event of an earthquake. Impacts of an earthquake could include structural failure, spill, etc. The impacts of a potential hazardous materials release during an earthquake are addressed in the following "8. Hazards and Hazardous Materials" section.

New structures must be designed to comply with the California Building Code requirements. The City of Los Angeles is responsible for assuring that the proposed Project complies with the California Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. The California Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the code is to provide structures that would: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage, but with some non-structural damage; and (3) resist major earthquakes without collapse, but with some structural and non-structural damage. The California Building Code bases seismic design on minimum lateral seismic forces ("ground shaking"). The California Building Code requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. The basic formulas used for the California Building Code seismic design require determination of the seismic class and site coefficient, which represent the foundation conditions at the site.

Since the proposed Project is located in a seismically active area, the Refinery is required to obtain building permits, as applicable, for all new or replaced structures at the site. The Refinery shall submit building plans to the City of Los Angeles for review. The Refinery must receive approval of all building plans and building permits to assure compliance with the appropriate Building Code adopted by the City prior to commencing construction activities. The issuance of building permits from the local agency would assure compliance with the California Building Code requirements, which include requirements for building within seismic hazard zones. No significant adverse impacts from seismic hazards are expected since the proposed Project would be in compliance with the California Building Codes.

Soil liquefaction can accompany strong earth movement caused by earthquakes. Liquefaction would most likely occur in unconsolidated granular sediments that are water saturated less than 30 feet below ground surface (Tinsley et al., 1985). The pore water pressure can increase in certain soils during extended periods of ground shaking which can change the soil from a solid to liquid state. Structures that are built on soils subject to liquefaction can sink during an earthquake and be damaged since the soils cannot support their weight.

The California Division of Mines and Geology (CDMG) has prepared seismic hazard map zones for areas in California as required by the Seismic Hazards Mapping Act (Public Resources Code

§ 2690-2699.6). The Refinery is located in the Long Beach Quadrangle and the area has been mapped for seismic hazards by the Division of Mines and Geology. The Hazard Map for the area indicates that the Refinery is located within an area where there has been historic occurrence of liquefaction. In addition, local geological, geotechnical, and groundwater conditions indicate a potential for permanent ground displacements in the area of the Refinery in the event of an earthquake (CDMG, Map of Seismic Hazard Zones, Long Beach Quadrangle, March 25, 1999). The issuance of building permits from the City of Los Angeles would assure compliance with the California Building Code requirements, which include requirements for building within potential liquefaction zones. No significant impacts from liquefaction are expected since the proposed Project would be required to comply with the California Building Code.

The proposed Project site is not subject to landslide or mudflow since the site is flat and there are no hills or mountains nearby. Therefore, no significant adverse impacts due to landslides or mudflows are expected.

No expansive soils, as defined in Table 18-1-B of the Uniform Building Code are present in the proposed Project areas. Therefore, the proposed Project would not create substantial risk to life or property as a result of expansive soils.

7. b) The proposed Project is located within the confines of the existing Refinery. Concrete foundations presently support the Refinery structures and equipment. Most Refinery roads and operating unit areas have been paved. The local topography for the Refinery site is flat.

During construction of the proposed Project, the possibility exists for temporary erosion resulting from excavation and grading activities. These activities are expected to be minor since the proposed Project would occur within already developed facilities in areas with generally flat topography. The proposed Project involves the addition of new equipment to an existing facility so major grading/trenching is not expected to be required and is expected to be limited to minor foundation work and minor trenching for piping. Therefore, no significant impacts related to soil erosion are expected. No significant change in topography is expected because little grading/trenching is required that could substantially increase wind erosion or runoff from the affected site. The proposed Project would be required to comply with SCAQMD Rule 403 – Fugitive Dust, which imposes requirements to minimize fugitive dust emissions associated with wind erosion. Relative to operation, no change in surface runoff is expected because surface conditions would remain relatively unchanged. Further, surface runoff is minimized because surface runoff at all facilities is typically captured, treated, and released to the public sewer system or storm drain system (refer to discussion 9. c) and 9. d).

7. e) The Refinery discharges wastewater to the local sewer system under an Industrial Wastewater Discharge Permit. Neither the Refinery nor the proposed Project would use septic tanks or alternative wastewater disposal systems, therefore, no significant impacts on soils from alternative wastewater disposal systems are expected.

7.3 Mitigation Measures

No significant adverse impacts from the proposed Project on geology and soils are expected, therefore, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
8.0	**HAZARDS AND HAZARDOUS MATERIALS.** Would the project:				
a)	Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	☐	☐	☑	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment?	☐	☐	☑	☐
c)	Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☑
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	☐	☐	☑	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☑	☐
g)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☑
h)	Significantly increased fire hazard in areas with flammable materials?	☐	☐	☑	☐

8.1 Significance Criteria

The impacts associated with hazards will be considered significant if any of the following occur:

Non-compliance with any applicable design code or regulation.

Non-conformance to National Fire Protection Association standards.

Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.

Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

Exposure to radiant heat exposures in excess of 1,600 British Thermal Units per hour per square foot (Btu/hr/ft^2) (the level that exceeds one pound per square inch gauge (psig) (the level that would result in partial demolition of houses).

Flash fire hazard zones that exceed the lower flammable limit (LFL) (the level that would result in a flash fire in the event a flammable vapor cloud was ignited).

8. a), b, and h) Potential Hazards

Hazards at a facility can occur due to natural events, such as earthquake, and non-natural events, such as mechanical failure or human error. A hazard analysis generally considers compounds or physical forces that can migrate off-site and result in acute health effects to individuals outside of the proposed Project site. The risk associated with a facility is defined by the probability of an event and the consequence (or hazards) should the event occur. The hazards can be defined in terms of the distance that a release would travel, or the number of individuals of the public affected by a maximum single event defined as a "worst-case" scenario. This section discusses existing hazards to the community from potential upset conditions at the Refinery to provide a basis for evaluating the changes in hazards posed by the proposed Project.

The major types of public safety risks at the Refinery consist of risk from releases of regulated substances and from major fires and explosions. The discussion of the hazards associated with the existing Refinery relies on data in the Worst Case Consequence Analysis for the Cogeneration Project (see Appendix C).

Shipping, handling, storing, and disposing of hazardous materials inherently poses a certain risk of a release to the environment. The regulated substances currently handled by the Refinery include chlorine, hydrofluoric acid, and ammonia. The Refinery also handles petroleum products including propane, butane, isobutane, gasoline, fuel oils, diesel, and other products, which pose a risk of fire and explosion at the Refinery. Accident scenarios for the existing Refinery evaluated herein include releases of regulated substances and potential fires/explosions. The transportation risks are also described below.

Types of On-Site Hazards

A hazard analysis generally includes consideration of the compounds or physical forces that can migrate off-site and result in acute health effects to individuals outside of the Refinery boundaries. It should be noted that hazards exist to workers on-site. However, the workers have the benefit of training in fire and emergency response procedures, protective clothing, access to respiratory protection, and so forth. The general public does not typically have access to these safety precautions and measures in the event that the hazard situation occurs or migrates off-site. Therefore, workers could be exposed to hazards and still be protected because of training and personal protective equipment.

Hazards can be defined in terms of the distance that a release may travel by maximum single events (defined as "worst-case" scenarios). "Worst-case" scenarios represent the maximum extent of potential hazards that could occur within the process area that was evaluated, based on "worst-case" (generally low wind speed) meteorological conditions and assuming a complete release of materials.

The potential hazards associated with industrial activities are a function of the materials being processed, processing systems, and procedures used to operate and maintain the facility. The hazards that are likely to exist are identified by the physical and chemical properties of the materials being handled and their process conditions, including the following events.

Exposure to Toxic Gas Clouds: Toxic gas clouds (gas or liquefied gas with hydrogen fluoride or hydrogen sulfide) could form and migrate off-site, thus, exposing individuals to toxic materials. "Worst-case" conditions tend to arise when very low wind speeds coincide with accidental release, which can allow the chemicals to accumulate rather than disperse.

Exposure to Flame Radiation: Flame (thermal) radiation is the heat generated by a fire and the potential impacts associated with exposure to it. Exposure to thermal radiation would result in burns, the severity of which would depend on the intensity of the fire, the duration of exposure, and the distance of an individual to the fire.

Thermal radiation can be caused by pool fire (tank fire, spill into diked areas), torch fire (rupture of line followed by ignition), BLEVE (boiling liquid-expanding vapor explosion of a pressurized storage vessel) and/or flash fires (ignition of slow-moving flammable vapors).

Exposure to Explosion Overpressure: Several process vessels containing flammable explosive vapors and potential ignition sources are present at the Refinery. Explosions may occur if the flammable/explosive vapors come into contact with an ignition source. The greatest threat could occur from a vapor cloud explosion (release, dispersion, and explosion of a flammable vapor cloud), or a confined explosion (ignition and explosion of flammable vapors within a building or confined area). An explosion could cause impacts to individuals and structures in the area due to overpressure.

A summary of the types of existing hazards at the Refinery associated with the units at the Refinery in the vicinity of the proposed Project is shown in Table 2-11.

TABLE 2-11

Summary of Existing Hazards(1)

Area Description(2)	Type of Hazards Found in the Area
Auxiliary systems Natural Gas Lines Refinery Fuel Gas Lines	Breach of low pressure piping resulting in: Pool fire
	Breach of vapor line resulting in: Torch fire
Storage AQNH3 Tank	Breach of atmospheric storage resulting in: Toxic cloud (ammonia)

(1) The hazard analysis is limited to the units being modified as part of the proposed Project.
(2) AQNH3 = aqueous ammonia

Exposure to Contaminated Water: An upset condition and spill has the potential to affect ground water and water quality. A spill of hazardous materials could occur under upset conditions, e.g., earthquake, tank rupture, and tank overflow. In the event of a spill, materials could migrate off-site if secondary containment and appropriate spill control measures are not in place.

Transportation Risks

The transportation of hazardous substances poses a potential for fires, explosions, and hazardous materials releases. In general, the greater the vehicle miles traveled, the greater the potential for an accident. Statistical accident frequency varies, (especially for truck transport), and is related to the relative accident potential for the travel route since some freeways and streets are safer than others. The size of a potential release is related to the maximum volume of a hazardous substance that can be released in a single accident, should an accident occur, and the type of failure of the containment structure, e.g., rupture or leak. The potential consequences of the accident are related to the size of the release, the population density at the location of the accident, the specific release scenario, the physical and chemical properties of the hazardous material, and the local meteorological conditions.

The factors that enter into accident statistics include distance traveled and type of vehicle or transportation system. Factors affecting automobiles and truck transportation accidents include the type of roadway; presence of road hazards; vehicle type; maintenance and physical condition; and driver training. A common reference frequently used in measuring risk of an accident is the number of accidents per million miles traveled. Complicating the assessment of risk is the fact that some accidents can cause significant damage without injury or fatality.

