# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

# FINAL NEGATIVE DECLARATION FOR: PETRO-DIAMOND TERMINAL COMPANY MARINE TERMINAL PERMIT MODIFICATION PROJECT

SCH No. 2007081072

**July 2008** 

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#### **PREFACE**

This document constitutes the Final Negative Declaration (ND) for the Petro-Diamond Terminal Company Marine Terminal Permit Modification Project. The Draft ND was circulated for a 30-day public review and comment period (August 15, 2007 through September 13, 2007). One comment letter was received during the public comment period. Those comments were reviewed, evaluated, and responses prepared for individual comments. Comments and responses are included in Appendix B of this Final ND.

Minor modifications have been made to the Draft ND to be consistent with the SCAQMD modified permits such that it is now a Final ND. 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.

# TABLE OF CONTENTS FINAL NEGATIVE DECLARATION FOR: PETRO-DIAMOND TERMINAL COMPANY MARINE TERMINAL PERMIT MODIFICATION PROJECT

Page No. **CHAPTER 1.0: PROJECT DESCRIPTION** Introduction 1-1 Agency Authority......1-1 1.4 Project Description......1-2 1.5.1 1.5.2 **CHAPTER 2.0: ENVIRONMENTAL CHECKLIST FORM** General Information......2-1 Aesthetics 2-4 2. Agriculture Resources 2-5 3. 4. 5. Cultural Resources 2-14 6. 7. 8. 9. 10. 11. 12. Population and Housing.....2-31 13. 14. Public Services 2-32 15. Solid/Hazardous Waste......2-34 16. 17. Mandatory Findings of Significance......2-37 18. 

# **FIGURES:**

Figure 1: Figure 2:	Site Location Map, Petro-Diamond Terminal Company	
TABLES:		
Table 1:	PDTC Existing Conditions and Proposed Terminal Modifications	. 1-5
Table 2:	Comparison of Ship versus Barge Emissions	. 1-7
Table 3:	SCAQMD Air Quality Significance Thresholds	
Table 4:	Estimated Increase in Truck Emissions	
Table 5:	Comparison of Ship versus Barge Emissions	
APPENDICES:		
Appendix A:	Emission Calculations	
^ ^	Comments and Response to Comments Received on the Draft Negative	_

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Declaration

# **CHAPTER 1**

# PROJECT DESCRIPTION

Introduction
Agency Authority
Project Objective
Project Location
Project Description

#### 1.0 PROJECT DESCRIPTION

#### 1.1 INTRODUCTION

The Petro-Diamond Terminal Company (PDTC) has proposed modifications to the air permit for its marine terminal located at 1920 Lugger Way, Long Beach, California, within the Port of Long Beach. Specifically, PDTC operators have requested modifications to its South Coast Air Quality Management District (SCAQMD) air permits in order to adjust the allowable throughput of the terminal, allow an increase in the use of a 30-day average for the maximum allowable throughput through the truck loading rack, and clarify the allowable number of marine vessels that can visit the facility. The proposed modifications will give Petro-Diamond more flexibility in how products are distributed from the Marine Terminal and lead to lower vessel emissions. Modification to permit conditions on current truck loading permits are also expected to make trucking logistics smoother.

This document, prepared pursuant to the California Environmental Quality Act (CEQA), Public Resources Code 21000 et seq., constitutes a Negative Declaration for the Petro-Diamond Marine Terminal Permit Modification Project. A Negative Declaration is prepared for a project subject to CEQA when the lead agency determines there is no substantial evidence that the project may have a significant effect on the environment (CEQA Guidelines §15064(f)(3), §15070(a)).

#### 1.2 AGENCY AUTHORITY

California Public Resources Code §21000 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. The Petro-Diamond Marine Terminal Permit Modification Project constitutes a "project" as defined by CEQA. To fulfill the purpose and intent of CEQA, the SCAQMD is the "lead agency" for the proposed project, and as such is the agency that has prepared this Negative Declaration. In addition, as the public agency which may grant the discretionary approval, the SCAQMD has prepared this Negative Declaration to address the potential environmental impacts associated with the Petro-Diamond Marine Terminal Permit Modification Project.

The lead agency is the public agency that has the principal responsibility for carrying out or approving a project that may have a significant adverse effect upon the environment (Public Resources Code §21067). Since the SCAQMD has the greatest responsibility for supervising or approving the Petro-Diamond Marine Terminal Permit Modification Project as a whole, it was determined that the SCAQMD would be the most appropriate public agency to act as lead agency for the proposed project (CEQA Guidelines §15051(b)).

To fulfill the purpose and intent of CEQA, the SCAQMD has prepared this Negative Declaration to address potential adverse environmental impacts associated with the requested changes to the permit conditions at the Petro-Diamond Marine Terminal.

#### 1.3 PROJECT OBJECTIVE

The purpose of the Petro-Diamond Marine Terminal Permit Modification Project is to:

- Correct the permitted throughput limit of the marine terminal to include the August 2003 permitted volume increase of Tank 10;
- Utilize a maximum -average allowable daily throughput of the truck loading rack; and
- Clarify the definition of "ships" in the air permit by using the term "vessels" and allow for a ship emission equivalent number of barges.

## 1.4 PROJECT LOCATION

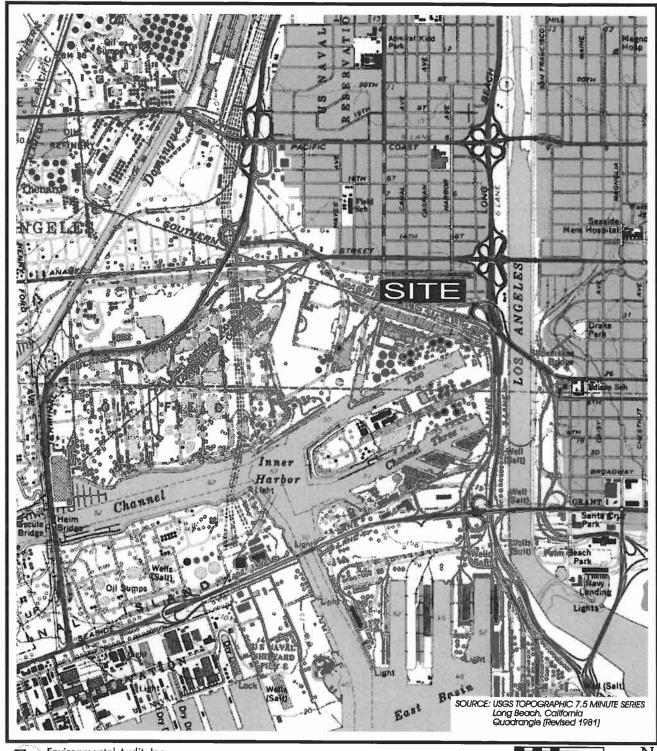
PDTC currently is located on Pier B at 1920 Lugger Way in the northern portion of the Port of Long Beach (Port). Figure 1 shows the location of the PDTC terminal. The site is located in the Port's District 2 – Northeast Harbor Planning District and is surrounded by heavy industrial and other port-related uses, including terminals and facilities operated by Toyota Motor Sales, U.S.A., National Gypsum, and Shell Oil Products, U.S. No land use approvals are required for the PDTC proposed project.

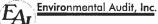
#### 1.5 PROJECT DESCRIPTION

#### 1.5.1 CURRENT PDTC OPERATIONS

PDTC currently operates a petroleum fuels distribution facility located in the Port of Long Beach that contains 590,000 barrels of storage capacity and loads up to approximately 30,000 barrels (1,260,000 gallons) per day into trucks. Petroleum products can also be transported to and from the PDTC Terminal via pipeline. The facility is designed and operated for the purpose of receiving, storing and loading gasoline, ethanol, diesel and biodiesel.

PDTC receives its petroleum products (including automotive fuels and components) via pipelines, vessels, barges, and tanker trucks, and the products are delivered to PDTC from around the world, depending on market conditions. Recent examples of places that supply products to PDTC include Singapore, Saudi Arabia and other parts of the Middle East, Caribbean, Texas, Japan, and Washington. PDTC stores the products in aboveground storage tanks and delivers the product to its customers via pipeline or tanker truck. PDTC uses Berths B82 and B83 for marine operations, which include a variety of underground pipelines for sending and receiving petroleum products to and from its customers and suppliers. PDTC also uses a variety of trucking companies for transporting petroleum products through the truck rack. The facility operates 24 hours per day, seven days per week.





SITE LOCATION MAP PETRO-DIAMOND TERMINAL COMPANY 1920 West Lugger Way Long Beach, California 90813 2,000

,000'

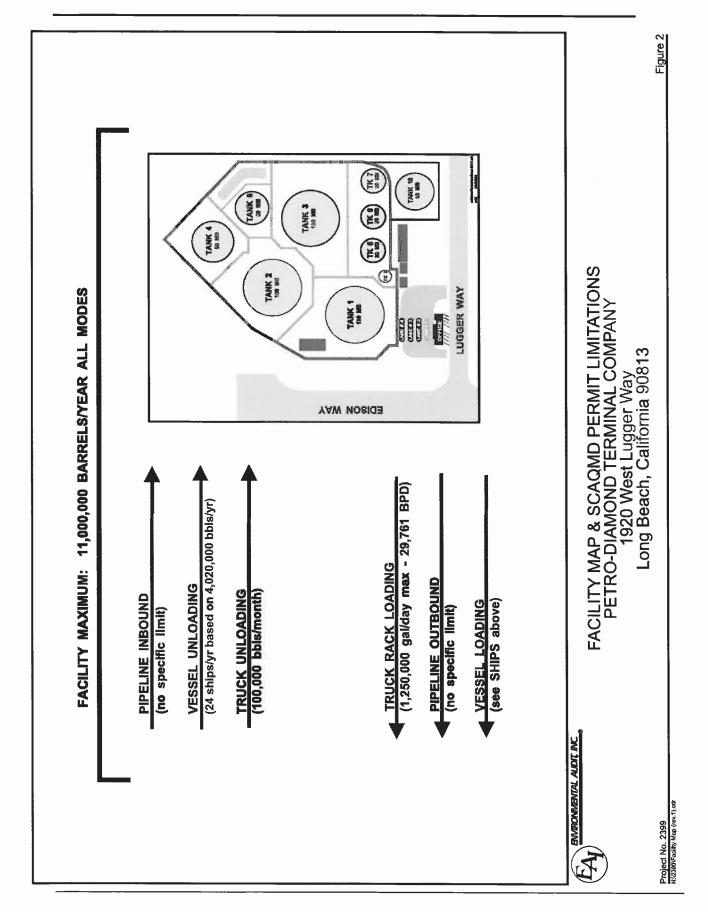
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Figure 1

Original In Color



The marine terminal has throughput limitations in the form of SCAQMD permit conditions that limit the amount of material and ultimately the number of trucks and ships that can visit the terminal. PDTC has a current throughput limit of 11 million barrels per year, which applies to all of the products transported into and out of the facility, whether by ship, truck or pipeline. The terminal is limited to 24 ship visits per year. Finally, the terminal also has a throughput limitation of 29,761 barrels per day on its truck loading rack, which limits the volume of material that can be loaded onto trucks. The terminal has no specific limitation on the amount of material that can be transported by pipeline into or away from the terminal; however, pipeline throughput is still subject to the facility maximum limit. See Figure 2 for the plot plan of the facility and additional information on throughput limitations.

#### 1.5.2 PROPOSED PROJECT MODIFICATIONS

PDTC is requesting modifications to a number of existing SCAQMD permit conditions in order to change the throughput limitation of certain materials, trucks or ships. Table 1 summarizes these changes. The proposed project does not entail any physical modifications to the facility, only changes to existing permit conditions as explained below.

TABLE 1

PDTC Existing Conditions and Proposed Terminal Modifications

Terminal Activity	<b>Existing Condition</b>	Proposed Modification
Total Terminal Throughput	11,000,000 barrels/year	14,600,000 barrels/year
Truck Loading Rack	29,761 barrels/day <sup>(1)</sup>	36,630 barrels/day <sup>(1)</sup>
		29,761 barrels/day <sup>(2)</sup>
Ships Visits	24 ships/year	24 ships or ship
		equivalents/year(2)

<sup>(1)</sup> Based on a maximum day.

#### PDTC is proposing the following modifications:

• Modify the throughput of the terminal from the current permit limit of 11 million barrels per year to 14.6 million barrels per year to account for the SCAQMD permit approval for a new tank (Storage Tank 10) at the PDTC facility in August 2003, which limited the tank throughput to 300,000 barrels per month or 3.6 million barrels per year. This change will allow PDTC to move more product via pipeline since the current 11 million barrels per year limitation is consistent with the truck rack limitation of 29,761 barrels per day (about 893,000 barrels per month or 11 million barrels per year). However, this permit condition is based on the assumption that the

<sup>(2)</sup> Based on a 30-day average.

<sup>(2)</sup> Barges are much smaller than ships, carry less product, and generate fewer emissions. Therefore, PDTC is requesting modification to this permit condition to allow for 10 three barges to be equivalent to one ship. See Chapter 2, Section 3.2 for a further discussion.

entire terminal throughput would go out over the truck racks. This is not the case since PDTC also transfers materials out by pipeline, which results in no emissions. Modifying this condition will allow PDTC to transport more material (an additional 3.6 million barrels per year) via pipeline. No physical changes or changes to the existing air quality permits are required for the existing storage tanks to handle the proposed throughput increase at the terminal. The increased throughput will only go out via pipeline because PDTC already has limits on the throughput of trucks at the loading rack and the number of ships that can visit the terminal.

- PDTC is requesting that the maximum truck rack limit be increased. stated as an average monthly (30-day) limit, rather than a maximum daily limit. The existing permit for the truck loading rack limits the throughput of the truck rack to a maximum of 29,761 barrels per day. PDTC is requesting that the throughput be changed to a maximum of 36,630 barrels per day. 29,761 barrels per day based on a 30-day average (about 893,000 barrels per month). This permit change allows PDTC to handle peak demand periods, e.g., the week prior to a holiday. This change will allow for easier operations since PDTC does not control the trucks arriving at the terminal. A 30-day limit will allow PDTC to check the facilities' throughput over a month's time, and customers can be notified of potential terminal closures in advance of arriving at the terminal. Currently, trucks may show up at the terminal after the daily maximum has been reached and must be turned away.
- Finally, PDTC is requesting that the limitation of 24 ship visits per year be modified. When the PDTC facility was originally permitted, it was believed that large ships (only) would visit the terminal carrying 167,500 barrels each (for a total throughput of 4,020,000 barrels). In practice, few large ships visit the terminal and more smaller barges visit the terminal. PDTC requires far more than 24 barge visits to reach its annual throughput of 4.02 4.32 million barrels. Therefore, PDTC is requesting that the permit be modified to allow it to receive 24 ship visits or ship equivalents per year based on equivalent ship versus barge SOx particulate matter less than 10 microns in diameter (PM10) emissions. In order to determine the number of barges that it would take to generate emissions equivalent to one ship visit, emission calculations were completed for both ships and barges (see Table 2). The emissions include emissions from the main propulsion system and auxiliary engines. As shown in Table 2, 15 approximately three barge visits produce about the same carbon monoxide (CO) volatile organic compounds (VOCs), and nitrogen oxide (NOx) emissions as one ship visit (a Panamax that is 60,000 to 80,000 dead weight ton) (25,000 to 50,000 dead weight ton). About 30 four barge visits produce the same particulate matter less than 10 microns in diameter (PM10) sulfur oxide (SOx) and particulate matter less than 2.5 microns in diameter (PM2.5) emissions as one ship visit. Finally, about 10 three barge visits produce the same sulfur oxide (SOx) PM10 emissions as one ship visit. Therefore, 10 three barge visits produce emissions that are equivalent to one ship visit for all pollutants. In fact, 10 three barge visits would produce less CO, VOC, NOx, SOx, and PM10 PM2.5 than one ship visit. See Chapter 2, Section 3.2 and Appendix A for more detailed information on the emission calculation methodology for all

emission sources. Therefore, PDTC is requesting that the permit condition be modified to include 24 ship visits or equivalent ship visits, with one ship equivalent to 10 approximately three barges.

TABLE 2

Comparison of Ship versus Barge Emissions\*

Vessel	NOx	CO	VOC	PM10	PM2.5	SOx
1 Ship Total Emissions	27,814	<del>2,205</del>	<del>1,028</del>	<del>2,879</del>	2,307	15,530
	4,012.56	323.22	140.50	360.81	305.20	3,900.51
1 Barge Total Emissions	1,886	<del>149</del>	67	<del>9</del> 4	76	1,504
	1,223.62	98.34	44.73	120.13	76.10	923.58
Barge Equivalence	14	14	<del>15</del>	<del>30</del>	30	10
	3.3	3.3	3.1	3.0	4.0	4.2

<sup>\*</sup> For more details on the emission calculations and assumptions see Chapter 2, Section 3.2 and Appendix A.

Barges include ocean-going tugboats and integrated/articulated tug and barge vessels and each barge can vary in the total horsepower of the engines. PDTC will be required to keep records of the total horsepower of the main and auxiliary engines for each barge that visits the terminal and calculate the ship equivalent visits. The sum of actual ship visits and ship equivalent visits (i.e. barges) shall not exceed 24 in any one calendar year. Based on calculations of barges that visit the PDTC terminal, it is expected that about three barges will be equivalent to one ship visit.

The ship equivalent visits will be calculated from the number of actual barge visits using the following formula

Ship Equivalent Visits =  $BETH/(7266 \times 3)$ 

where:

BETH = barge engine total horsepower (main & auxiliary engines)

The proposed modifications will not require any additional facilities and no construction activities are required to complete the proposed modifications. The proposed modifications are limited to modifications to air quality Permits to Operate so the only agency approval that is required is from the SCAQMD.

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#### **CHAPTER 2**

#### **ENVIRONMENTAL CHECKLIST FORM**

Introduction

General Information

Potentially Significant Impact Areas

Determination

Environmental Checklist and Discussion

Aesthetics

Agriculture Resources

Air Quality

**Biological Resources** 

Cultural Resources

Energy

Geology and Soils

Hazards and Hazardous Materials

Hydrology and Water Quality

Land Use and Planning

Mineral Resources

Noise

Population and Housing

**Public Services** 

Recreation

Solid/Hazardous Waste

Transportation/Traffic

Mandatory Findings of Significance

Conclusion

References

Acronyms

Glossary

#### INTRODUCTION

The environmental checklist provides a standard evaluation tool to identify a 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:

Petro-Diamond Terminal Company Marine Terminal Permit

Modification Project

Lead Agency Name:

South Coast Air Quality Management District

Lead Agency Address:

21865 Copley Drive, Diamond Bar, CA 91765

Phone Number:

CEQA Contact Person and Barbara Radlein (909) 396-2716

Project Sponsor's Name:

Petro-Diamond Terminal Company

Project Sponsor's Address:

1920 Lugger Way, Long Beach, CA 90813

Project Sponsor's Contact

Person and Phone Number:

Mike Dougherty (949) 553-0112

Port Master Plan

Designation:

**Primary Port Facility** 

Description of Project:

PDTC operators are proposing modifications to its SCAQMD air permits in order to increase the allowable throughput of the terminal, change the maximum allowable daily throughput through the truck loading rack, and change the allowable number

of marine vessels that can visit the facility.

Surrounding Land Uses and

Setting:

Port-related uses including marine terminals, storage facilities and

distribution facilities.

Other Public Agencies

Whose Approval is

Required:

None

#### POTENTIALLY SIGNIFICANT IMPACT AREAS

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 "\scrtw" 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	Agriculture Resources	Air Quality
Biological Resources	Cultural Resources	Energy
Geology/Soils	Hazards & Hazardous Materials	Hydrology/ Water Quality
Land Use/Planning	Mineral Resources	Noise
Population/Housing	Public Services	Recreation
Solid/Hazardous Waste	Transportation/ Traffic	Mandatory Findings of Significance

# **DETERMINATION**

On the basis of this initial evaluation:

$\square$	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: Augus	Steve Smith, Ph.D.  Program Supervisor

July 2008

#### **ENVIRONMENTAL CHECKLIST AND DISCUSSION**

		Potentially Significant Impact	Less Than Significant Impact	No Impact
1.	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?			$\square$
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?			团

#### 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) The existing PDTC facility is located within the industrialized Port area adjacent to the Toyota Motor Sales, U.S.A automobile receiving, preparation and storage facility. The proposed project will have no change in the visual appearance of the PDTC facility. No new facilities are required as part of the PDTC proposed project and no construction activities are proposed. There would be no changes from the current visual conditions and the facility would be consistent with the industrialized visual environment of the Port. The proposed project would not obstruct scenic views or vistas, nor create significant aesthetic impacts because the proposed project will not require any physical changes at the existing PDTC facility.

1. d) The PDTC facility is located within the industrialized Port area. No new facilities are required as part of the PDTC proposed project and no new light sources are proposed as part of the project. There would be no change from the current light sources onsite or at other locations in the Port relative to the proposed project. The proposed project would not create any adverse impacts on light and glare in the Port or adjacent areas.

#### 1.3 MITIGATION MEASURES

Since no significant aesthetic impacts were identified, no mitigation is required or proposed.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
2.	<b>AGRICULTURE RESOURCES.</b> 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)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?			Ø

#### 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) The proposed project will occur within the boundaries of the existing PDTC facility. The proposed project would be consistent with the heavy industrial nature of the Port and there are no agricultural resources or operations or Williamson contract areas on or near the PDTC site.

Based upon the above considerations, no significant adverse agricultural resources impacts are expected from the PDTC proposed project.

#### 2.3 MITIGATION MEASURES

Since no significant agricultural resources impacts were identified, no mitigation is required or proposed.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
3.	AIR QUALITY. 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?		$\square$	
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)?			Ø

#### 3.1 Significance Criteria

Impacts will be evaluated and compared to the significance criteria in Table 3. If impacts equal or exceed any of those criteria, they will be considered significant.