Every time hazardous materials are moved from the site of generation, there are opportunities for accidental (unintentional) releases. The U.S. Department of Transportation (U.S. DOT) conducted a study on the comparative risks of hazardous materials and non-hazardous materials and non-hazardous materials truck shipment accidents and incidents. The Federal Motor Carrier Safety Administration (FMCSA) compared risks of hazardous materials truck shipment accidents

and incidents to non-hazardous materials truck shipment accidents and incidents (FMCSA, 2001). The estimated accident rate for trucks (shipping non-hazardous materials) was 0.73 per million miles traveled. The average accident rate for trucks transporting hazardous materials (all hazard classes) was estimated to be 0.32 per million miles traveled (FMCSA, 2001). The average accident rate for trucks carrying corrosive materials (hazard class 8), such as aqueous ammonia, was estimated to be 0.13 per million miles traveled (FMCSA, 2001). Though it is difficult to compare hazardous and non-hazardous transport risk, the differences appear to be significant enough to conclude that the magnitude of non-hazardous transport accidents dominates highway transport risk. The specific hazardous material trucking regulations and additional care provided by carriers and shippers of hazardous materials appear to be reducing the accident rate for hazardous material shipments (FMCSA, 2001).

The County of Los Angeles has developed criteria to determine the safest transportation routes. Some of the factors which need to be considered when determining the safest direct routes include traffic volume, vehicle type, road capacity, pavement conditions, emergency response capabilities, spill records, adjacent land use, and population density. In managing the risk involved in the transportation of hazardous materials, all these factors must be considered.

The actual occurrence of an accidental release of a hazardous material associated with a traffic accident cannot be predicted. The location of an accident or whether sensitive populations would be present in the immediate vicinity also cannot be identified. In general, the shortest and most direct route that takes the least amount of time would have the least risk of an accident. Hazardous material transporters do not routinely avoid populated areas along their routes, although they generally use approved truck routes that take population densities and residential areas into account.

The hazards associated with the transport of regulated (California Code of Regulations (CCR) Title 19, Division 2, Chapter 4.5 or the CalARP requirements) hazardous materials, e.g., aqueous ammonia, would include the potential exposure of numerous individuals in the event of an accident that would lead to a spill. Ammonia is currently used and transported to the Refinery. Factors such as amount transported, wind speed, ambient temperatures, route traveled, distance to sensitive receptors are considered when determining the consequence of a hazardous material spill.

Hazards and Hazardous Materials Impacts

A hazard analysis was conducted for the proposed new Cogen Unit, which is summarized in Table 2-12. The details of the hazard analysis are included in Appendix D.

Table 2-12 lists the potential hazards (fires, explosion overpressure, or thermal radiation) from the new natural gas and refinery fuel gas lines associated with the proposed Project, which would branch from existing larger facility supply lines, and the results of the modeling for these hazards. The modeling analysis includes an evaluation of the impact of the release regardless of the cause (e.g., breakdown, human error, terrorism, etc.). Hazard impact results are shown for existing equipment in the vicinity of the Cogen Unit and the new equipment. For each new

TABLE 2-12

Maximum Hazard Distances for Maximum Credible Event for the Cogen Project

Process Unit/ Area	Status of Potential Hazard (E) Existing (M) Modified (N) New	Flash Fire (LFL)	Explosion Overpressure Significance Threshold (psig)	Pool/Torch Fire Thermal Radiation Significance Threshold (Btu/hr/ft^2)	NH_3 Gas Concentration Significance Threshold (ppm)
			1.0	1,600.	150
		Maximum Distance (f) from Center of Unit to			
NG LINE	E	75	--	100	--
	N	70	--	70	--
RFG LINE	E	115	--	160	--
	N	50	--	50	--
NH3	E	--	--	--	215
	M	--	--	--	215

Nomenclature:

NG LINE	Natural Gas Line
RFG LINE	Refinery Fuel Gas Line
NH3	E = Existing Aqueous Ammonia Tank; M = Ammonia Tank after line added; N = New

potential release, the distance to the significance threshold level was determined. The proposed Project does not affect the size or the location of the largest potential release for the supply lines. In other words, the proposed Project does not increase the existing magnitude of any release nor shift the location of the existing maximum potential impact from a release of natural gas or refinery fuel gas.

In addition to the pipeline hazards, aqueous ammonia used as a reducing agent would be used in the SCR unit within the Cogen Unit. Aqueous ammonia is currently used within the Refinery at other SCR units. The proposed Project would use the existing ammonia storage tank and delivery system by extending the piping from the processing unit adjacent to the proposed new Cogen Unit. The maximum potential hazard of concern associated with the aqueous ammonia system is a release from the existing ammonia storage tank. Although the annual amount of ammonia used would increase, requiring 16 additional deliveries annually, the proposed Project does not require modifying the ammonia storage tank located a minimum of 465 feet from the property line and, therefore, does not create a new or greater hazard associated with the storage of aqueous ammonia, nor does the proposed Project create a potential off-site impact, based on the maximum hazard zones defined for each release. Additionally, a release from the existing aqueous ammonia tank would not extend offsite. The existing boilers would not have physical modifications, but would be operationally restricted by permit conditions. Therefore, no change in potential hazards from boiler operation would occur.

Natural gas, refinery fuel gas, and aqueous ammonia are already onsite and in use at the Refinery. The proposed Project would not introduce new hazardous materials at the Refinery. Therefore, the hazard impacts from the proposed Project are expected to be less than significant.

Regulatory Compliance

There are many federal and state rules and regulations that refineries and petroleum storage facilities must comply with which serve to minimize the potential impacts associated with hazards at these facilities. The most important and relevant regulations relative to hazards are summarized in the following paragraphs.

Under the Occupational Safety and Health Administration (OSHA) regulations [29 Code of Federal Regulations (CFR) Part 1910], facilities which use, store, manufacture, handle, process, or move highly hazardous materials must prepare a fire prevention plan. In addition, 29 CFR Part 1910.119, Process Safety Management (PSM) of Highly Hazardous Chemicals, and CCR, Title 8, General Industry Safety Order §5189, specify required prevention program elements to protect workers at facilities that handle toxic, flammable, reactive or explosive materials. Prevention program elements are aimed at preventing or minimizing the consequences of catastrophic releases of the chemicals and include process hazard analyses, formal training programs for employees and contractors, investigation of equipment mechanical integrity, and an emergency response plan.

Section 112 (r) of the Clean Air Act Amendments of 1990 [42 U.S.C. 7401 et. Seq.] and Article 2, Chapter 6.95 of the California Health and Safety Code require facilities that handle listed regulated substances to develop Risk Management Programs (RMPs) to prevent accidental releases of these substances, U.S. EPA regulations are set forth in 40 CFR Part 68. In California, the California Accidental Release Prevention (CalARP) Program regulation (CCR Title 19, Division 2, Chapter 4.5) was issued by the Governor's Office of Emergency Services (OES), which has been renamed the California Emergency Management Agency (CalEMA). RMPs consist of three main elements: a hazard assessment that includes off-site consequences analyses and a five-year accident history, a prevention program, and an emergency response program. RMPs for existing facilities were required to be submitted by June 21, 1999. Valero has complied with the RMP requirements and has submitted the appropriate reports. The Los Angeles City Fire Department is the Certified Unified Program Agency (CUPA) that administers the CalARP program for the Refinery. The Refinery is also required to comply with the U.S. EPA's Emergency Planning and Community Right-to-Know Act (EPCRA), which requires annual reporting of releases from the Refinery and specific requirements in the event of an emergency release.

All Refinery facilities have a Spill Prevention Containment and Countermeasures (SPCC) Plan per the requirements of 40 Code of Federal Regulations, Part 112. The SPCC is designed to prevent spills from on-site facilities and includes requirements for secondary containment, provides emergency response procedures, establishes training requirements, and so forth. Additional spill equipment is available through commercial contracts with suppliers that specialize in spill cleanup. Commercial contractors that specialize in oil cleanup are employed to place any additional booms or other spill capture equipment, if necessary, and to remove oil from the water, if the oil is released into waterways, e.g., the Dominguez Channel.

The Hazardous Materials Transportation (HMT) Act is the federal legislation that regulates transportation of hazardous materials. The primary regulatory authorities are the U.S. DOT, the

Federal Highway Administration, and the Federal Railroad Administration. The HMT Act requires that carriers report accidental releases of hazardous materials to the Department of Transportation at the earliest practical moment (49 CFR Subchapter C). Incidents which must be reported include deaths, injuries requiring hospitalization, and property damage exceeding $50,000. The California Department of Transportation (Caltrans) sets standards for trucks in California. The regulations are enforced by the California Highway Patrol.

California Assembly Bill 2185 (Health and Safety Code § 2550 et Seq.) requires local agencies to regulate the storage and handling of hazardous materials and requires development of a plan to mitigate the release of hazardous materials. Businesses that handle any of the specified hazardous materials must submit to government agencies (i.e., fire departments), an inventory of the hazardous materials, an emergency response plan, and an employee training program. The business plans must provide a description of the types of hazardous materials/waste on-site and the location of these materials. The information in the business plan can then be used in the event of an emergency to determine the appropriate response action, the need for public notification, and the need for evacuation.

The proposed Project would be required to comply with various regulations, including OSHA regulations (29 CFR Part 1910) that require the preparation of a fire prevention plan, and 20 CFR Part 1910 and Title 8 of the CCR that require prevention programs to protect workers that handle toxic, flammable, reactive, or explosive materials.

Ultramar has PSM program that meets the requirements of the regulations and is appropriately implemented is intended to prevent or minimize the consequences of a release involving a toxic, reactive, flammable, or explosive chemical. The primary components of the PSM program include written safety information; performance of process safety analysis; detailed operating procedures; training; and pre-start up safety review for new and modified facilities.

Ultramar has prepared an RMP for the existing Refinery, which may need to be revised to incorporate the changes associated with the proposed Project. The Hazardous Materials Transportation Act is the federal legislation that regulates transportation of hazardous materials.

Ultramar does and would comply with all applicable design codes and regulations, conform to National Fire Protection Association standards, and conform to policies and procedures concerning leak detection containment and fire protection. Therefore, no significant adverse compliance impacts are expected.

Impacts on Water Quality

A spill of any of the hazardous materials (generally petroleum products and by-products from the refining process) used and stored at the Refinery could occur under upset conditions, e.g., earthquake, tank rupture, and tank overflow. Spills also could occur from corrosion of containers, piping, and process equipment; and leaks from seals or gaskets at pumps and flanges. A major earthquake would be a potential cause of a large spill or release. Other causes could include human or mechanical error or deliberate human action such as terrorism. Construction of the vessels and foundations in accordance with the California Building Code requirements

helps structures to resist major earthquakes without collapse, but result in some structural and non-structural damage following a major earthquake. The Refinery has emergency spill containment equipment and would implement the spill control measures in the event of an earthquake.

The proposed Project would not involve the storage of large quantities of hazardous materials. The aqueous ammonia for the proposed Project would be distributed from the existing aqueous ammonia tank, which is located within a spill containment area. In general, spills at the Refinery would be collected within containment facilities. Large spills outside of containment areas at the Refinery are expected to be captured by the process water system where it would be controlled. Spilled material would be collected and pumped to an appropriate tank, or sent off-site if the spilled material cannot be used on-site. Because of the containment systems in place, spills are not expected to migrate from the Refinery. Thus potential adverse water quality hazard impacts are considered to be less than significant.

Transportation Hazards

The transportation of hazardous materials can result in offsite releases through accidents or equipment failure. The materials currently transported to and from the Refinery include sulfur, oxygen, ammonia, and other materials. The proposed Project is expected to increase ammonia deliveries to the Refinery by 16 trucks per year. Aqueous ammonia is currently and will continue to be delivered using truck routes designated for hazardous materials transport. Designated routes are identified to use roads designed to handle the weight, size, and type of cargo being transported.

The Refinery receives aqueous ammonia from a local ammonia supplier located in the greater Los Angeles area. As is currently the case with existing ammonia deliveries, deliveries of aqueous ammonia would be made to the facility by tanker truck via public roads. Aqueous ammonia is delivered to the Refinery in 6,000 gallon trucks. The consequence (number of people exposed) would not change when the proposed Project becomes operational. Further, 16 new ammonia trips per year would not appreciably change the probability of an accidental release. Therefore, transportation hazards are expected to be less than significant.

8. c) The Refinery is not located within one-quarter mile of an existing or proposed school site. The proposed Project is not expected to impact school sites from handling hazardous materials or wastes. Hazardous emissions impacts on sensitive receptors, including schools, are included in the health risk assessment evaluated as part of the air quality analysis (see Section 3).

8. d) CEQA §21092.6 requires the lead agency to consult the lists compiled pursuant to §65962.5 of the Government Code to determine whether the project and any alternatives are located on a site which is included on such list. In 1985, the Regional Water Quality Control Board (RWQCB) adopted Order 85-17 requiring Ultramar (Valero acquired the Refinery from Ultramar) and 14 other local refineries to conduct subsurface investigations of soil and ground water. As a result of the subsurface investigations of soil and ground water, the Refinery was eventually included on a list §65962.5 compiled by the California Environmental Protection Agency (CalEPA) and dated May 6, 1999. The Refinery is listed on the May 6, 1999 list because it is on a list of Cleanup and Abatement Orders prepared by the State Water Resources

Control Board (Order No. 97-118). For sites which are listed pursuant to Government Code Section 65962.5, the following information is requested:

Applicant:	Ultramar Refinery (also called the Valero Refinery)
Address:	2402 Anaheim Street, Wilmington, California 90744
Phone:	(562) 491-6877
Address of Site:	2402 Anaheim Street, Wilmington, California 90744
Local Agency:	Wilmington, City of Los Angeles
Assessor's Book:	7440-2-20,22
List:	Cleanup and Abatement Order
Regulatory ID No:	4B192023NO6
Date of List:	May 6, 1999

The proposed Project is not expected to adversely affect the Refinery's Cleanup and Abatement Order because the area where the Cogen Unit would be located has no known soil contamination and would not use or affect ground water beneath the site. The Order would remain in effect and continue to establish requirements for site monitoring and cleanup of existing contamination.

8. e) The proposed Project site is not located within an airport land use plan or within two miles of a public or private use airport. Therefore, no safety hazards or people residing or working within two miles of an airport would be affected by the proposed Project.

8. f) The proposed Project would not impair implementation or physically interfere with an emergency response plan or emergency evacuation plan. The proposed Project would result in modifications to the existing Refinery. All construction activities would occur within the confines of the existing Refinery so no emergency response plans at other facilities would be impacted. The Refinery has prepared, adopted, and implemented emergency response plans at its facility. Modifications to include the Cogen Unit in the plans are expected as a result of the proposed Project. However, the proposed Project is not expected to alter the route that employees would take to evacuate the site, as the evacuation routes generally direct employees outside of the main operating portions of the Refinery and, because of its location adjacent to the southwest boundary of the Refinery, the new Cogen Unit does not alter the roadways within the Refinery.

8. g) The proposed Project would not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees. The proposed Project does not expose people or structures to wildland fires. Further, the proposed Project is not located in an area where residences are intermixed with wildlands. No substantial or native vegetation exists within the operational portions of the Refinery. Therefore, the proposed Project would not impact people or structures due to fire hazards from wildland fires.

8.3 Mitigation Measures

The effects of an accidental release of hazardous material being stored, used, or transported from the proposed Project is expected to be less than significant. As a result, potential hazard impacts are not considered to be significant. Therefore, no mitigation is necessary or proposed.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
9.0	**HYDROLOGY AND WATER QUALITY.** Would the project:				
a)	Violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality?	☐	☐	☐	☑
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☑	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site?	☐	☐	☑	☐
d)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☑	☐
e)	Place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, which would impede or redirect flood flows?	☐	☐	☐	☑

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
f)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow?	☐	☐	☑	☐
g)	Require or result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☑	☐
h)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☑	☐
i)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☑	☐

9.1 Significance Criteria

Potential impacts on water resources will be considered significant if any of the following criteria apply:

Water Quality:

The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.

The project will cause the degradation of surface water substantially affecting current or future uses.

The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.

The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.

The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.

The project results in alterations to the course or flow of floodwaters.

Water Demand:

The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use a substantial amount of potable water.

The project increases demand for water by more than five million gallons per day.

9.2 Environmental Setting and Impacts

9. a), g), and i) Wastewater Generation

The Refinery currently discharges an average of 900,000 gpd of wastewater. Ultramar's current Industrial Wastewater Discharge Permit allows discharge of 1,076,000 gpd. The proposed Project is expected to increase the wastewater discharge from the Refinery by a maximum of 26,200 gpd to humidify air to the Cogen Unit and make-up water from steam condensate (based on the Ultramar-provided engineering estimate of approximately 18.2 gallons per minute (gpm)). The Refinery has the ability to handle the increase in wastewater without changes to the wastewater treatment system or the need for new wastewater treatment facilities. The wastewater associated with the proposed Project would be within the existing Industrial Wastewater Discharge Permit, so no modifications to this permit would be necessary. Therefore, because the additional wastewater produced would be within existing permitted limits, the increased amount of wastewater discharged as a result of implementing the proposed Project would not exceed the capacity of the existing wastewater treatment facilities or the sewer system.

The Refinery maintains onsite wastewater treatment equipment. Wastewater from the Refinery is treated and sampled in compliance with the Los Angeles County Sanitation Districts (LACSD) Industrial Wastewater Discharge Permit. The LACSD places limitations on wastewater parameters including oil and grease, pH, temperature, heavy metals, organic compounds and so forth. Wastewater that complies with the LACSD permit requirements is discharged to the sewer. Wastewater that does not comply is returned to the onsite wastewater treatment equipment for further treatment. Wastewater would continue to be discharged in compliance with the LACSD Industrial Wastewater Discharge permit so no significant wastewater impacts are expected from the proposed Project.

Pursuant to the RWQCB Order No. 85-17, a groundwater monitoring program was implemented in 1985 to evaluate groundwater quality at and in the vicinity of the Refinery. Groundwater monitoring consists of a network of monitoring wells, which includes wells located within and down gradient of the Refinery. Of the 21 groundwater monitoring wells located within the

Refinery, the nearest well is located approximately 25 feet southeast of the proposed Cogen Unit location. Previous groundwater contamination has been identified at the Refinery and recent groundwater monitoring results indicate that groundwater contamination still exists. The Refinery has, and continues to implement hydrocarbon removal and recovery activities for groundwater.

Construction activities to install new foundations could uncover contaminated soils, given the heavily industrialized nature of the Refinery and the fact that refining activities, petroleum storage and distribution, have been conducted at the site for a number of years. Currently, there is no evidence that soil contamination is located within the areas proposed for grading, trenching, or excavation. The excavation activities at the Refinery are anticipated to remove about 300 - 500 cubic yards of soil.

Contaminated soil found during previous construction activities has generally not been considered hazardous waste. If contaminated soils are encountered, it is not expected that the removal of the soil would impact ground water as the excavation for the foundations is not expected to be very deep (i.e., less than four feet below the surface) with ground water located greater than twelve feet below the surface. Excavated soils that contain concentrations of certain substances, including heavy metals and hydrocarbons, generally are regulated under California hazardous waste regulations. No significant impacts are expected from the construction-related potential for encountering contaminated soils during excavation since there are numerous local, state (Title 22 of the California Code of Regulations) and federal rules which regulate the handling, transportation, and ultimate disposition of contaminated soils.

Storm Water Drainage Systems

The proposed Project would be built within the confines of the existing Refinery, which is equipped with a storm water management system. Changes would be required to the Refinery's storm water collection system since a new unit would be added as part of the proposed Project. The proposed Project area is currently unpaved and covered with gravel to prevent fugitive dust emissions. The proposed Project would require paving 75 percent of the proposed Project area. Most of the approximately 20,000 square feet needed for grading would be converted to impermeable surfaces with 15,000 square feet remaining unpaved following completion of the proposed Project. The foundations for the new unit would be sloped and graded to control surface water runoff. Storm water runoff within the Cogen Unit would be handled in the Refinery oily wastewater system and sent to the on-site wastewater treatment system prior to discharge to the LACSD system. The surface water runoff is expected to be handled within the current wastewater treatment system. Therefore, although some modifications would be made to the storm water collection system in the vicinity of the Cogen Unit, no modifications to the existing or onsite or off-site storm water drainage treatment systems are expected as a result of the proposed Project.

9. b) and h) Water Demand

Potable water is supplied to the Refinery by the LADWP. The Refinery is located in the LADWP's Harbor Area Water Service District and all potable water in the area is purchased by the LADWP from the Metropolitan Water District. Potable water currently enters the Refinery via a ten-inch fire service line that stems off a 12-inch main line. The Refinery currently uses about 936,000 gallons of potable water per day. This water is used in many of the refining processes at the facility including crude desalting, cooling towers, and steam generation.

The proposed Project is expected to increase operational water demand by not more than 26,200 gpd based on the engineering estimate of approximately 18.2 gpm to humidify inlet air to the Cogen Unit and make-up water from steam condensate. The potential increase water demand is below the SCAQMD's significance threshold of 262,820 gpd of potable water. Therefore the impacts on water demand are not considered significant.