TABLE 3
SCAQMD Air Quality Significance Thresholds

	Mass Daily Thresholds <sup>a</sup>		
Pollutant	Construction b	Operation <sup>c</sup>	
NOx	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	
СО	550 lbs/day	550 lbs/day	
Lead	3 lbs/day	3 lbs/day	
Toxic Air Conta	aminants (TACs) and Odor T	Thresholds	
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Hazard Index ≥ 1.0 (project increment)		
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402		
Ambient A	ir Quality for Criteria Pollut	ants <sup>d</sup>	
NO2 1-hour average annual average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:  0.25 ppm (state)  0.053 ppm (federal)		
PM10 24-hour average annual geometric average annual arithmetic mean	10.4 μg/m³ (construction) <sup>e</sup> & 2.5 μg/m³ (operation) 1.0 μg/m³ 20 μg/m³		
PM2.5 24-hour average	10.4 μg/m³ (construction) <sup>e</sup> & 2.5 μg/m³ (operation)		
Sulfate			
24-hour average		<b>25</b> μg/m <sup>3</sup>	
СО	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards		
1-hour average 8-hour average  8 Source: SCAOMD CEOA Handbook (SCAOMD)	20 ppm (state) 9.0 ppm (state/federal)		

<sup>&</sup>lt;sup>a</sup> Source: SCAQMD CEQA Handbook (SCAQMD, 1993)

KEY: lbs/day = pounds per day ppm = parts per million  $\mu g/m^3 = microgram per cubic meter$   $\geq$  greater than or equal to

b Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).

<sup>&</sup>lt;sup>c</sup> 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.

<sup>&</sup>lt;sup>e</sup> Ambient air quality threshold based on SCAQMD Rule 403.

#### 3.2 ENVIRONMENTAL SETTING AND IMPACTS

- 3. a) & f) The 2007 Air Quality Management Plan (AQMP) demonstrates that it may be difficult to achieve applicable ambient air quality standards within the timeframes required under federal law. Growth projections from local general plans and master plans adopted by local governments in the district are some of the inputs used to develop the AQMP. As discussed in the Population and Housing and Transportation/Traffic sections, the proposed project will not require additional employees onsite or generate substantial additional traffic during operation. Therefore, the proposed project will not cause increases in the growth projections in the Port Master Plan. Additionally, this project must comply with applicable SCAQMD rules, regulations, and applicable conditions. By complying with these regulations, the project will be consistent with the goals and objectives of the AQMP.
- 3. b), c), and d) Construction Emissions: Because the proposed project will alter permit conditions on existing equipment, no construction activities are expected; therefore, no construction emissions are expected. Thus, no air quality impacts are expected from construction.

**Operational Emissions:** The proposed modifications to the permit conditions for increasing annual throughput and changing the types of vessels that would be allowed to call at the terminal can result in both operational emissions increases and decreases, which are evaluated below.

The PDTC terminal is currently limited to a maximum throughput of 11 million barrels per year by an SCAQMD permit condition. However, the SCAQMD approved a permit for a new storage tank (Storage Tank 10) at the PDTC facility in August 2003, which limits its throughput to 300,000 barrels per month or 3.6 million barrels per year. PDTC is proposing to increase the overall annual product throughput of the terminal by adding the permit limit for Storage Tank 10 (3.6 million barrels per year) into the current throughput limit (11 million barrels per year) for a total annual throughput limit of 14.6 million barrels per year. This proposed change will allow PDTC to move more product via pipeline only; no change to the throughput for this storage tank has been requested by PDTC operators.

Changing the PDTC Terminal's annual throughput condition to add the existing throughput condition of 3.6 million barrels per year from Storage Tank 10 will not result in an increase in trucks or marine vessels or an increase in related emissions. Instead, the proposed change to add the existing throughput of Storage Tank 10 to the existing throughput of the facility will only result in an increase in the amount of product distributed by pipeline; therefore, no increase in emissions is expected from modifications to this permit condition. Further, no increase in emissions is expected from any of the other existing on-site storage tanks at PDTC, since no additional increase in throughput for other storage tanks has been requested by PDTC operators.

The PDTC facility also currently has a separate throughput limitation on the SCAQMD permit for its truck loading rack which allows a maximum of 29,761 barrels per day (about 11 million barrels per year). PDTC is requesting that the throughput of the truck racks be increased to 36,630 barrels per day. PTDC is not requesting to increase the throughput of the truck racks and the proposed project would not change the yearly throughput of the truck loading rack of 11

million barrels per year. Instead, PDTC is requesting that the limit for the truck loading rack be stated as an average monthly (30 day) limit, rather than a maximum daily limit. The proposal to change the throughput limit from a maximum daily rate to an average monthly rate will have no effect on the amount of product that would be moved on an annual basis because the annual throughput of the truck loading rack would remain at about 11 million barrels per year.

A throughput of 29,761 barrels per day averaged over 30 days equates to approximately 893,000 barrels per month. This proposed permit change from a daily limit to a 30-day average would allow PDTC operators to handle peak demand periods, e.g., the week prior to a holiday, which has the potential to generate additional truck traffic on a peak day. The truck loading rack at the PDTC facility currently handles about 160 to 170 trucks per day. PDTC estimates that the proposed project would allow approximately 30 additional trucks on a peak day. The analysis in the draft negative declaration was based on the maximum number of trucks per day that could be handled at the PDTC facility with its existing loading racks (about 200 trucks per day). Changing from a rolling 30-day average (29,761 barrels per day) to a maximum limit of 36,630 per day did not change the maximum number of trucks per day that could be handled by the facility. (This estimate is based on the fact that the vapor control system for the offloading rack has a limit of 36,000 barrels per day.) The emission summary for the additional truck trips on a peak day is included in Table 4 and the calculations are included in Appendix A. As shown in Table 4, increased daily truck emissions are below the SCAQMD thresholds for all pollutants. The proposed project would not result in an increase in air emissions because, as part of the permit modification, the SCAQMD has decreased the allowable emission standard for the truck loading rack from 0.08 pound of VOC per 1,000 gallons loaded to 0.065 pound of VOC per 1,000 gallons loaded. Therefore, loading an additional 30 trucks is not expected to result in an emission increase due to loading emissions. on a monthly basis because the proposed project would not result in an increase in throughput (trucks) on a monthly basis. Therefore, if the PDTC loaded an additional 30 trucks on one day, it would have to reduce the number of trucks handled on other days during the month.

TABLE 4

Estimated Increase in Truck Emissions (1) (pounds per day)

Trucks	CO	VOC	NOx	SOx	PM10	PM2.5	CO2 <sup>(2)</sup>
Increase in Emissions <sup>(3)</sup>	9	2	46	<0.1	2.4	2.3	7,453
SCAQMD Thresholds	550	55	55	150	150	55	
Significant?	NO	NO	NO	NO	NO	NO	

- (1) For more details on the emission calculations and assumptions see Appendix A.
- (2) Significance thresholds for CO2 or other greenhouse gas emissions have not yet been developed. See page 2-11 for a discussion of the project impacts on CO2 emissions.
- (3) Based on 30 additional truck trips per day.

Finally, PDTC is requesting that the limitation of 24 ship visits per year be modified to include barges. When the facility was originally permitted, it was believed that only large ships carrying 167,500 barrels each (for a total annual throughput of 4,020,000 barrels) would visit the terminal. As a result, 24 ship visits per year was imposed as a permit condition, which is considered to be the environmental baseline for the PDTC terminal. (Note that ships larger than 167,500 barrels

capacity or "super tanker ships" would not fit at the berth because the water depth and the length of the dock are not sufficient to handle larger ships.)

In practice, few large ships actually visit the terminal and instead, more smaller barges visit the terminal. PDTC requires much more than 24 barge visits to reach its annual throughput of 4.02 million barrels. Therefore, PDTC operators are requesting to modify the permit so that it can receive 24 ship visits or ship equivalents per year. In order to determine the number of barges that it would take to generate emissions equivalent to one ship visit, emission calculations were completed for both ships and barges (see Table 5 and Appendix A). The ship emissions include emissions from the main propulsion system and auxiliary engines, cruising, maneuvering, and hotelling. As shown in Table 5, 14 approximately three barge visits produce about the same carbon monoxide (CO) and nitrogen oxide (NOx) emissions, and 15 barge visits produce about the same volatile organic compounds (VOCs), as one ship visit (25,000 to 50,000 dead weight ton (DWT) Panamax). Approximately four barge visits produce the same particulate matter less than 10 microns in diameter (PM10) sulfur oxide (SOx) and particulate matter less than 2.5 microns (PM2.5) emissions as one ship visit. Finally, about 10 three barge visits produce the same sulfur oxide (SOx) particulate matter less than 10 microns in diameter (PM10) emissions as one ship visit. Therefore, 10 three barge visits are considered to be equivalent to one ship visit relative to SOx PM10 emissions. In fact, 10 three barge visits would produce less CO, VOC, NOx, PM2.5 and PM10 SOx than one ship visit (see Table 5).

TABLE 5

Comparison of Ship versus Barge Emissions\*

(pounds per visit)

Vessel	NOx	CO	VOC	PM10	PM2.5	SOx
1 Ship Total Emissions	27,814	2,205	1,028	2,879	<del>2,307</del>	15,530
	4,012.62	323.34	140.50	360.81	305.20	3,900.51
1 Barge Total Emissions	1,886	149	67	94	<del>76</del>	1,504
	1,223.62	98.34	44.73	120.13	76.10	923.58
Barge Equivalence	14	14	15	<del>30</del>	<del>30</del>	10
	3.3	3.3	3.1	3.0	4.0	4.2
Emissions for 10 three	18,860	1,490	<del>670</del>	940	<del>760</del>	15,040
Barges	3,670.87	295.02	134.20	360.39	228.29	2770.74
Difference between	<del>-8,954</del>	<del>-715</del>	<del>-358</del>	<del>-1,939</del>	<del>-1,547</del>	<del>-490</del>
Emissions from 1 Ship	-341.69	-28.20	-3.29	-0.42	-76.91	-1,129.77
and emissions from 10						1
three Barges						
Truck emissions**	46	9	2	2.4	2.3	<0.1
Total Emissions	<del>-8,908</del>	<del>-706</del>	<del>-356</del>	<del>-1,937</del>	<del>-1,545</del>	<del>-490</del>
	-295.69	-19.20	-4.29	1.98	-74.61	-1,129.67
SCAQMD Thresholds	550	55	55	150	55	150
Significant?	NO	NO	NO	NO	NO	NO

<sup>\*</sup> For more details on the emission calculations and assumptions, including the emissions associated with cruising, maneuvering, and hotelling emissions, see Appendix A.

\*\* See Table 4 and Appendix A.