Based on grading area (approximately 20,000 square feet) with the existing Refinery where roads are paved, less than 500 gpd of water may be required during the construction phase for dust control, which would not exceed the SCAQMD's water demand significance threshold of 262,820 gpd of potable water. The water use would be minor and would cease following the construction phase. The construction phase is not expected to generate additional wastewater at the Refinery.

9. c) and d) Surface Water

The Refinery is located immediately east of the Dominguez Channel, less than one-half mile north of the Cerritos Channel and approximately 1.3 miles west of the Los Angeles River. The Los Angeles River and the Dominguez Channel are the major drainages that flow into the Los Angeles-Long Beach Harbor complex. Regional drainage with sediments and contaminants are transported into the harbor with the flows from the Los Angeles River and, to a lesser degree, the Dominguez Channel.

The Los Angeles River drains an 824-square mile watershed basin and enters Long Beach Harbor approximately 2.2 miles east of the proposed Project. The Los Angeles River watershed is controlled by a series of dams and an improved river channel with a design flow capacity of 146,000 cubic feet per second.

The Dominguez Channel originates in the area of the Los Angeles International Airport and flows southward into the East Channel of the Los Angeles Harbor. The Dominguez Channel, an 8.5-mile long structure, drains approximately 80 square miles west of the Los Angeles River drainage basin. Permitted discharges from industrial sources are a substantial percentage of the persistent flows in the Dominguez Channel. Water quality objectives and beneficial uses for the Dominguez Channel tidal prism have been established by the RWQCB, Los Angeles Region, in the Water Quality Control Plan for the Los Angeles River Basin (LARWQCB, *2008* ~~2004~~).

The proposed Project construction activities would comply with applicable rules and regulations to prevent uncontrolled surface water runoff and water quality contamination. Runoff from

construction sites would be controlled under a construction Storm Water Pollution Prevention Plan (SWPPP) prepared in accordance with the NPDES General Construction Activities Storm Water Permit Requirements and implemented prior to the start of any construction activities. In the Los Angeles area, the General Construction Activities Storm Water Permit is administered by the Regional Water Quality Control Board under Order 2010-0014-DWQ which was approved by the State Water Resources Control Board (SWRCB) on July 1, 2010, with oversight by U.S. EPA. A Notice of Intent to be covered under the general permit and appropriate fee is submitted to the SWRCB in accordance with construction General Permit conditions. Ultramar would file a Notice of Intent for the proposed Project to be permitted under the General Construction Activities Storm Water Permit. The General Construction Activities Storm Water Permit requires the development and implementation of a SWPPP that sets forth 1) the Best Management Practices (BMPs) the discharger would be required to use to protect the water quality of storm water runoff and 2) monitoring programs to verify effectiveness of the BMPs. This permit would include substantial and enforceable requirements to ensure that storm water runoff from construction does not include pollutants that could cause a significant water quality impact including:

- A permit application and payment of fees for permit administration;
- Requirements for implementation of a SWPPP developed by a qualified person that demonstrates compliance with all requirements of the State's General Construction NPDES Permit;
- Requirements for accountability and training of responsible individuals to develop the SWPPP and to implement the BMPs and other measures therein;
- Identification of potential pollutant sources and implementation of structural and non-structural BMPs to control spills, leaks, dumping, and to prevent illicit connections during construction;
- Development and implementation of a Rain Event Action Plan to be implemented year-round (even during the dry season) to ensure that active construction areas have adequate erosion and sedimentation controls implemented prior to the onset of a rainstorm;
- Prohibitions on certain discharges not allowed under the permit including unpermitted non-storm water discharges unless authorized under another NPDES Permit;
- Prohibition of any discharge containing a hazardous substance in excess of reportable quantities established in 40 CFR Section 117.3 and 302.4 unless authorized under another NPDES Permit;
- Prohibition on discharge of any trash, plastic or other debris from construction sites;
- Determination of site-specific risk levels and required levels of monitoring;
- Numeric effluent limitations and effluent monitoring for pH and turbidity;
- Compliance with all applicable water quality standards including Total Maximum Daily Loads and other Basin Plan limits;
- Visual monitoring before, during and after qualifying rainstorms;
- Maintenance of monitoring records onsite during construction and for a minimum of three years;
- Performance standards for post-construction surface stabilization;
- Allowance for inspections and enforcement by the RWQCB;
- Reporting of violations and annual reporting to the RWQCB; and
- Designation of parties legally responsible for compliance with the permit.

To obtain grading permits for the Refinery, the applicant would be required to submit a Standard Urban Storm Water Mitigation Plan (SUSWMP), under the requirements of Section 64.70 of the City of Los Angeles municipal code. The SUSWMP would be subject to City of Los Angeles review and approval in conjunction with processing the grading permit applications. The Storm Water Ordinance makes it unlawful to dump pollutants in the City's storm drain system and provides inspection and enforcement authority as well as development planning oversight. Construction activities in compliance with NPDES and SUSWMP requirements would not create pollution, contamination or nuisance; would not result in substantial additional sources of polluted runoff; would not violate any permit or waste discharge requirements; would not violate water quality standards or other regulatory standards; would not result in an increased level of ground water contamination; and would not otherwise substantially degrade water quality.

As discussed under topic 9.a), g) and i), changes would be required to the Refinery's storm water collection system since a new unit would be added as part of to the proposed Project. The proposed Project area is currently unpaved and covered with gravel to prevent fugitive dust emissions. The proposed Project would require paving 75 percent of the proposed Project area. Most of the approximately 20,000 square feet needed for grading would be converted to impermeable surfaces with 15,000 square feet remaining unpaved following completion of the proposed Project. The foundations for the new unit would be sloped and graded to control surface water runoff. Storm water runoff within the Cogen Unit would be handled in the Refinery oily wastewater system and sent to the on-site wastewater treatment system prior to discharge to the LACSD system. The surface water runoff is expected to be handled within the current wastewater treatment system. Storm water from components of the proposed Project would be managed under the Refinery's Storm Water Pollution Prevention Plan. Non-process area, uncontaminated storm water is collected in a separate system and discharged to the storm water system operated by the Port of Long Beach for ultimate discharge to the Cerritos Channel.

Based on the above information significant adverse surface water impacts are anticipated as a result of changes to surface water runoff are expected due to the proposed Project. The proposed Project would be constructed within the currently developed Refinery boundaries. Runoff from the new and modified facilities would be handled in the existing surface water treatment systems. Runoff would be collected, treated (if applicable), and discharged under the requirements of the existing storm water permit, NPDES permit or the Industrial Wastewater Discharge Permit. Because the topography of the site would remain unchanged during operation, the proposed Project is expected to result in a minor increase in the surface water runoff due to the increase in paved areas associated with the proposed Project. The increase is expected to be nominal, would only occur within the Refinery boundaries, and can be handled in the existing storm water system. Therefore, no significant adverse impacts are expected to result from water runoff associated with the proposed Project.

9. e) and f) Flooding Hazards

The proposed Project involves the construction of a new unit within an existing Refinery and does not include the construction of any housing, nor would it require placing housing within a 100-year flood hazard area. The Refinery is currently located within a 100-year flood hazard area, so no new flood hazards would be created. Further because of its location surrounded by

other structures, the Cogen Unit would not impede or redirect 100-year flood flows. The proposed Project is located within an existing Refinery and no new employees are required. Therefore, the proposed Project would not expose people to any new known flood-related hazards.

There are no open ponds at the site so that the potential for seiching is considered to be less than significant. The proposed Project at the Refinery is located within a Tsunami Inundation Zone as mapped by the California Emergency Management Agency (CalEMA, 2009). Even though the proposed Project is within a defined Tsunami Inundation Zone, the risk of exposure of people or structures to an ocean seiche or tsunami is considered low, as onshore structures including the proposed Project structures are protected by the Port breakwaters. Because the entire Refinery is located on relatively flat land, most of the area is paved, and there are no nearby hills or other high elevation areas, the potential for mudslides is extremely small. As with flood risk impacts, the Refinery is an existing facility and no new employees would be required to operate the new and modified equipment. As a result, the proposed Project would not expose people to any new seiches, tsunami, or mud flow impacts. Therefore, no significant impacts associated with seiches, tsunamis, or mud flows are expected.

9.3 Mitigation Measures

No significant adverse impacts from the proposed Project on hydrology and water quality are expected, therefore, no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
10.0 LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☑
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

10.1 Significance Criteria

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by the City of Riverside.

10.2 Environmental Setting and Impacts

10. a) The proposed Project would occur entirely within the boundaries of the existing Refinery and, therefore, would not disrupt or divide an established community.

10. b) The Refinery is located in the Wilmington District of the City of Los Angeles within southern Los Angeles County. The community of Wilmington is generally urbanized and includes a substantial amount of industrial and port-related development. The Ports of Los Angeles and Long Beach are located along the coastal boundary of Wilmington.

The Wilmington area is bordered by the Harbor Freeway (Interstate 110) on the west, the Long Beach Freeway (Interstate 710) on the east, the San Diego Freeway (Interstate 405) on the north, and the Pacific Ocean on the south. The Dominguez Channel runs adjacent to the Refinery from the north to the south. Railroad tracks service the area along the western boundary of the Refinery and along Anaheim Street.

The proposed Project would be consistent with the zoning for the Refinery (M3-1) and with the Wilmington-Harbor City Plan (City of Los Angeles, 1999). All proposed modifications would occur within the confines of the existing Refinery.

The Refinery is located within the California Coastal Zone and, therefore, is also regulated by the California Coastal Commission. The proposed modifications at the Refinery are expected to require the issuance of either a Coastal Development Permit or a de minimus waiver to assure that the proposed Project would comply with the coastal protection requirements of the

California Coastal Act. The California Coastal Commission in the past has reviewed development at the Ultramar Refinery and has issued coastal development permits and de minimus waivers (minor development projects which did not require a Coastal Development Permit). For each Coastal Development Permit at the Refinery, the Commission found the proposed Refinery development to be consistent with the goals and policies of the California Coastal Act. The proposed Project development is similar to past development that the California Coastal Commission has approved in previous permit actions. The proposed Refinery development would not impede or otherwise adversely impact recreation or other coastal uses. The heavily industrial character of the general area and the extensive port development has eliminated or greatly reduced most traditional coastal recreation opportunities in the vicinity of the Refinery. Therefore, the proposed Project is consistent with current Port activities and industrial development, so it is consistent with the goals and policies of the California Coastal Act for the Port area and is not expected to have significant adverse impacts on coastal resources.

10.3 Mitigation Measures

No significant adverse impacts from the proposed Project on land use and planning are expected, therefore, no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
11.0 MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☑

11.1 Significance Criteria

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

> The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
>
> The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

11.2 Environmental Setting and Impacts

11. a), and b) The only mineral resource in the vicinity of the Refinery of regional or local value is the production of oil from the Wilmington oil field. While much of the oil production for this field has been decommissioned, limited production facilities remain in the vicinity of the Refinery. According to DOGGR, as of 2009, there were only 12 oil production facilities currently extracting oil from the Wilmington Oil Field (DOGGR, 2010). None of these production facilities would be affected by the proposed Project in any way because the proposed Project does not involve extracting oil from the Wilmington Oil Field, so no significant adverse impacts are expected.

11.3 Mitigation Measures

No significant adverse impacts from the proposed Project on mineral resources are expected, therefore, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
12.0	**NOISE.** Would the project result in:				
a)	Exposure of persons to or generation of permanent noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑	☐
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐
c)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☑	☐
d)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☑	☐

12.1 Significance Criteria

Impacts on noise will be considered significant if:

Construction noise levels exceed the City of Los Angeles noise ordinance or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal OSHA noise standards for workers.

The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

The proposed project equipment will generate noise greater than 90 decibels (dB) at the property line.

12.2 Environmental Setting and Impacts

12. a), and c) The vicinity of the proposed Project is an urban environment characterized by extensive industrial, commercial and transportation-related land uses. The Refinery is surrounded by industrial facilities, commercial activities, and transportation corridors. Major contributors to the ambient noise levels in the general vicinity of the Refinery include the following:

- The local railways which run along the northern and western boundaries of the Refinery;
- Vehicular traffic on the Terminal Island Freeway, Henry Ford Avenue, and Anaheim Street, especially the large number of trucks that use these arterials into and out of the Port area;
- The industrial facilities which include in addition to the Refinery, a hydrogen plant, a coke calcining facility, a cogeneration plant, container facilities, automobile import facilities, other refineries, and automobile wrecking/dismantling operations; and,
- The numerous Port-related activities such as marine vessel traffic and loading/unloading of cargo.

Traffic, both vehicular and railroad, is a major source of noise in the area. The Terminal Island Freeway is a major noise source at the site since it is elevated above most structures and buildings; therefore, the noise is not attenuated as quickly as noise generated at ground level. The estimated noise level 50 feet from the Terminal Island Freeway is about 70 dBA. The Dominguez Channel and elevated railroad tracks that form the Alameda Corridor are located immediately west of the Refinery (and west of the proposed Cogeneration Unit). The adjacent railroad traffic is a source of noise and vibration in the Wilmington area. Noise sensitive land uses are not located in the vicinity of the Refinery. The closest residential area is approximately 0.5 mile northwest of the Refinery.

Noise readings taken at the Refinery property boundaries indicate that ambient noise levels are generally below the City of Los Angeles noise limits of 70 dBA and acceptable for industrial zoned areas. Noise levels adjacent to the Refinery generally range from 60 to 70 dBA (SCAQMD, 2004). Noise levels measured near Anaheim Street (north) and Henry Ford Avenue (west) tend to be higher than noise levels along Pier B Street (east and south). Traffic contributes to the higher noise readings along Anaheim Street and Henry Ford Avenue (SCAQMD, 2004).

Noise regulations applicable to activities in the City of Los Angeles are contained in the City of Los Angeles Municipal Code. Section 41.40 of the code establishes times when construction work cannot be performed. The Municipal Code section states the following:

> *(a) No person shall between the hours of 9:00 P.M. and 7:00 A.M. of the following day perform any construction or repair work of any kind upon or any excavating for, any building or structure, where any of the foregoing entails the use of any power-driven*

> *drill, driven machine, excavator, or any other machine, tool, device, or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling, hotel, or apartment or other place of residence. In addition, the operation, repair or servicing of construction equipment and the jobsite delivering of construction materials in such areas shall be prohibited during the hours herein specified. Any person who knowingly and willfully violates the foregoing provision shall be deemed guilty of a misdemeanor punishable as elsewhere provided in this code.*

Chapter 11 of the City of Los Angeles Municipal Code also sets forth noise regulations. The applicable section regarding construction noise is § 112.05, which establishes maximum noise levels for powered equipment or powered hand tools. This section states:

> *Between the hours of 7:00 A.M. and 10:00 P.M. in any residential zone of the City or within 500 ft thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 ft there from (a) 75 dB(A) for construction, industrial and agricultural machinery including crawler tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, depressors, and pneumatic or other powered equipment; (b) 75 dB(A) for powered equipment of 20 horsepower or less intended for infrequent use in residential areas including chain saws, log chippers, and powered hand tools; and (c) 65 dB(A) for powered equipment intended for repetitive use in residential areas including lawn mowers, backpack mowers, small lawn and garden tools, and riding tractors.*
>
> *The noise limits for particular equipment listed above in (a), (b), and (c) shall be deemed to be superseded and replaced by noise limits for such equipment from and after their establishment by final regulations adopted by the Federal Environmental Protection Agency and published in the Federal Register. Said noise limitations shall not apply where compliance therewith is technically infeasible. The burden of proving that compliance is technically infeasible shall be upon the person or persons charged with a violation of this section. Technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or other noise reduction device and techniques during the operation of the equipment.*

Construction activity for the proposed Project would generate noise associated with the use of heavy construction equipment and construction-related traffic. The construction equipment at the Refinery would include welding machines, trucks, cranes, loaders, graders, and pavers. Examples of noise levels from construction equipment are presented in Table 2-13. These noise sources would operate during the daytime and would be a source of noise during the construction period. Construction activities will avoid the nighttime hours of 9:00 p.m. to 7:00 a.m., even though Ultramar is located in an industrial area and not a residential area.

TABLE 2-13

Construction Noise Sources

EQUIPMENT	TYPICAL RANGE (decibels)[1]	ANALYSIS VALUE (decibels)[2]
Truck	82-95	82
Front Loader	73-86	82
Pumps	68-72	70
Generators	71-83	81
Scrapers, Graders	80-93	80
Pavers	85-88	85
Cranes	75-89	83

1. City of Los Angeles, *2006*. Typical range levels are in dBA at 50-foot reference distance. These values are based on a range of equipment and operating conditions.
2. Analysis values are intended to reflect noise levels from equipment in good conditions, with appropriate mufflers, air intake silencers, etc.

The estimated noise level during equipment installation at the Refinery is expected to be a maximum of about 85 dBA at 50 feet from the center of construction activity. The construction activities would be located near the western edge of the Refinery as shown in Figure 1-3. Using an estimated six dBA reduction for every doubling of distance, the noise levels at the closest offsite receptor (an adjacent hydrogen plant) would be about 66 dBA (see Appendix E for noise calculations). Noise attenuation due to existing structures has not been included in the analysis. The construction noise levels of 66 dBA are in the same range as existing noise levels of 60 to 70 dBA and are not expected to be noticeable to the adjacent offsite industrial receptors. Further, a noise level of 67 dBA would be less than the 75 dBA noise limits in the City of Los Angeles municipal code.

Noise at the closest sensitive receptor (a residential area, about 0.5 mile northwest of the Refinery) would be about 51 dBA (see Appendix E) and would be less than ambient noise levels. Therefore, the predicted noise levels at the closest sensitive receptor would not increase by three dBA or more and would be considered less than significant per the noise significance criteria used by the SCAQMD. Further, the construction activities at the Refinery would be carried out during daytime from Monday to Friday and would cease following the completion of construction activities. Therefore, noise from construction activities would not impact a noise sensitive use between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. Saturday, or anytime on Sunday. Therefore, noise impacts from construction activities are considered to be less than significant.

Once construction of the proposed Project is complete, operation of the new Cogen Unit would begin, which would generate a maximum noise of 85 dBA at 25 feet from the unit. Assuming an estimated six dBA reduction for every doubling distance, noise levels at the closest industrial receptor (an adjacent hydrogen plant) would be reduced to an estimated 61 dBA, which generally is less than existing noise levels of 60 to 70 dBA. The nearest sensitive receptor is approximately 0.5 mile northwest of the Refinery. Therefore, noise levels at the closest sensitive receptor would be about 46 dBA, which is below ambient noise levels (see Appendix E for noise

calculations). Therefore, the new Cogen Unit is not expected to produce noise in excess of the City of Los Angeles noise limits, so that no increase in noise is expected due to project operation and the operational noise increases are less than significant.

12. b) Groundborne Vibration

Construction of the proposed Project would involve equipment and activities that may have the potential to generate groundborne vibration. In general, demolition of structures during construction generates the highest levels of vibration; however,the proposed Project would not involve demolition of structures as there are none located at the proposed Project location. The Federal Transit Administration (FTA) has published standard vibration levels and peak particle velocities for construction equipment operations (FTA, 2006). The approximate velocity level and peak particle velocities for large construction equipment are listed in Table 2-14. Ground-borne vibration is quantified in terms of decibels, since that scale compresses the range of numbers required to describe the oscillations. The FTA uses vibration decibels (abbreviated as VdB) to measure and assess vibration amplitude. In the United States, vibration is referenced to one micro-inch/sec (converted to 25.4 micro-mm/sec in the metric system) and presented in units of VdB. Based on the activities and equipment which would be used during the proposed Project construction phases, the construction equipment source levels are estimated to range between 58 VdB and 100 VdB at a distance of 25 feet.

When analyzing ground-borne vibration, the FTA recommends using an estimated six VdB reduction for every doubling of distance (FTA, 2006). Using the FTA methodology, the ground-borne vibration levels at the closest residential receptor (about 0.5 mile from the Refinery), the VdB would range from 18 to 60 VdB (see Table 2-14 and Appendix E). The predicted vibration during construction activities can be compared to the FTA ground-borne vibration impact level of 72 VdB, which is the level above which human annoyance or interference with vibration-sensitive equipment is expected to occur. Levels of vibration below the FTA ground-borne vibration impact level are considered less than significant by the FTA. Therefore, because the vibration from construction activities is less than the FTA vibration impact level, no significant vibration impacts are expected during the construction period.

The equipment associated with the Cogen Unit is not expected to generate detectable ground-borne vibration during normal operation. Therefore, vibration from operation of the proposed Project is expected to be less than significant and no significant vibration impacts are expected during operation.

12. d) The proposed Project site is not located within an airport land use plan or within two miles of a public or private use airport. Therefore, the proposed Project would not expose people residing or working in the area to noise related to airports.

12.3 Mitigation Measures

No significant adverse impacts from the proposed Project on noise are expected, therefore, no mitigation measures are required.