Ships and barges are assumed to arrive and depart in the same manner (i.e., enter California coastal waters 66 miles off shore), cruise, and comply with vessel speed reduction requirements. Ships are expected to cruise for 8.5 10.3 hours while barges will cruise for 12 10.7 hours, maneuvering in the Port is expected to take 1.6 1.75 hours for both vessel types, and hotelling varies depending on the amount of material to be unloaded. (Note: the difference in speed between ships and barges is based on the observed speeds and distances for various types of vessels by the Port of Los Angeles, 2005.) Hotelling is when the vessel is at berth and cargo is loaded or unloaded. It is assumed that the main engines are not on and auxiliary engines are used to provide power to necessary systems including navigation systems, lights, and cooling aboard the vessel while docked. Hotelling emission calculations are based on the largest vessel capacity for each type of vessel. The PDTC berth can only accommodate one vessel (ship or barge) at a time. See Appendix A for more detailed information on the emission calculation methodology.

Based on the emission calculations, the proposal to allow 10 three barges to replace one ship would result in an overall emissions decrease as barges generate much less emissions than ships. Therefore, no increase in ship emissions is expected and no significant adverse impacts are expected.

Carbon dioxide (CO2) emissions from the PDTC terminal are not expected to significantly change due to the proposed project. CO2 emissions from trucks could increase on a peak day (see Table 4), however, overall CO2 emissions from the terminal are not expected to substantially change because overall there is expected to be a proportionate decrease in CO2 emissions from utilizing more barges in lieu of ships. they are not expected to increase on a monthly or annual basis since no increase in the number of trucks that visit the terminal on a monthly or annual basis would occur. Sufficient data are not available to calculate the CO2 emission changes from vessels associated with the proposed project. The California Air Resources Board (CARB) is currently developing CO2 emission factors for marine engines. However, those emission factors are not available at this time. When comparing ship emissions to barge emissions, the CO2 emissions for barges are expected to will follow the same emission reduction trend as for the other criteria pollutants listed in Table 5, i.e., CO2 emissions are expected to be much higher for ships than for barges because ship engines are much larger than barge engines. By substituting 10 three barges for one ship, the emission calculations show a reduction in emissions of all criteria pollutants (see Table 5). Therefore, a proportionate reduction in CO2 emissions is also expected to result from implementing the proposed project. Therefore, CO2 emissions from the proposed project are not considered to be cumulatively considerable as no long-term increase in CO2 emissions is expected.

Similar to the anticipated reduction in criteria pollutants resulting from substituting barges for ships, the proposed project is also expected to result in a decrease in toxic air contaminants. Diesel particulate matter from the combustion of marine fuel is the main toxic air contaminant of concern associated with marine engines. As shown in Tables 2 and 5, the proposed project is expected to result in an overall decrease in PM10 and PM2.5 emissions, which would lead to a related reduction in diesel particulate matter and related beneficial health impacts associated with reduced exposure to toxic air contaminants (diesel particulate matter). Therefore, no significant

adverse health impacts related to exposure to toxic air contaminants are expected due to the proposed project.

3. e) Odors: The proposed project is expected to provide an overall decrease in emissions from the marine terminal, specifically related to ship emissions, thus reducing the potential for odors from these sources. No increase in odors is expected from the proposed project.

#### 3.3 MITIGATION MEASURES

Since no significant air quality impacts were identified, no mitigation is required or proposed.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
4.	<b>BIOLOGICAL RESOURCES.</b> 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?			ď
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?			团
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?			<b>☑</b>
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?			

		Potentially Significant Impact	Less Than Significant Impact	No Impact
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.?			Ø

#### 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) & f)** No construction activities are expected as a result of the PDTC proposed project. The project modifications will occur within the confines of the existing terminal. The existing PDTC site is thoroughly developed and paved, or covered by gravel, and contains buildings and storage tanks. The area surrounding the site consists of other similar port industrial uses. There is no landscaping, natural habitats or unique, rare or endangered plants or animals within the project boundary. Therefore, no change in the diversity or number of terrestrial or marine species, including special status species would occur. The project area is not within a designated wildlife corridor nor has it been designated in any local, state, or federal habitat conservation plan or preservation ordinance.

Surveys of the Long Beach and Los Angeles Harbors showed that gulls are the most abundant birds, but brown pelicans and shorebirds are also common. The endangered California least tern (Sterna antillarum browni) is common in the harbor area and has a nesting area in Los Angeles Harbor, but it is not known to use the project area for foraging or resting, nor is the project area designated critical habitat for the species. The threatened peregrine falcon (Falco peregrinus anatum) and endangered California brown pelican (Pelecanus occidentalis californicus) regularly use the harbor area, perching on structures, however, they do not nest or forage in the project area. No foraging is known or expected to occur in the proposed project area, although several special status species could fly over the project site.

Ships calling at the Port have the potential to introduce invasive species in their ballast water. However, the proposed project would not increase the potential for the introduction of new species into the Port since barges do not use water for ballast. Therefore, the use of barges would not introduce invasive species in ballast water.

Therefore, the proposed project would not result in impacts 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 of the U.S. Fish and Wildlife Service, nor would it interfere with the movement of any wildlife specifies.

Based upon the above considerations, significant adverse biological resources impacts are not expected from the proposed project.

#### 4.3 MITIGATION MEASURES

Since no significant biological resources impacts were identified, no mitigation is required or proposed.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
5.	CULTURAL RESOURCES. Would the project:			
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?			Ø
b)	Cause a substantial adverse change in the significance of a archaeological resource as defined in §15064.5?			Ø
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			Ø
d)	Disturb any human remains, including those interred outside a formal cemeteries?			. <b>I</b>

#### 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) c) & d) No construction or demolition activities are required as part of the proposed project so no additional land would be disturbed as a result of site preparation or removal of structures. Therefore, the proposed project would not physically or aesthetically affect a prehistoric or historic building, structure or object. The PDTC project site is located entirely on disturbed land consisting of fill material deposited in the past 75 years. Accordingly, the proposed project has no potential for disturbance or destruction of archaeological or paleontological resources or human remains.

Based upon the above considerations, no significant adverse impacts on cultural resources are expected.

#### 5.3 MITIGATION MEASURES

Since no significant cultural resources impacts were identified, no mitigation is required or proposed.

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

#### 6.1 SIGNIFICANCE CRITERIA

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

The proposed project conflicts with adopted energy conservation plans or standards.

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

#### 6.2 ENVIRONMENTAL SETTING AND IMPACTS

- 6. a) & e) The proposed project is not subject to any existing energy conservation plans or standards, so it is not expected to conflict with energy plans or standards.
- 6. b), c) & d) The proposed project will not require the construction or operation of any new structures or equipment. Therefore, the proposed project is not expected to require any increase in electricity or natural gas use.

Fuel use is not expected to be reduced change dramatically because ship main engines are over 29 2.3 times larger than barge engines, which is consistent with the three vessel equivalence. Assuming an equivalent fuel use rate for both ship and barges for both the main and auxiliary engines, the proposed project would allow for up to a 70 percent reduction in increase heavy fuel oil use in main engines by 39 percent and 85 percent reduction in reduce diesel fuel use in auxiliary engines by 48 percent, for a total increase of marine fuel use by 58.6 gallons of fuel used per day (see Appendix A, page A-7 for detailed calculations). Therefore, the proposed project is not expected to require any a substantial increase in marine fuels.

Based upon the above considerations, the energy impacts of the proposed project are expected to be less than significant.

#### 6.3 MITIGATION MEASURES

Since no significant cultural resources impacts were identified, no mitigation is required or proposed.

7.	GEOLOGY AND SOILS. Would the project:	Potentially Significant Impact	Less Than Significant Impact	No Impact
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:			Ø
	• 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?			
	<ul><li>Strong seismic ground shaking?</li><li>Seismic-related ground failure, including</li></ul>			<b>I</b>
	liquefaction?  • Landslides?			$\overline{\checkmark}$
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?			<b></b> ✓
d) e)	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?			
	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?			Ø

## 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) The Port of Long Beach is located in a seismically active region. Seismic records have been available for the last 200 years, with improved instrumental seismic records available for the past 50 years. Based on review of earthquake data, most of the earthquake epicenters occur along the San Andreas, San Jacinto, Whittier-Elsinore and Newport-Inglewood faults (Jones and Hauksson, 1986). All these faults are elements of the San Andreas fault system. Past experience indicates that there has not been any substantial damage, structural or otherwise to the PDTC as a result of earthquakes. However, faults in the area are potential sources of strong ground shaking, including the following: 1) the San Andreas fault; 2) the Newport-Inglewood fault; 3) the Malibu-Santa Monica-Raymond Hills fault; 4) the Palos Verdes fault; 5) the Whittier-Elsinore fault; 6) the Sierra Madre fault; 7) the San Fernando fault; 8) the Elysian Park fault; and 9) the Torrance-Wilmington fault.

In addition to the known surface faults, shallow-dipping concealed "blind" thrust faults have been postulated to underlie portions of the Los Angeles Basin. Because there exist few data to define the potential extent of rupture planes associated with these concealed thrust faults, the maximum earthquake that they might generate is largely unknown.

The closest fault zones to the PDTC site include the Newport-Inglewood Fault approximately three miles north-northeast of the site, the Palos Verdes Hills fault located about 2.5 miles west of the site, the Whittier Fault about 19 miles northeast of the site, and the San Andreas Fault approximately 50 miles northeast of the site.

The proposed project would not require the construction of any new equipment or structures; therefore, the proposed project will not introduce any new geologic hazards to the area or increase the risk to life or property associated with ground shaking, a seismic-related ground failure, liquefaction, or landslides. Therefore, no significant impacts from earthquake-related hazards are expected.

7. b, c, d, and e) The proposed project will require no additional construction activities and will not require construction of any new structures. The site is currently flat and no unstable earth conditions or changes in geologic substructures are expected to result from the proposed project. The marine terminal is not prone to landslides nor does it have any unique geologic features

since it is located in a heavy industrial area. The PDTC facility does not use septic systems or alternative wastewater disposal systems. Further, no increase in water use or wastewater generated is expected due to the proposed project. Thus, the proposed project will not adversely affect soils associated with a septic system or alternative wastewater disposal system.

Based upon the above considerations, significant geology and soils impacts are not expected from the PDTC proposed project.

#### 7.3 MITIGATION MEASURES

Since no significant geology and soils impacts were identified, no mitigation is required or proposed.

8.	HAZARDS AND HAZARDOUS MATERIALS. Would the project:	Potentially Significant Impact	Less Than Significant Impact	No Impact
a)	Create a significant hazard to the public or the environment through the routine transport, use, disposal of hazardous materials?			Ø
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident 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?			$\square$
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?			<b>☑</b>
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 airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			Ø

		Potentially Significant Impact	Less Than Significant Impact	No Impact
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard			$\overline{\mathscr{A}}$
g)	for people residing or working in the project area? Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			Ø
h)	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?			₹
i)	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.

#### 8.2 ENVIRONMENTAL SETTING AND IMPACTS

8. a) & b) PDTC receives and distributes petroleum products via vessel, truck and pipeline. The PDTC proposed project will occur within the confines of the existing marine terminal and does not require the construction of any new structures. The proposed project would also not change the types of materials handled at the terminal or increase the potential for exposure to hazards to the general public.

The proposed project would result in an increase in throughput at the terminal from 11 million barrels per year to 14.6 million barrels per year. The increased throughput would result in more material transferred by pipeline, as the facility is not increasing the number of vessels that visit

the facility. PDTC would continue to use existing pipelines to transport petroleum products so there would be no change in exposure to the public to hazards from pipelines.

#### Truck Hazards

The proposed project would result in a permit modification to allow for a maximum daily limit of 36,630 barrel per day limit on the loading rack. an average monthly permit limit on the loading rack throughput (893,000 barrels per month), rather than a maximum daily limit (29,761 barrels per day). The proposed revisions to the permit condition may result in the increase of about 30 trucks on a maximum daily basis. However, there would be no change in the number of trucks that visit the facility on a monthly or annual basis. If the facility has a high number of trucks on a few days during the month, it would have a decreased number of trucks on other days in order to not exceed the throughput limit of 893,000 barrels per month. Therefore, there would be no change in the probability of an accident or hazard due to the proposed project on a monthly or annual basis. Regulations for the transport of hazardous materials by public highway are described in 49 Code of Federal Regulations 173 and 177. Numerous trucks containing fuel are on the highways every day so the proposed project would not introduce any new hazards.

Although trucking of fuels and other hazardous materials is regulated for safety by the U.S. Department of Transportation, there is a possibility that a tanker truck could be involved in an accident spilling its contents. The accident rates developed based on transportation in California were used to predict the accident rate associated with the increase in trucks to transport fuels from the PDTC facility. Assuming an average truck accident rate of 0.28 accidents per million miles traveled (Los Angeles County, 1988) and a transport distance of 50 miles, the estimated existing accident rate associated with the increase in trucks transporting fuels is 0.13, or about one accident every 7.7 years. The likelihood of any release in a transportation accident is one in 10, and that of a large release in a transportation accident is one in 40. The likelihood of a major transportation release after implementation of the proposed project is, therefore, approximately once per 308 years (7.7 times 40). The probability of a transportation accident that would pose a significant risk to the public is therefore insignificant.

The maximum quantity of fuel transported to and stored at the PDTC facility at any one time would not be increased; therefore, the magnitude and potential consequences of a release involving fuels would not change from the existing conditions. Therefore, no significant adverse hazard impacts are expected for the increased truck traffic from the proposed project. Based on the improbability of a tanker truck accident with a major release, its potential severity if it did occur, the conclusion of this analysis is that potential impacts due to accidental release of fuels during transportation are less than significant.

#### Ship/Barge Hazards

The Port of Long Beach risk management program identifies "vulnerable resources" as significant populations or facilities that are susceptible to injury or damage from accidents involving hazardous materials. Accident potential and related risk to public health and safety concern the populations within and beyond the project area boundaries. Significant populations include permanent residents, visitors, and employees.

Residential populations are generally the largest and most vulnerable group susceptible to injury or damage from accidents. In this case, there are no residential land uses in proximity to the PDTC terminal. The residential population nearest the project site is located across the Los Angeles River Channel and Queensway Bay, in the core downtown area of the city of Long Beach. This distance and physical separation between land uses lowers the risk to residential populations from Port activities to less than significant.

Employees are potentially exposed to a higher level of risk than other populations. This group may be directly involved in the handling, storage, and transport of hazardous materials. However, worker training is extensive and includes emergency response and evacuation procedures. The level of risk to employees is less than significant, given appropriate worker training.

The proposed project would also result in a permit modification to allow for additional smaller barges to visit the terminal instead of only larger ships. The proposed revisions to the permit condition would allow for an increase in the number of vessels that visit the terminal on an annual average (ten three barges are equivalent to one ship carrying 180,000 barrels of product). However, the total annual volume of petroleum product that arrives by either ship or barge is not expected to change. Therefore, the hazards associated with vessel transport of petroleum products are expected to remain the same or be less due to the decrease in the amount of petroleum product delivered per visit. The hazards (spills, fires, explosions, etc.) associated with the delivery of smaller volumes of petroleum product are less than the hazards associated with the delivery of larger volumes of petroleum products.

The probability of a release is expected to be greater than current conditions as more barges would visit the terminal than ships; however, the probability of a release is expected to remain remote as there has been no release from a ship or barge during the operation of the PDTC facility. In 2006, about 6,087 vessels called at the Ports of Los Angeles and Long Beach (LA/LB, 2006). There were three reported vessel accidents (including vessel collisions between two moving vessels, vessel collisions between moving vessels and stationary objects, and vessel groundings) in the Ports of Los Angeles/Long Beach during 2006 for a reported accident rate of 0.00016, indicating that reportable accidents are rare. None of the accidents resulted in a spill to a waterway (LA/LB, 2006). Therefore, the hazards associated with marine vessel transport of petroleum products are expected to be less than significant.

- 8. c) The PDTC terminal is not located within one-quarter mile of an existing or proposed school. Therefore, no potential for impacts from hazardous emissions or the handling of acutely hazardous materials, substances and wastes that could affect schools are expected.
- **8. d)** The PDTC terminal is not located on a list of sites compiled pursuant to §65962.5 of the Government Code. Accordingly, significant adverse hazards and hazardous materials impacts are not expected from the proposed project.
- 8. e) & f) The PDTC is not located within two miles of an airport (either public or private), and is not located within an airport land use plan.

- **8. g)** The proposed project is not expected to interfere with an emergency response plan or emergency evacuation plan. The PDTC terminal has an emergency response plan in effect. However, no modifications to the emergency response plan or the emergency evacuation plan are expected to be required as a result of the proposed project because no new facilities are proposed as part of the project. In addition, barges are much smaller in size and easier to maneuver than ships. In the event of an emergency, barges would be able to leave the berth and port faster than a ship allowing for quicker evacuation than ships.
- 8. h) & i) The proposed project will not increase the existing risk of fire hazards in areas with flammable brush, grass, or trees. No substantial or native vegetation exists on or near the PDTC terminal so the proposed project is not expected to expose people or structures to wildland fires. Therefore, no significant increase in wildland fire hazards is expected at the PDTC terminal.

Based on the above considerations, the potential hazards and hazardous materials impacts related to the proposed permit modifications at the PDTC terminal, and the transport of hazardous materials are less than significant.

#### 8.3 MITIGATION MEASURES

Since no significant adverse hazard/hazardous materials impacts were identified, no mitigation is required or proposed.

9.	HYDROLOGY AND WATER QUALITY. Would the project:	Potentially Significant Impact	Less Than Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements?			
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, in a manner that would result in substantial erosion or siltation on- or off-site?			₹

	Potentially Significant	Less Than Significant	No Impact
d) Substantially alter the existing drainage pattern the site or area, including through alteration of course of a stream or river, or substantially increase the rate or amount of surface runoff in manner that would result in flooding on- or off-site?	the a	Impact □	☑
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runof	r?		
f) Otherwise substantially degrade water quality?			
g) Place housing within a 100-year flood hazard a as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			V
h) Place within a 100-year flood hazard area structures which would impede or redirect floor flows?	□ d		Ø
i) Expose people or structures to a significant risk loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			☑
j) Inundation by seiche, tsunami, or mudflow?			$\overline{\checkmark}$
k) Exceed wastewater treatment requirements of tapplicable Regional Water Quality Control Board?	he 🗆		Ø
1) Require or result in the construction of new wa or wastewater treatment facilities or expansion existing facilities, the construction of which co cause significant environmental effects?	of		Ø
m) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			Ø

n)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	Potentially Significant Impact	Less Than Significant Impact	No Impact ☑
0)	Require 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), f), k), l) & o) No increase in water use or wastewater generation is expected due to the proposed project. The proposed project does not require any construction activities and no new facilities are required at the PDTC terminal. Therefore, no increase in water use or wastewater generation will occur as part of the proposed project. Further, no increase in the use of ballast water is expected since barges do not use water for ballast.
- 9. b) The proposed project is not expected to significantly adversely affect the quantity or quality of groundwater in the area of the terminal. There is no beneficial use of ground water in the area since most of the aquifers are unusable for fresh water supply because of salt-water intrusion. No water is required for construction and the proposed project does not require any increase in water use. Therefore, no significant adverse impacts are expected to ground water quality from the PDTC proposed project.
- 9. c), d), e) & m) The proposed project will not result in an increase in storm water runoff as no construction activities and no new structures are required. The site is already graded and flat and no new paved surfaces will be required. PDTC already has implemented a Storm Water Pollution Prevention Plan (SWPP) for the terminal in accordance with the National Pollutant Discharge Elimination System Industrial Storm Water Permit. No changes to the SWPP will be required as part of the proposed project. Therefore, no significant adverse impacts on storm water runoff are expected.
- 9. g), h), & i) The proposed project will not require construction activities and does not include the construction of any new housing nor would it place new housing within a 100-year flood hazard area. The PDTC facility is not located within a 100-year flood zone and would not expose people or property to any known water-related flood hazards. No significant adverse impacts associated with flood hazards are expected due to the proposed project.
- 9. j) The PDTC facility is located within the Port of Long Beach. The past construction of the existing breakwaters has minimized the potential impacts of a tsunami or seiche to the terminal. The proposed project will not require construction activities or any new structures so that no significant new impacts are expected. Further, the PDTC facility is located in a relatively flat area, therefore, the proposed project is not susceptible to mudflows (e.g., hillside or slope areas) so that no significant impacts from mudflows would be expected.
- 9. n) No increase in water use will occur due to the proposed project. The proposed project does not require any construction activities and no new facilities are required at the PDTC facility. Therefore, no increase in water use will occur as part of the proposed project. No significant adverse impact on water use is expected due to the proposed project.

Based on the above considerations, the potential hydrology and water quality impacts, especially those associated with wastewater discharge, storm water discharge, and water demand are expected to be less than significant for the proposed project.

Since no significant hydrology and water quality impacts were identified, no mitigation is required or proposed.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
10.	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?			₹
c)	Conflict with any applicable habitat conservation or natural community conservation plan?		□ .	abla

#### 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 Port of Long Beach.

#### 10.2 ENVIRONMENTAL SETTING AND IMPACTS

- 10. a) The proposed project will occur at the existing PDTC facility, thus, it will not result in physically dividing any established communities, but will continue the use of the site as a marine terminal.
- 10. b) & c) The proposed project conforms to the overall goals of the Port Master Plan, local zoning ordinances, and relevant regional plans. The site is in the Port's District 2 Northeast Harbor Planning District. The facility is zoned as a primary port facility, which is one of the identified uses in District 2 (PLB, 2003). The existing terminal and the proposed project are consistent with this land use. The proposed project would not change the use of the facility and is consistent with the Port Master Plan. Further, there are no habitat conservation or natural community conservation plans located within or adjacent to the existing facility.

Based upon the above considerations, significant adverse land use planning impacts are not expected from the implementation of the proposed project.

Since no significant land use and planning impacts were identified, no mitigation is required or proposed.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
11.	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></b> ✓
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?			Ø

#### 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) & b) The proposed project will occur within the confines of the existing marine terminal and would be consistent with the heavy industrial zoning for the Terminal. No mineral resources or operations occur at or near the PDTC facility. There are no provisions of the proposed project that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state such as aggregate, coal, clay, shale, et cetera, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Based on the above considerations, no adverse impacts on mineral resources are expected due to implementation of the proposed project.