TABLE 2-14

Construction Vibration Impacts

Equipment	Approximate Peak Particle Velocity at 25 Ft. (inches/second)[(a)]	Approximate Velocity Level at 25 Ft. (VdB) [(a)]	Approximate Velocity Level at Closest Residential Area (VdB)[(b)]	Significant? (Exceeds 72 VdB)(c)
Pile Driver typical	0.644	100	60	NO
Large Bulldozers	0.089	87	47	NO
Loaded Trucks	0.076	86	46	NO
Jackhammer	0.035	79	39	NO
Small Bulldozer	0.003	58	18	NO

(a) Source: FTA, 2006. Data reflects typical vibration level.
(b) Distance to closest off-site receptor. Assumes an estimated six VdB reduction for every doubling of distance per FTA 2006.
(c) FTA Ground-Borne Vibration Impact Level.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
13.0	**POPULATION AND HOUSING.** Would the project:				
a)	Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	☐	☐	☐	☑
b)	Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

13.1 Significance Criteria

The impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

The demand for temporary or permanent housing exceeds the existing supply.

The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

13.2 Environmental Setting and Impacts

13. a) and b) Construction activities at the Refinery would not involve the relocation of individuals, impact housing or commercial facilities, or change the distribution of the population because the proposed Project would occur completely within the boundaries of an existing industrial facility site. The construction work force of approximately 45 workers, which is temporary, is expected to come from the existing labor pool in the southern California area. Additionally, the proposed Project operation is not expected to require new permanent employees at the Refinery as existing employees have experience operating a Cogen Unit and would receive equipment-specific training from the manufacturer prior to equipment startup. Since the proposed Project would occur at an existing industrial facility, displacement of housing of any type is not anticipated. Therefore, construction and operation of the proposed Project is not expected to have a significant adverse impact on population, population distribution, or housing.

13.3 Mitigation Measures

No significant adverse impacts from the proposed Project on population and housing are expected, therefore, no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
14.0 PUBLIC SERVICES. Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
a) Fire protection?	☐	☐	☐	☑
b) Police protection?	☐	☐	☐	☑
c) Schools?	☐	☐	☐	☑
d) Other public facilities?	☐	☐	☐	☑

14.1 Significance Criteria

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

14.2 Environmental Setting and Impacts

14. a) Fire Protection

Neither construction activities nor operation activities are expected to result in an increased need for fire response services as explained here and in the following paragraphs. The Refinery is served by its own emergency response team along with local fire department and other emergency services. The proposed Project would utilize the fire protection services that are available from existing onsite services. Fire-fighting and emergency response personnel and equipment would continue to be maintained and operated at the Refinery. Close coordination with local fire departments and emergency services would also continue.

It is expected that the required fire-water flow requirements for this project would be the same as other portions of the Refinery (9,000 to 12,000 gpm). The Refinery has a total fire-water flow of about 22,000 gpm, including a 60,000 barrel firewater storage tank. Current fire-water flow is expected to be sufficient to handle the proposed Project. Ultramar has over 100 on-site fire

hydrants. The locations of the existing fire hydrants have been approved by the City of Los Angeles Fire Department. The proposed Project is expected to require relocating up to three fire hydrants in the vicinity of the Cogen Unit to within 50 feet of their current locations. The three possible new locations will be approved by the City of Los Angeles Fire Department, prior to relocation.

Existing fire protection at the Refinery includes a Fire Engine that can pump water or foam solution at 3,500 gpm at draft; a 1,500 gpm Squirt with a 75-foot ladder; three Foam Trailers with a foam portioning pump; one 6,000 gpm Trailer Mounted Monitor which can deliver water or foam; three 2,000 gpm Hired Gun Monitors which can deliver water or foam; Foam Tender Trucks with 2,000 gallons of foam capabilities; two 50-gallon Foam Hose Reel Stations within each Refinery unit, each capable of delivering 110 gpm; Sprinkler/Deluge systems within Refinery Units and over hydrocarbon pumps; on-site fire water Hydrants; 20-pound, 150-pound and 300-pound Dry Chemical Extinguishers; fixed Firewater Monitors within process units each capable of delivering a minimum of 500 gpm; and portable fire water monitors within each unit to quickly establish water flow. The on-site foam-making capability at the Refinery is about 9,000 to 10,000 gpm. No new fixed fire-fighting equipment would be necessary for the proposed Project. Fixed equipment is installed in areas of the refinery where large quantities of flammable material are handled or stored. Since the Cogen Unit does not handle or store large quantities of flammable material, only the existing mobile equipment would be needed for fire fighting purposes.

Ultramar maintains an on-site Fire Department/Emergency Response Team composed of 25-29 personnel per shift with fire-fighting, hazardous materials response, high angle/confined space rescue training, and NIMS Incident Command Training. Members of the team receive hands-on fire training, which is sufficient to respond to an incident at the proposed Cogen Unit.

The fire truck access to the Refinery including ingress/egress roads, and fire lanes would not be affected by the proposed Project. All existing fire access points, fire lanes and the locations of fire hydrants have been approved by the City of Los Angeles Fire Department. Currently, there are two ingress/egress points to the Refinery used by contractors and employees. Two additional ingress/egress points exist specifically to provide fire access to the Refinery. These access points allow for adequate overhead space (i.e., not less than 20 feet clear to the sky) and adequate width for off-site fire-fighting equipment to reach the new and existing refinery units. The existing fire lanes are capable of accommodating off-site fire-fighting apparatus and have a minimum width of 28 feet where fire hydrants are installed. Further, the proposed Project would not require the use or storage of any additional flammable materials that could increase the need for fire department services in the event of an accidental fire.

Finally, construction and operation activities include safeguards, monitoring for hazards with equipment designed to detect sources of flammable gases and vapors, written procedures, training, and authorization of equipment used on-site. Further, compliance with state and local fire codes is expected to minimize the need for additional fire protection services. Therefore, no significant impacts are expected because of the existing fire-fighting capabilities at the Refinery.

14. b) Police Protection

The City of Los Angeles Police Department is the responding agency for law enforcement needs in the vicinity of the proposed Project. The proposed Project site is located within the jurisdiction of the City of Los Angeles Police Department's Harbor Division. The Harbor Division Station, located at 2175 John Gibson Boulevard in San Pedro, is approximately four miles from the project site. The station has six to twelve police units available for response, depending on the time of day. Because police units are in the field, response times currently vary depending on the location of the nearest unit.

Construction activities within the confines of the Ultramar Refinery would be monitored by the existing security force permanently stationed at the Refinery 24 hours a day, seven days a week. The security force includes five guards during the day (two at each of the two entrances and one roving guard) and two guards at night (one at the one entrance opened at night and one roving guard). The Refinery is fenced and a 24-hour security force would continue to be maintained. Entry and exit of the construction work force would be monitored so with the existing security force, no additional or altered police protection is expected to be required due to the proposed Project. Similarly, since the proposed Project would not require additional employees to operate new and modified equipment, no changes to the exiting security force would be necessary.

14. c) Schools

Construction activities at the Refinery would not involve the relocation of individuals, impact housing or change the distribution of the population. Since construction workers would likely be drawn from the existing employment pool in southern California, it is unlikely that construction worker children would need to change schools and no new schools would need to be built. No increase in the number of permanent workers is required during operation of the proposed Project. Thus, the proposed Project would not alter existing, or require additional schools.

14. d) Other Public Facilities

No other public service agencies or facilities were identified that could be affected by the proposed Project with the possible exception of public roadways. Construction of the proposed Project is estimated to require a maximum of 45 additional roundtrips per day and one heavy-duty haul truck trip per day during construction. It is expected that existing roadways can accommodate a temporary increase in traffic without construction of new roadways. Similarly, no increase in the number of Ultramar employees is expected due to operation of the proposed Project, and most activities associated with operating the Cogen Unit would occur within the boundaries of the Refinery. Therefore, the proposed Project would not affect the maintenance of public roadways, nor would it create an increase in demand for additional public roadways. Since the proposed Project would not increase the demand for additional public services or facilities, it is not expected to affect service ratios, response times, or other performance objectives.

14.3 Mitigation Measures

No significant adverse impacts from the proposed Project on public services are expected, therefore, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
15.0	**RECREATION.**				
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment or recreational services?	☐	☐	☐	☑

15.1 Significance Criteria

The impacts to recreation will be considered significant if:

The project results in an increased demand for neighborhood or regional parks or other recreational facilities.

The project adversely affects existing recreational opportunities.

15.2 Environmental Setting and Impacts

15. a) The proposed Project would not increase the demand for neighborhood or regional parks, or other recreational facilities in the area since the proposed Project is not expected to increase the local population. At its peak, construction of the proposed Project would require approximately 45 workers, drawn from the local population so there would be no additional use of local parks or other recreational opportunities. Operation of the proposed Project would not require hiring any new employees so no additional use of parks or recreational opportunities are anticipated. Due to the heavy industrialization of the area, there are no recreational opportunities of significance at or in the immediate vicinity of the Refinery.

15. b) For the same reasons given in discussion 15. a), the proposed Project would not include new recreational facilities, require expansion of existing recreational facilities or adversely affect recreational services since it is not expected to increase the local population in any way.

15.3 Mitigation Measures

No significant adverse impacts from the proposed Project on recreation are expected, therefore, no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
16.0	**SOLID/HAZARDOUS WASTE.** Would the project:				
a)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☑	☐
b)	Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	☐	☐	☐	☑

16.1 Significance Criteria

The proposed project impacts on solid/hazardous waste will be considered significant if the following occur:

> The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

16.2 Environmental Setting and Impacts

16. a) It is estimated that the total construction wastes from constructing the proposed Project would be minimal, about 500 - 800 tons, since no major demolition is expected. Solid waste generation and disposal associated with the proposed Project would be limited to soil excavated for foundations (a total of 300 to 500 tons) and general construction debris (a total of 200 to 300 tons). Wastes requiring disposal would be generated and disposed of over about a one-year period. The majority of construction debris, consisting primarily of wood, cardboard, paper, and plastic, would be distributed over the entire 12-month construction period. The daily waste expected to be generated would be one to two tons. Multiple Los Angeles County landfills, including Puente Hills, Savage Canyon, Chiquita Canyon, and Scholl Canyon landfills are available to receive the construction debris. The expected waste of up to two tons per day represents a small percentage of the waste receiving capacity of 22,950 tons per day collectively at the above-named landfills (less than 0.01 percent) (CDRRR, 2011). Therefore, no significant adverse impacts are expected to the existing landfill capacity due to construction of the proposed Project.

The 300 to 500 tons of soil to be excavated for the proposed Project will be properly characterized to determine the necessary disposal method. Any contaminated soil would be transported off-site for treatment and recycling. If contaminated with petroleum hydrocarbons, the soil would be sent a treatment facility, most likely in Azusa, which is permitted to treat 6,500 tons per day. Uncontaminated soil would be transported to a sanitary landfill (e.g., those listed above) to be used for daily cover of the waste refuse. Based on the above, the solid and hazardous waste impacts associated with the construction phase of the proposed Project are not expected to be significant.

The proposed Project would use approximately 600 cubic feet of catalysts in the SCR Unit that would be shipped off-site approximately once every eight to ten years for recycling or disposal. The SCR catalyst is comprised of titanium, tungsten, and vanadium oxide, which have a high economic value and, as such, regenerated when possible. When the catalysts are replaced, the spent catalyst would be characterized to determine if regeneration is feasible. If not, the catalyst would be characterized in accordance with the hazardous waste regulations and disposed of accordingly based upon the waste determination. Small quantities (estimated to be less than ten gallons a month) of oils and lubes would be generated during maintenance of pumps and compressors and handled following the waste management procedures in place at the Refinery. Waste oils are recycled.

There are no hazardous waste disposal sites within the jurisdiction of the SCAQMD. If hazardous wastes are generated from the proposed Project, which would not be reused on-site or recycled off-site, they would be disposed of at a licensed in-state hazardous waste disposal facility. Two such facilities are the Chemical Waste Management Inc., Kettleman Hills facility (King's County) and the Clean Harbors facility in Buttonwillow (Kern County). Based on the 2007 AQMP, Kettleman Hills has an estimated 2.5 million cubic yard capacity and Buttonwillow receives approximately 960 tons of hazardous waste per day with an approximate remaining capacity of nine million cubic yards. Even if all 600 cubic feet of catalyst generated once every eight to ten cannot be regenerated and are characterized as hazardous waste, there would be sufficient hazardous waste capacity at either the Kettleman Hills or Buttonwillow facilities to accommodate disposal at such an infrequent schedule. Therefore, operational activities resulting from this proposed Project are not expected to generate additional hazardous wastes sent for disposal and are not considered significant.

16. b) The Refinery currently complies, and the facilities associated with the proposed Project are expected to continue to comply, with all applicable federal, state, and local regulations related to solid and hazardous wastes.

16.3 Mitigation Measures

No significant impacts to waste disposal generated or disposed of are expected and thus no mitigation measures are required.

		Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
17.0	**TRANSPORTATION/TRAFFIC.** Would the project:				
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☑
b)	Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☑
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☑
d)	Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	☐	☐	☑	☐
e)	Result in inadequate emergency access?	☐	☐	☑	☐
f)	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☑	☐

17.1 Significance Criteria

The impacts on transportation/traffic will be considered significant if any of the following criteria apply:

Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.

An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.

A major roadway is closed to all through traffic, and no alternate route is available.

There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.

The demand for parking facilities is substantially increased.

Water borne, rail car or air traffic is substantially altered.

Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.

17.2 Environmental Setting and Impacts

17. a) and b) Approximately 44 construction workers would be commuting to the Refinery during peak construction activities. All construction workers would be directed to the Refinery for parking since sufficient parking is available in the 200-space construction worker lot at the Refinery, which is expected to be vacant at the onset of construction. Construction workers are expected to arrive at the work sites between 6:30 - 7:00 a.m. and depart at about 5:30 – 6:00 p.m., which would generally avoid peak hour traffic conditions. The construction activities are expected to avoid peak hour traffic during morning hours, between 7 - 8 a.m., but could impact the evening peak hours (between 4-6 p.m.). Construction activities are expected to be limited to about a 12-month period, with the peak construction period limited to about four months. The increase in construction worker traffic in the area is temporary and would cease following the completion of construction activities. The predominant route used to reach the Refinery is from the Long Beach Interstate 710 Freeway at Anaheim Street. Anaheim Street is an east-west, six lane divided roadway that carries about 20,000 to 24,000 vehicles per day (SCAQMD, 2004). The projected increase in traffic during the construction phase of the proposed Project is less than the significance criteria of 350 employees and well below a one percent increase in traffic on the local streets and at the local intersections. For comparison, the estimated increase in construction traffic quantifies in the Final EIR for the Ultramar, Inc. Valero Wilmington Refinery Alkylation Improvement Project (SCAQMD, 2004) was a maximum of 727 cars per day. The LOS analysis indicated that an increase in 727 vehicles a day was less than significant. In addition to construction worker commute trips, the proposed Project would generate a maximum of one additional delivery truck per day to deliver equipment to the site. These delivery trucks are expected to avoid peak hour traffic to minimize the delivery time. Therefore,

the proposed Project's impacts on traffic during the construction phase of the proposed Project are expected to be less than significant.

The permanent work force at the Refinery is not expected to increase as a result of the proposed Project and operation-related traffic is expected to be limited to additional deliveries of aqueous ammonia. An estimated increase of 16 truck trips per year (a maximum of one truck trip per day approximately every three weeks) to transport aqueous ammonia is expected. Therefore, no significant traffic impacts are expected during the operational phase of the proposed Project as one additional truck trip per day approximately every three weeks would not be expected to conflict with plans, ordinances or policies for establishing effective performance of the circulation system or congestion management plans, if applicable.

17. c) The proposed Project includes modifications to existing facilities and new facilities at the existing Refinery. The new structures would be similar in height and appearance to the existing Refinery structures (see 1.0 Aesthetics) and would be shorter than other structures, e.g. coke drums (200 feet tall) and flare stacks (250 feet tall). Consequently, the new structures are not expected to result in a change to air traffic patterns. The nearest airport is located about 10 miles north of the Refinery and the Refinery is outside of the normal flight pattern of this airport. In addition, the proposed Project would not involve the delivery of materials via air so no increase in air traffic is expected.

17. d) and e) The proposed Project is not expected to substantially increase traffic hazards or create incompatible uses at or adjacent to the site. The proposed Project does not include construction of roadways on-site or off-site that could include design hazards. Emergency access at the Refinery would not be impacted by the proposed Project in that no on-site roadways would be altered as a result of the proposed Project and Ultramar would continue to maintain the existing emergency access gates to the Refinery. Therefore, no changes to emergency response plans are expected as a result of the proposed Project.

17. f) The proposed Project would be constructed within the confines of an existing Refinery. Further, the proposed Project would generate on additional truck trip per day approximately every three weeks, so it is not expected to conflict with adopted policies, plans, or programs supporting alternative transportation modes (e.g., bus turnouts, bicycle racks).

17.3 Mitigation Measures

No significant impacts to transportation/traffic are expected and thus no mitigation measures are required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
18.0 MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☐	☑
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	☐	☐	☑	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

Discussion

18. a) The proposed Project does not have the potential to adversely affect the quality of the environment, reduce or eliminate any plant or animal species, or destroy prehistoric records. The proposed Project is located at a site that is part of an existing industrial facility, and does not contain biological resources. The Refinery has been previously disturbed, graded, and developed, and the proposed Project would not extend into environmentally sensitive areas, but would remain within the confines of an existing, operating Refinery. For additional information, see Section 4. – Biological Resources and Section 5. – Cultural Resources.

18. b) The proposed Project is not expected to result in significant adverse cumulative environmental impacts. As discussed in Section 3. c), construction and operational emissions are

not expected to be significant or exceed the SCAQMD regional significance thresholds. The proposed Project's construction emissions were also compared to the SCAQMD LSTs. In all cases, the construction emissions were below the LSTs. Therefore, construction air quality impacts are not considered to be cumulatively considerable as defined in CEQA Guidelines §15064(h)(l). Consequently, cumulative construction air quality impacts are not considered to be significant.

The proposed Project consists of constructing a new Cogen Unit at the Refinery and would comply with the current BACT requirements. The proposed Project would result in emissions increases of VOC, CO, PM10, and PM2.5 from operations, and has been shown in Table 2-5 would have less than significant impacts to air quality when the Cogen Unit is operating and the boilers are operating at reduced capacity. Therefore, no significant adverse air quality impacts are expected, either individually or cumulatively. The proposed Project is not expected to result in significance adverse cumulative impacts.

The proposed Project would result in the addition of a TAC emission source with the installation of the Cogen Unit. A health risk assessment was performed and concluded the proposed Project is not expected to exceed the significance thresholds of 10.0×10^{-6} for carcinogenic risk and 1.0 for chronic and acute non-carcinogenic health risks at any receptor location. Therefore, TAC emissions from the proposed Project are expected to be less than significant. TAC emissions are not considered to be cumulatively considerable as defined in CEQA Guidelines §15064(h)(l). Consequently, cumulative air quality impacts associated with TAC emissions are not considered to be significant.

The proposed Project is not expected to generate significant adverse impacts associated with hazards and hazardous materials as discussed in Section 8. The new connecting natural gas and refinery fuel gas pipelines would have smaller hazard impacts than existing pipelines and would not change the magnitude or location of any existing hazard impacts. Therefore, no significant adverse project-specific increase in hazards is expected, so hazard impacts are not considered to be cumulatively considered as defined in CEQA Guideline §15064(h)(l). Therefore cumulative hazard impacts are concluded to be less than significant.

The construction activities associated with the proposed Project that generate noise would be carried out during daytime hours. A noise impact analysis was performed and is included in Section 12 herein. Because of the nature of the construction activities, the types, number, operation time, and loudness of construction equipment would vary throughout the construction period. As a result, the sound level associated with construction would change as construction progresses. Construction noise sources would be temporary and would cease following construction activities that are expected occur intermittently for one year. Noise levels at the closest residential areas are not expected to increase during construction activities, i.e., background noise levels in residential areas generally are higher than noise from the proposed Project because of the attenuation of noise over distance. The noise levels from the construction equipment are expected to be about 51 dBA at the closest residential areas. Noise and groundborne vibration impacts associated with the proposed Project construction activities are expected to be less than significant. Project-specific noise impacts associated with the proposed Project construction activities are expected to be less than, and in compliance with, the local

noise ordinance and less than significant and, therefore, are not cumulatively considerable as defined in CEQA Guideline §15064(h)(l). Therefore, cumulative noise impacts would be less than significant.

A maximum of 44 construction workers are expected to be required during peak construction activities (approximately four months). Construction activities are temporary and anticipated to be completed within about one year. The proposed Project is not expected to generate significant adverse project-specific traffic impacts as discussed in Section 17. Therefore, cumulative traffic impacts during the construction phase are less than significant. No increase in traffic is expected due to the operation of the proposed Project as no additional workers or one delivery truck per day (up to 16 per year) of aqueous ammonia would be required. Therefore, cumulative traffic impacts during operation of the proposed Project are less than significant.

Where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, a lead agency need not consider the effect significant, but must briefly describe the basis for concluding that the incremental effect is not cumulatively considerable. Therefore the project's contribution to air quality, hazards, noise and traffic and all other environmental topics evaluated in this ND are not cumulatively considerable and thus not significant. This conclusion is consistent with CEQA Guidelines §15064 (h)(4), which states, "The mere existence of cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed Project's incremental effects are cumulatively considerable". Therefore, the proposed Project is not expected to result in significant adverse cumulative impacts.