Since no significant mineral resources impacts were identified, no mitigation is required or proposed.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
12.	<b>NOISE.</b> Would the project result in:	_	_	
a)	Exposure of persons to or generation of 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?		$\square$	
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			Ø
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		$\square$	
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 airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			Ĭ
f)	For a project within the vicinity of a private airship, would the project expose people residing or working in the project area to excessive noise levels?			Ø

#### 12.1 SIGNIFICANCE CRITERIA

Impacts on noise will be considered significant if:

Construction noise levels exceed the City of Long Beach 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 Occupational Safety and Health Administration (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.

#### 12.2 ENVIRONMENTAL SETTING AND IMPACTS

12. a), b), c), & d) The PDTC site is located in an active industrial area with ambient noise levels typical of industrial areas. In addition, the site is adjacent to facilities with routine truck and rail traffic into and out of the industrial facilities, and surrounded by the routes used by many of those trucks. The nearest residences are over a mile to the east of the PDTC facility, separated from the site by a variety of heavy industrial facilities (including other port facilities and refineries), freeways, and the Los Angeles River. There are no sensitive receptors such as schools, or hospitals within one mile of the project site.

No construction activities are required so no noise impacts will be generated by construction activities.

The proposed project will not require the operation of new stationary sources so no noise will be generated by on-site equipment. The proposed project will change the limit on the truck rack from a maximum daily limit of 29,761 barrels per day to a daily maximum of 36,630 barrels per day. 30-day average limit based on 29,761 barrels per day. This will allow PDTC to better distribute product during peak demand periods, e.g., prior to holidays. Therefore, on a peak day, truck traffic to the facility could increase by a maximum of about 30 trucks. The facility operates 24 hours per day and the trucks are expected to visit the facility throughout the day, generating an increase of one to three trucks per hour. The contribution of PDTC to the local traffic noise in the port area is negligible since the existing traffic noise on the local streets and freeways is orders of magnitude greater than the one to three trucks per hour that would be generated by PDTC proposed project.

The proposed project would allow up to 240 72 additional smaller barges to visit the terminal (assuming no ships visit the terminal), instead of the 24 larger ships that carry up to 180,000 barrels. The larger ships tend to have larger engines that generate higher noise levels than the smaller barges. Only one vessel (ship or barge) can fit at the terminal at a time. Therefore, the proposed changes are not expected to generate greater noise impacts from vessels than the current facility operations.

12. e) & f) The PDTC is not located within an airport land use plan, and the proposed project would not expose people residing or working in the project area to excessive noise levels associated with airplanes.

Based upon the above considerations, significant noise impacts are not expected from the proposed project.

#### 12.3 MITIGATION MEASURES

The proposed project will not cause an overall significant adverse impact on noise. Since no significant noise impacts were identified, no mitigation is required or proposed.

13.	POPULATION AND HOUSING. Would the project:	Potentially Significant Impact	Less Than Significant Impact	No Impact
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)?			Ø
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?			abla
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?			Ø

#### 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), b) & c) The proposed project will not require any additional workers at the facility. No construction activities are required and no increase in the permanent number of workers at the terminal is required. The proposed project is not expected to result in the creation of any

industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of people or housing elsewhere in the District. Therefore, no impacts on population growth, either directly or indirectly, are expected.

Based upon these considerations, significant population and housing impacts are not expected from the implementation of the proposed project.

#### 13.3 MITIGATION MEASURES

Since no significant population and housing impacts were identified, no mitigation is required or proposed.

		Potentially Significant Impact	Less Than Significant Impact	No Impact
14.	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:			
	<ul><li>a) Fire protection?</li><li>b) Police protection?</li><li>c) Schools?</li><li>d) Parks?</li><li>e) Other public facilities?</li></ul>			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \

#### 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) & b) The PDTC facility receives police and fire protection services from the City of Long Beach. The facility is surrounded by fences and entry is restricted through entry and exit gates. The facility operates on a 24-hour basis so workers are always at the site. A 24-hour security

force operates at the facility. The proposed project would not increase the capacity of the facility or change the level of operations. The proposed project is not expected to increase the need or demand for additional public services (e.g., fire departments and police departments) above current levels.

14. c), d) & e) The proposed project will not require any additional workers at the facility. No construction activities are required and no increase in the number of permanent workers at the terminal is required. Thus, no adverse impacts are expected to local schools, parks, other public facilities or government services.

Based upon these considerations, significant public services impacts are not expected from the implementation of the proposed PDTC project.

#### 14.3 MITIGATION MEASURES

Since no significant public services impacts were identified, no mitigation is required or proposed.

15.	RECREATION.	Potentially Significant Impact	Less Than Significant Impact	No Impact
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?			Ø

#### 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 effects existing recreational opportunities.

#### 15.2 ENVIRONMENTAL SETTING AND IMPACTS

15. a) & b) The proposed project will not require any additional workers at the facility. No construction activities are required and no increase in the number of permanent workers at the terminal is required. Thus, no impacts are expected to recreational facilities and the proposed project would not require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

#### 15.3 MITIGATION MEASURES

The proposed project will not cause an overall significant adverse impact on recreation. Since no significant recreation impacts were identified, no mitigation is required or proposed.

16	SOLID/HAZARDOUS WASTE. Would the	Potentially Significant Impact	Less Than Significant Impact	No Impact
16.	project: would the			
a)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?		Ø	
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 and 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) No construction activities are associated with the proposed project so no waste will be generated from construction or demolition activities. The proposed project would not generate any additional solid or hazardous waste. Therefore, no impacts on landfills are expected from the proposed project.
- 16. b) The proposed project is not expected to adversely affect the PDTC's ability to comply with federal, state, and local solid/hazardous waste regulations, so no impacts on compliance is expected.

The proposed project will have no significant adverse impacts on solid/hazardous waste.

Since no significant solid/hazardous waste impacts were identified, no mitigation is required or proposed.

17.	TRANSPORTATION/TRAFFIC. Would the project:	Potentially Significant Impact	Less Than Significant Impact	No Impact
a)	Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?		V	
b)	Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?		Ø	
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?			$\square$
d)	Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?			团
e)	Result in inadequate emergency access or access to nearby uses?			
f)	Result in inadequate parking capacity?		$\square$	
g)	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?			

#### 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) & b) No construction activities will occur as part of the proposed project so no construction-related traffic impacts will occur.

The work force at the PDTC will not increase as a result of the proposed project. The proposed project may result in an increase in the maximum number of trucks that can visit the site by about 30 trucks per day. The facility operates 24 hours per day and the trucks are expected to visit the facility throughout the day, generating an increase of one to three trucks per hour. The contribution of PDTC to the local traffic in the port area is negligible since the additional traffic generated is only one to three trucks per hour. Therefore, no significant adverse traffic impacts are expected during the operational phase.

- 17. c) The PDTC facility does not require the transport of materials to or from the facility via air traffic. Thus, the proposed project will not change to existing air traffic patterns.
- 17. d) & e) The siting of the PDTC facility is consistent with surrounding industrial and portrelated land uses and traffic/circulation in the surrounding area has been designed to
  accommodate related truck traffic patterns. Thus, the proposed project is not expected to
  substantially increase traffic hazards or create incompatible uses at or adjacent to the PDTC
  facility. The proposed project is not expected to alter the existing long-term circulation patterns.
  Emergency access at the facility will not be impacted by the proposed project because only one
  barge or ship at a time can dock at the PDTC terminal. Further, PDTC will continue to maintain
  their existing emergency access and the emergency response plan will not need to be modified.
- 17. f) No significant adverse impacts on parking are expected due to implementation of the proposed project. No construction activities are expected and no increase in permanent workers are required at the PDTC facility due to the proposed project. No additional parking will be

needed because no increase in the PDTC work force is required. Therefore, no significant adverse impact on parking is expected as a result of the proposed project.

17. g) The proposed project will occur within the confines of the existing facility and the increase in truck traffic will be minimal, about one to three trucks per hour. The increase in truck traffic is not expected to conflict with policies supporting alternative transportation since the proposed project does not involve or affect alternative transportation modes (e.g. bicycles or buses).

Based upon these considerations, significant transportation/traffic impacts are not expected from proposed PDTC project.

#### 17.3 MITIGATION MEASURES

The proposed project will not cause an overall significant adverse impact on transportation/traffic. Since no significant transportation/traffic impacts were identified, no mitigation is required or proposed.

18.	MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less Than Significant Impact	No Impact
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?			Ø
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?		Ø	

#### 18.1 CHECKLIST RESPONSE EVALUATION

- 18. a) As shown in Section 4 Biological Resources and Section 5 Cultural Resources of this environmental checklist evaluation, the PDTC proposed project is not expected to reduce or eliminate any plant or animal species or destroy major periods of California history or prehistory. The affected site is part of an existing marine terminal facility, which has been previously graded, such that the proposed project is not expected to extend into environmentally sensitive areas, so that no significant adverse impacts are expected.
- 18. b) No project-specific significant impacts were identified for the proposed PDTC project. As a result, project-specific impacts do not contribute to significant adverse cumulative air quality impacts. Per CEQA Guidelines §15064(h)(4), 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. Since project-specific impacts are not significant they are not considered to be cumulatively considerable.
- 18. c) The analysis of the PDTC proposed project in this Negative Declaration concluded that hazards and hazardous materials impacts would not be significant since no change in the volumes or type of material transported and stored at the facility will change. Further, air quality impacts for the proposed project were analyzed in this Negative Declaration. No construction air quality impacts are expected and mobile source emissions from additional trucks that may occur on a peak day are substantially less than the applicable criteria and precursor pollutant significance thresholds. No significant adverse traffic impacts have been identified that would result from about up to 30 additional truck trips per day.

#### 19.0 Conclusion

Based on the environmental analysis prepared for the currently proposed project, the SCAQMD has quantitatively and qualitatively demonstrated that the proposed project will not generate any significant adverse impacts and meets the qualifications for the preparation of a Negative Declaration per the requirements of CEQA Guidelines §15070.