18. c) The proposed Project would consist of constructing construct a new Cogen Unit at the Refinery, which would be required to comply with the current BACT requirements. The proposed Project emissions of VOC, CO, NOx, SOx, PM10 or PM2.5 from operations would be less than significant, as shown in Table 2-5. The potential health impacts from exposure to TAC emission increases were evaluated in a health risk assessment (see Appendix C). The results of the health risk assessment indicated that the TAC emissions in the vicinity of Refinery would be less than significant. The proposed Project is not expected to increase the potential hazard impacts associated with the operation of the facility and the hazard impacts were determined to be less than significant. Therefore, no significant health impacts or other adverse impacts to humans are expected due to operation of the proposed Project.

REFERENCES

California Air Resource Board (CARB), 2005. Hotspots Analysis and Reporting Program (Revision 1.4d, Build 23.09.07). http://www.arb.ca.gov/toxics/harp/downloads.htm

CARB/Office of Environmental Health Hazard Assessment (OEHHA), 2003. Air Resources Board Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk. http://www.arb.ca.gov/toxics/harp/docs/rmpolicy.pdf

CalEMA, 2009. Tsunami Inundation Map for Emergency Planning, March 1, 2009. http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/LosAngeles/Documents/Tsunami_Inundation_LongBeach_Quad_LosAngeles.pdf

California Emissions Estimator Model (CalEEMod), 2011. User's Guide Version 2011.1. http://www.aqmd.gov/caleemod/doc/UsersGuide.pdf (accessed June 5, 2013).

California Energy Commission (CEC), 2011 – Retail Gasoline Sales by County. http://energyalmanac.ca.gov/gasoline/retail_fuel_outlet_survey/retail_gasoline_sales_by_county.html

California Energy Commission (CEC), 2011a – Retail Diesel Sales by County. http://energyalmanac.ca.gov/gasoline/retail_fuel_outlet_survey/retail_diesel_sales_by_county.html

~~California Energy Commission, 1998 Baseline Energy Outlook, CEC Staff Report. www.energy.ca.gov~~

~~California Energy Commission, California Energy Demand 2002-2012 Forecast. Attachment A. www.energy.ca.gov~~

~~CEC, December 2002. California Natural Gas Consumption – 2000. http://www.energy.ca.gov/naturalgas/consumption.html~~

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR), 2010. 2009 Annual Report of the State Oil and Gas Supervisor. ftp://ftp.consrv.ca.gov/pub/oil/annual_reports/2009/PR06_Annual_2009.pdf.

California Department of Resources, Recycling, and Recovery (CDRRR), 2011. Solid waste Information System Database, http://www.calrecycle.ca.gov/SWFacilities/Firectory/, Search for Los Angeles County Active Landfills, March 2011.

California Division of Mines and Geology *(CDMG)*, Map of Seismic Hazard Zones, March 19, 1999.

Chu, 2012. Telecommunication with Maraget Chu, CARB, 916-323-6501, mmchu@arb.ca.gov, October 17, 2012.

Federal Motor Carrier Safety Administration (FMCSA), 2001. Comparative Risks of Hazardous Materials and Non-Hazardous Materials Truck Shipment Accidents/Incidents. Prepared by Battelle, March 2001.

Federal Transit Administration, 2006. Transit Noise and Vibration Impact Assessment. Office of Planning and Environment, Federal Transit Administration, FTA-VA-90-1003-06, May 2006.

~~Jones, L.M. and E. Hauksson, 1986. Evaluation of Earthquake Potential in Southern California. In Future Directions Evaluating Earthquake Hazards in Southern California, ed. W.M. Brown, III, W.J. Kockelman, and J.I. Ziony. U.S. Geological Survey Open File Report 86-401.~~

Los Angeles, City of, 1999. Wilmington-Harbor City Community Plan, A Part of the City of Los Angeles, General Plan, July 1999. http://www.lacity.org/PLN/complan/westla/wlmpage.htm.

Los Angeles, City of, *2006* ~~1998~~. L.A. CEQA Thresholds Guide, City of Los Angeles, *2006* ~~May 14, 1998~~. *http://www.ci.la.ca.us/ead/programs/Thresholds/Complete Threshold Guide 2006.pdf* ~~http://www.lacity.org/EAD/EADWeb-AQD/thresholdsguide.htm .~~

Los Angeles, City of, 2011. Initial Study for the Wilmington Infrastructure Project.

~~LACDPW, 2006. County of Los Angeles Jurisdiction, Annual Disposal Summary Reports, Facilities Monthly Disposal Report, Reporting Period: Year 2005. http://dpwprod3.co.la.ca.us/swims/download/rpt_2006418_152320__14.pdf~~

~~LADPW, 2006. 2006 Integrated Resource Plan: Appendix B, May 2006. http://www.ladwp.com/ladwp/cms/ladwp008065.pdf~~

~~LARWQCB, 2004. Watershed Management Initiative, October 2004. http://www.swreb.ca.gov/rwqcb4/html/programs/regional_programs.html#Watershed~~

LARWQCB, 2008. Final: The Dominguez Channel and Los Angeles/Long Beach Harbors Watershed Management Area, October 2008. http://www.waterboards.ca.gov/rwqcb4/water_issues/programs/regional_program/wmi/dominguez_channelWMA/final_state_dominguez_channel.pdf

Occupational Safety and Health Administration (OSHA), 2007. OSHA Safety and Health Topics: Ammonia Refrigeration, http://www.osha.gov/SLTC/ammoniarefrigeration/index.html

OEHHA, 2003. Air Toxics Hot Spots Program Risk Assessment` Guidelines: The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessment, August 2003.

~~Southern California Association of Governments (SCAG), 2000. 1999 State of the Commute Report. SCAG, Southern California Rideshare, July 2000. www.scag.ca.gov/publications/pdf1999%20State%20of%20commute%20Report.pdf.~~

SCAQMD, 1993. CEQA Air Quality Handbook, SCAQMD, May 1993.

~~SCAQMD, 2000. The Magnitude of Ambient Air Toxics Impacts from Existing Sources (MATES) in the South Coast Air Basin.~~

SCAQMD, 2003. Final Environmental Assessment for Proposed Rule 1105.1 – Reduction of PM10 and Ammonia Emissions from Fluid Catalytic Cracking Units. http://www.aqmd.gov/ceqa/documents/2003

SCAQMD, 2004. Final Environmental Impact Report, Ultramar Inc., Valero Wilmington Refinery Alkylation Improvement Project, SCH No. 20030536, December 2004. http://www.aqmd.gov/ceqa/documents/2004/nonaqmd/valero/final/valero_FEIR.html

SCAQMD, 2006. Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 CEQA Significance Thresholds, SCAQMD, October 2006, *www.aqmd.gov/ceqa/handbook/PM2_5/finalmeth.doc* ~~https://www.aqmd.gov/ceqa/handbook/PM2_5/pm2_5ratio.xls~~

SCAQMD, 2007. 2007 Air Quality Management Plan. *http://www.aqmd.gov/aqmp/07aqmp/* ~~http://www.aqmd.gov/ceqa/documents/2003/aqmd/finalEA/aqmp/AQMP_FEIR.html.~~

SCAQMD, 2009. Final Localized Significance Threshold Methodology. http://www.aqmd.gov/ceqa/handbook/lst/Method_final.pdf & http://www.aqmd.gov/ceqa/handbook/lst/appC.pdf

~~SCAQMD, 2010. 2010 Air Quality. South Coast Air Quality Management District. June 29, 2012. http://www.aqmd.gov/smog/historical/AQ10card.pdf.~~

SCAQMD, 2011. Air Quality Analysis Handbook. http://aqmd.gov/ceqa/hdbk.html, accessed in 2011 & http://aqmd.gov/ceqa/handbook/mitigation/fugitive/Dust_MM_Overview.pdf

SCAQMD, 2011a. SCAQMD Supplemental Guidelines for Preparing Risk Assessment for AB2588, June 2011.

SCEC, 2010. Southern California Earthquake Center, Uniform California Earthquake Rupture Forecast, http://www.scec.org/ucerf/, Figure 4 (http://www.scec.org/core/public/sceccontext.php/3935/13664), 2010.

Tinsley, J.C., T.L Youd, D.M. Perkins, and A.T.F. Chen, 1985. Evaluating Liquefaction Potential. In Evaluating Earthquake Hazards in the Los Angeles Region – An Earth-Science Perspective, ed. J.I. Ziony. U.S. Geological Survey Professional Paper No. 1360.

ACRONYMS

ABBREVIATION	DESCRIPTION
AQMP	Air Quality Management Plan
API	American Petroleum Institute
BACT	Best Available Control Technology
CalEMA	California Emergency Management Agency
CalEPA	California Environmental Protection Agency
CDMG	California Division of Mines and Geology
CEC	California Energy Commission
CEMS	continuous emissions monitoring system
CEQA	California Environmental Quality Act
CO	carbon monoxide
Cogen Unit	Cogeneration Unit
EIR	Environmental Impact Report
ERPG	Emergency Response Planning Guide
gpd	gallons per day
gpm	gallons per minute
LACDPW	Los Angeles County Department of Public Works
LACSD	Los Angeles County Sanitation Districts
LADWP	Los Angeles Department of Water and Power
LOS	level of service
NOP/IS	Notice of Preparation and Initial Study
NOx	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
PM2.5	particulate matter less than 2.5 microns in diameter
PM10	particulate matter less than 10 microns in diameter
ppm	parts per million
RWQCB	Regional Water Quality Control Board, Los Angeles Region
SCAQMD	South Coast Air Quality Management District
SCEC	Southern California Earthquake Center
SCR	selective catalytic reduction
SOx	sulfur oxide
TACs	toxic air contaminants
VOC	volatile organic compounds

GLOSSARY

TERM	DEFINITION
Ambient Noise	The background sound of an environment in relation to which all additional sounds are heard.
Cogeneration	A cogeneration unit is a unit that produces electricity and useful thermal energy for steam or heating processes.
dBA	The decibel (dDB) is one tenth of a bel where one bel represents a difference in noise level between two intensities I_1, I_0 where one is ten times greater than the other. (A) indicates the measurement is weighted to the human ear.
L_{50}	Sound level exceeded 50 percent of the time (average or mean level).
Natural Gas	A mixture of hydrocarbon gases that occurs with petroleum deposits, principally methane together with varying quantities of ethane, propane, butane, and other gases.
Paleontological	Prehistoric life.
Peak Hour	This typically refers to the hour during the morning (typically 7 AM to 9 AM) or the evening (typically 4 PM to 6 PM) in which the greatest number of vehicles trips are generated by a given land use or are traveling on a given roadway.
Refinery Fuel Gas	Gas produced from refinery operations used primarily for fuel gas combustion in refinery heaters and boilers.
Seiches	A vibration of the surface of a lake or landlocked sea that varies in period from a few minutes to several hours and which may change in intensity.