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#### **ACRONYMS**

#### ABBREVIATION DESCRIPTION

AQMD Air Quality Management District
AQMP Air Quality Management Plan

ARB Air Resources Board

BACT Best Available Control Technology

Basin South Coast Air Basin

BBL Barrel

CAA Clean Air Act

CAAA Clean Air Act Amendments

CAAQS California Ambient Air Quality Standards

CAPCOA California Air Pollution Control Officers Association

CARB California Air Resources Board
CCR California Code of Regulations
CEOA California Environmental Quality

CEQA California Environmental Quality Act

CFR Code of Federal Regulations

CIWMB California Integrated Waste Management Board

CO Carbon monoxide CO<sub>2</sub> Carbon dioxide

CUP Conditional Use Permit

dBA A-weighted noise level measurement in decibels

DOT Department of Transportation

DTSC California Environmental Protection Agency, Department of Toxic

Substances Control

DWR California Department of Water Resources

DWT Dead Weight Ton

EIR Environmental Impact Report

ERPG Emergency Response Planning Guideline

°F Degrees Fahrenheit

IS Initial Study o'K degrees Kelvin

lbs pounds

lbs/hr pounds per hour
LOS Level of Service
m/s meters per second

MMscf Million Standard Cubic Feet

N<sub>2</sub> nitrogen NH<sub>3</sub> Ammonia

NAAQS National Ambient Air Quality Standards

nanograms/m<sup>3</sup> nanograms per cubic meter

NESHAPS National Emission Standards for Hazardous Air Pollutants
NIOSH National Institute of Occupational Safety and Health

NOP Notice of Preparation

NOx nitrogen oxide

NPDES National Pollutant Discharge Elimination System

NSPS New Source Performance Standards

NSR New Source Review

OSHA Occupational Safety and Health Administration

PDTC Petro-Diamond Terminal Company

PM10 particulate matter less than 10 microns in diameter PM2.5 particulate matter less than 2.5 microns in diameter

Port of Long Beach

ppbv parts per billion by volume

ppm parts per million

ppmv parts per million by volume ppmw parts per million by weight PRC Public Resources Code psi pounds per square inch

psia pounds per square inch absolute psig pounds per square inch (gauge)

RCRA Resource Conservation and Recovery Act

RWQCB Regional Water Quality Control Board, Los Angeles Region

SCAB South Coast Air Basin

SCAG Southern California Association of Governments SCAQMD South Coast Air Quality Management District

SCH State Clearinghouse SO<sub>2</sub> sulfur dioxide SOx sulfur oxide

SPCC Spill Prevention, Control and Countermeasure

SWPPP Stormwater Pollution Prevention Plan SWRCB State Water Resources Control Board

TACs toxic air contaminants

USDOT United States Department of Transportation
U.S. EPA United States Environmental Protection Agency

USC United States Code

USGS United States Geological Society VOC volatile organic compounds

#### **GLOSSARY**

TERM	DEFINITION
Ambient Noise	The background sound of an environment in relation to which all additional sounds are heard
Barrel	42 gallons.
dBA	The decibel (dDB) is one tenth of a bel where one bel represents a difference in noise level between two intensities I <sub>1</sub> , I <sub>0</sub> where one is ten times greater than the other. (A) indicates the measurement is weighted to the human ear.
Hydrocarbon	Organic compound containing hydrogen and carbon, commonly occurring in petroleum, natural gas, and coal.
$L_{50}$	Sound level exceeded 50 percent of the time (average or mean level)
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.
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.



**EMISSION CALCULATIONS** 

# Truck Emissions Increase

On Road Mobile Emission Factors from California ARB EMFAC2007 Scenario Year 2007 (Model Years 2002 to 2007)

							00
	8	_ ∳	<u>*</u>	*0%	PW440	PM2.5	3
	Emissions	Emission	Emissions	Emissions	Emissions	Emissions	Emissions
	Factor	Factor	Factor	Factor	Factor	Factor	Factor
Vehicle Type	( <del>lb/milo</del> )	(elim/dl)	(lb/mile)	(lb/mile)	(llþ/mile)	(lb/mile)	(Ib/mile)
Delivery Trucks	0.005109	0.001108	0.025305	0.000003799	0.001304	0.00127792	4.14055081

	8	Emissions	7452.99	7452.99
	PM2.5	Emissions	2:30	2:30
be/day	PM10	Emissions	2.35	2.35
Poak Day Emissions, Ibs/day	*Os	Emissions	20.0	20:0
Peak Da	*ON	Emissions	45.55	45.55
	<del>100</del>	Emissions	<del>1.99</del>	<del>1.99</del>
	93	Emissions	9.20	9:20
	Distance- Traveled per	Day	4800	
noters	Distance- Traveled per	i‡	æ	
Parameter	Trips per Dav per	Vehicle	Ci	
	Number of Vehicles per	Day	30	
		Source	Jelivery Trucks	Fotals

Based on California ARB EMFAC2007 model years 2002-2007, South Coast AQMD Average Annual for Heavy Heavy-Trucks

Peak Day Emissions = Emission Factor x Distance Travelled per Day

# Table A-1 Truck Emissions Increase

On Road Mobile Emission Factors from California ARB EMFAC2007 Scenario Year 2007 (Model Years 2002 to 2007)

	00	NOC	XON	SOx	PM10	PM2.5	CO
	Emissions	Emission	Emissions	Emissions	Emissions	Emissions	Emissions
	Factor	Factor	Factor	Factor	Factor	Factor	Factor
Vehicle Type	(Ib/mile)	(lp/mile)	(lp/mile)	(Ip/mile)	(lb/mile)	(Ib/mile)	(Ib/mile)
Delivery Trucks	0.005109	0.001108	0.025305	0.00003799	0.001304	0.00127792	4.14055081

Number of Trips per Distance Distance Vehicles per Traveled per Traveled per Traveled per Traveled per Day Emissions Emissions Emissions Pering Trucks 30 2 30 1800 9.20 1.99 4			Darar	motore				Peak Da	Peak Day Emissions Ibs/day	lbs/dav		
Number of Vehicles per Vehicles per Vehicles at Vehicles         Display of Traveled per T			5						,			
Vehicles per Day per Day         Traveled per Traveled per Traveled per Day         CO NOC NOX SOX           Day         Vehicle Trip Day         Emissions Emissions Emissions Emissions Emissions Emissions 0.07           Y Trucks 30 2 30 1800 9.20 1.99 45.55 0.07         1.99 45.55 0.07		Number of	Trips per	Distance	Distance							
Day         Vehicle         Trip         Day         Emissions         Emissions         Emissions         Emissions           y Trucks         30         2         30         1800         9.20         1.99         45.55         0.07		Vehicles per	Day per	Traveled per	Traveled per		00 0	ŠON	SOx	PM10	PM2.5	co Co
y Trucks         30         1800         9.20         1.99         45.55         0.07	Source	Day	Vehicle	Trip	Day		Emissions	Emissions	Emissions	Emissions	Emissions	Emissions
0.07		30	2	30	1800	9.20	1.99	45.55	0.07	2.35	2.30	7452.99
	Totals					9.20	1.99	45.55	0.07	2.35	2.30	7452.99

Based on California ARB EMFAC2007 model years 2002-2007, South Coast AQMD Average Annual for Heavy Heavy-Duty Trucks

Peak Day Emissions = Emission Factor x Distance Travelled per Day

# Evaluation of Ship Emissions for the PetroDiamond Terminal - Ship Equivalence (Per Visit Basis)

**Emissions from One Currently Permitted Ship (pounds)** 

Activity	NOx	CO	HC	PM10	PM2.5	SOx
		Main	<b>Propulsion</b>			
Cruising	<del>25969.66</del>	<b>200</b> 8.70	860.87	<del>2754.79</del>	<del>2209.57</del>	15065.27
Maneuvering	<del>577.48</del>	<del>96.47</del>	<del>130.73</del>	96.45	<del>75.51</del>	72.35
<b>Hotelling</b>	0.00	0.00	0.00	<del>0.0<b>0</b></del>	0.00	0.00
<del>Total</del>	<del>26547.14</del>	<del>2105.18</del>	991.61	<del>2851.2<b>4</b></del>	<del>2285.08</del>	<del>15137.63</del>
		A	uxiliary			
Cruising	85.31	<del>6.75</del>	<del>2.45</del>	1.84	1.47	<del>26.39</del>
Maneuvering	43.80	3.47	<del>1.26</del>	0.95	0.76	<del>13.55</del>
<b>Hotelling</b>	1137.73	<del>90.0</del> 4	<del>32.74</del>	<del>24.5</del> 6	<del>19.64</del>	<del>351.96</del>
Total	<del>1266.8</del> 4	100.25	<del>36.46</del>	<del>27.34</del>	<del>21.87</del>	391.90
			<del>Totals</del>			
<b>Cruisi</b> ng	<del>26054.97</del>	<del>2015.45</del>	<del>863.33</del>	<del>2756.63</del>	<del>2211.05</del>	<del>15091.67</del>
Maneuvering	621.28	99.94	<del>132.00</del>	<del>97.40</del>	<del>76.26</del>	<del>85.90</del>
<b>Hotelling</b>	1137.73	90.04	<del>32.74</del>	<del>24.56</del>	<del>19.64</del>	<del>351.96</del>
Grand Total	27813.99	<b>220</b> 5.43	<del>1028.06</del>	<del>2878.59</del>	<del>2306.95</del>	<del>15529.53</del>

#### Emissions from One Barge (pounds)

Activity	NOx	CO	HC	PM10	PM2.5	SOx
		Main	Propulsion			
Cruising	890.79	69.99	31.81	4 <del>5.8</del> 1	<del>36.90</del>	<del>731.72</del>
Maneuvering	890.79	69.99	<del>31.81</del>	4 <del>5.81</del>	<del>36.90</del>	<del>731.72</del>
<b>Hotelling</b>	0.00	0.00	0.00	0.00	0.00	0.00
<del>Total</del>	<del>1781.58</del>	<del>139.98</del>	<del>63.63</del>	<del>91.62</del>	<del>73.81</del>	1463.44
		Д	uxiliary			
<u>Cruising</u>	23.43	<del>1.93</del>	0.86	<del>0.64</del>	<del>0.52</del>	9.24
<b>Mane</b> uvering	<del>54.07</del>	4.46	1.98	1.49	<del>1.19</del>	21.33
Hotelling	<del>26.43</del>	<del>2.18</del>	0.97	0.73	0.58	10.43
Total	103.93	8 <del>.5</del> 8	3.81	<del>2.86</del>	2.29	41.00
			<del>Totals</del>			
Cruising	914.22	71.93	<del>32.67</del>	46.46	37.42	740.96
Maneuvering	944.86	74.45	33.80	47.30	38.09	<del>753.05</del>
Hotelling	26.43	<del>2.18</del>	0.97	0.73	0.58	10.43
Grand Total	1885.51	<del>148.56</del>	67.44	94.48	<del>76.10</del>	1504.44

#### **Ship Equivalence (pounds)**

	NOx	CO	HC	PM10	PM2.5	x <del>O</del> 2
Ship Totals	<del>27813.99</del>	<del>22</del> 05.43	<del>1028.06</del>	<del>2878.59</del>	2306.95	<del>15529.53</del>
<b>Barge Totals</b>	<del>1885.51</del>	<del>148.56</del>	67.44	94.48	<del>76.10</del>	<del>1504.44</del>
Equivalence	14	14	<del>15</del>	<del>30</del>	<del>30</del>	<del>10</del>

(1) PM2.5 is ratioed from PM10 using the SCAQMD PM2.5 ratio for Ships, Liquid Fuel, http://www.aqmd.gov/ceqa/handbook/PM2\_5/finalAppA.doc

# Evaluation of Ship Emissions for the PetroDiamond Terminal - Ship Equivalence (Per Visit Basis)

**Emissions from One Currently Permitted Ship (Tanker) (pounds)** 

Activity	NOx	co	НС	PM10	PM2.5	SOx			
		Main	Propulsion						
Cruising	2886.22	223.24	95.68	239.19	191.35	1674.33			
<b>Mane</b> uvering	74.15	12.69	9.83	9.11	7.12	14.73			
<b>Hotell</b> ing	0.00	0.00	0.00	0.00	0.00	0.00			
Total	<b>2960</b> .38	<b>235</b> .93	105.51	248.30	198.47	1689.06			
		Α	uxiliary						
Cruising	191.93	15.19	5.52	4.14	2.76	59.37			
<b>Mane</b> uvering	44.99	3.56	1.29	0.97	0.65	13.92			
Hotelling	565.40	44.74	16.27	12.20	8.14	174.91			
Total	802.31	63.49	23.09	17.32	11.54	248.20			
Boiler									
Cruising	0.00	0.00	0.00	0.00	0.00	0.00			
<b>Mane</b> uvering	1.72	0.16	0.08	0.65	0.65	13.50			
Hotelling	248.15	23.63	11.82	94.53	94.53	1949.75			
Total	249.87	23.80	11.90	95.19	95.19	1963.25			
			Totals						
Cruising	3078.16	238.43	101.20	243.33	194.11	1733.70			
<b>Mane</b> uvering	120.86	16.41	11.21	10.74	8.42	42.14			
Hotelling	813.55	68.38	28.09	106.74	102.67	2124.66			
Grand Total	4012.56	323.22	140.50	360.81	305.20	3900.51			

**Emissions from One Barge (pounds)** 

Activity	NOx	CO	HC	PM10	PM2.5	SOx
		Main	Propulsion			
Cruising	1061.65	83.42	37.92	113.75	91.00	872.07
<b>Mane</b> uvering	22.50	3.89	2.80	3.37	2.63	8.36
Hotelling	0.00	0.00	0.00	0.00	0.00	0.00
Total	1084.15	<b>87</b> .30	<b>40</b> .72	117.12	93.63	880.43
		Α	uxiliary			
Cruising	45.90	3.63	1.32	0.99	0.66	14.20
<b>Mane</b> uvering	19.80	1.57	0.57	0.43	0.28	6.13
<b>Hotel</b> ling	73.76	5.84	2.12	1.59	1.06	22.82
Total	139.47	11.04	4.01	3.01	2.01	43.15
			Totals		_	
Cruising	1107.55	87.05	39.24	114.74	37.42	886.27
<b>Mane</b> uvering	42.31	5.46	3.37	3.80	38.09	14.49
Hotelling	73.76	5.84	2.12	1.59	0.58	22.82
Grand Total	1223.62	98.34	44.73	120.13	76.10	923.58

Ship Equivalence (pounds)

	NOx	CO	HC	PM10	PM2.5	SOx
Ship Totals	4012.56	323.22	140.50	360.81	305.20	3900.51
Barge Totals	1223.62	98.34	44.73	120.13	76.10	923.58
Equivalence	3.3	3.3	3.1	3.0	4.0	4.2

<sup>(1)</sup> PM2.5 is ratioed from PM10 using the SCAQMD PM2.5 ratio for Ships, Liquid Fuel, http://www.aqmd.gov/ceqa/handbook/PM2\_5/finalAppA.doc

#### Evaluation of Ship Emissions for the PetroDiamond Terminal - Ship Parameters -

**Ship Parameters** 

	Avg Main	Avg Max		Avg Aux	Avg Total Aux		Unloading
	Power		. •	Power/Engine		Max Capacity	Rate-
Size	(kW) <sup>(1)</sup>	<del>(knots)<sup>(1)</sup></del>	Aux Engines (2)	<del>(kW)<sup>(2)</sup></del>	(kW) <sup>(2)</sup>	(bbls)	(bbl/hour)
25K-50K DWT Tankers	97679	<del>14.75</del>	<del>2.94</del>	<del>675</del>	<del>1985</del>	350000	6000
Barges/Ocean-going-Tugs	<del>335</del> 6	-	2	<del>125</del>	<del>250</del>	<del>100000</del>	6000

**Average Barrels of Fuel Unloaded** 

	Currently					-
	Permitted	<del>2000</del>	2001	<del>2002</del>	<del>2003</del>	2004
Barges	-	-	<del>59,622</del>	<b>4</b> 6,488	<del>52,108</del>	<b>30</b> ,924
Tankers	<del>167,500</del>	-	-	-	-	-

Activity Log

Activity		Currently Permitted Time for Peak 24-Hour Day (Hours) <sup>(3)</sup>	Currently Permitted Avg Time per Visit (Hours)	Proposed Time for Peak 24-Hour Day (Hours)	Proposed Avg Time per Visit (Hours)	Main Engine Load Factor <sup>(4)</sup>	Aux-Engine- Load Factor <sup>(5)</sup>
			<del>25-50</del>	DWT Tankers			
Cruising <sup>(6)</sup>		4.25	8 <del>.50</del>			0.78	0.17
Maneuvering <sup>(7)</sup>		0.75	1.60			0.02	0.45
Hotelling <sup>(8)</sup>		19.00	<del>27.92</del>			0.00	0.67
	Total	24.00	<del>38.02</del>				
			Barges/O	<del>cean going Tugs</del>			
Cruising <sup>(6)</sup>				<del>12</del>	<del>12</del>	0.43	0.20
Maneuvering <sup>(7)</sup>				<del>1.60</del>	<del>1.60</del>	0.43	0.45
Hotelling <sup>(8)</sup>				9.94	9.94	0.00	0.22
	Total			<del>23.54</del>	<del>23.54</del>		

All Tables and Figures are referenced from The Port of Los Angelos - Port-wide Baseline Air Emissions Inventory - July 2005

<sup>(1)</sup> Table 2.26 for Tankers; Barges are considered Line Haul Towboats (pg.151), 1 Horsepower = .75 kiloWatts.

<sup>(2)</sup> Table 2.27

<sup>(3)</sup> Hotelling for the current permit conditions exceeds 24 hours. Peak day consists of entry cruising, entry maneuvering, and 10 hours of hotelling.

<sup>(4)</sup> Load Factor = (Speed/Max Speed)<sup>A</sup>3; Maneuvering Load Factor is taken at 2% minimum. Table 3.9 for Barges.

<sup>(5)</sup> Table 2.19; Cruising Lead Factor is 75% Fairway and 25% Presautionary Zone Loading Factors.

<sup>(6)</sup> Cruising Time is time required to travel through the Fairway and Precautionary Zone (66 miles one way) at 13.6 knots for Tankers and 9.4 knots for Barges.

<sup>(7)</sup> Arrival is depicted in Figure 2.28. Departure is depicted in Figure 2.29.

<sup>(8)</sup> Hotelling = Maximum Average Fuel Unloaded (bbl) / Unloading Rate (bbl/hr)

#### Evaluation of Ship Emissions for the PetroDiamond Terminal - Ship Parameters -

**Ship Parameters** 

	Avg Main	Avg Total			Boiler -	
	Power	Aux Power	Max Capacity	Unloading	Maneuvering	Boiler -
Size	(kW) <sup>(1)</sup>	(kW) <sup>(2)</sup>	(bbis)	Rate (bbl/hour)	(kW) <sup>(3)</sup>	Hoteling (kW)(3)
Panamax Tankers	10696	2542	350000	6000	371	3000
Barges/Ocean-going Tugs	4598	820.6	100000	6000		

Average Barrels of Fuel Unloaded

	Typical	2004		0000	2224			
	Delivery <sup>(4)</sup>	2001	2002	2003	2004	2005	2006	2007
Barges	-	59,622	46,488	52,108	30,924	55839.06	31885.72	80000
Tankers	167,500	•		-	-			

Activity Log

Activity Log	Currently Permitted Time for Peak	Currently Permitted Avg Time	Proposed Time for Peak	Proposed Avg Time		
	24-Hour Day	per Visit	24-Hour Day	per Visit	Main Engine Load	Aux Engine
Activity	(Hours) <sup>(5)</sup>	(Hours)	(Hours)	(Hours)	Factor <sup>(6)</sup>	Load Factor <sup>(7)</sup>
		Panama	x Tankers			
Cruising - Fairway Zone <sup>(8)</sup>	3.30	6.60			0.80	0.24
Cruising - Speed Reduction Zone <sup>(6)</sup>	1.17	2.33			0.51	0.24
Cruising - Precautionary Zone <sup>(8)</sup>	0.67	1.33			0.22	0.24
Maneuvering <sup>(9)</sup>	1	1.75			0.034	0,33
Hotelling <sup>(10)</sup>	17.87	27.92			0.00	0.26
Total	24.00	39.93				
		Barges/Ocea	n-going Tugs			
Cruising - Fairway Zone <sup>(8)</sup>			5.25	7.07	0.80	0.17
Cruising - Speed Reduction Zone <sup>(8)</sup>			2.33	2.33	0.63	0.17
Cruising - Precautionary Zone <sup>(8)</sup>			1.33	1.33	0.27	0.17
Maneuvering <sup>(9)</sup>			1.75	1.75	0.041	0.45
Hotelling <sup>(10)</sup>			13.33	13.33	0.00	0.22
Total			24.00	25.82		

All Tables are referenced from The Port of Long Beach Air Emissions Inventory - 2005, September 2007

- (1) Table 2.19, pg.82 for tankers and ocean-going tugs based on engine data from vessels calling at PetroDiamond from 2004-2007.
- (2) Table 2.19, pg 82 for tankers and Table 3.2, pg 96 for barges.
- (3) Table 2.13, pg 74. Boilers only operate during maneuvering and hotelling.
- (4) Estimated ship capacity in previous SCAQMD Permit to Operate.
- (5) Hotelling for the current permit conditions exceeds 24 hours. Peak day consists of entry cruising, entry maneuvering, and the remainder hotelling hours of hotelling.
- (6) Load Factor = (Speed/Max Speed)^3; Maneuvering Load Factor is taken at 2% minimum. Table 3.9 for Barges. Table 2.9 for Maneuvering Load Factor during arrival.
- (7) Table 2.12, pg 72.
- (8) Cruising Time is time required to travel through the Fairway and Precautionary Zone (66 nautical miles one way) as calculated below.
- Cruising Times

	distance.	Tanker	Ocean Tug	Tanker	Ocean Tug
Distance from Port	nmiles			time in zone, hours	
from 66 nmiles to speed reduction zone (at 20 nmiles) <sup>(b)</sup>	46.00	13.94	13.01	3.30	3.54
from 20 nmiles to precautionary zone (at 6 nmiles)(c)	14.00	12	12	1.17	1.17
through precautionary zone	6.00	9	9	0.67	0.67
maneuvering	varies	5	5		
Max, Speed, knots <sup>(d)</sup>		15	14		

- (a) Table 2.4 for precautionary zone
- (b) Based on 80% engine load.
- (c) Vessel Speed Reduction Program calls for voluntary speed reduction to 12 knots at a distance of 20 nm from Point Fermin. Pg 22.
- (d) Table 2.9, pg 68
- (9) Section 2.5.6 Main Engine Maneuvering Loads. Pg. 67.
- (10) Hotelling = Maximum Average Fuel Unloaded (bbl) / Unloading Rate (bbl/hr)

# **Evaluation of Ship Emissions for the PetroDiamond Terminal** - Currently Permitted 25,000-50,000 DWT Ships Per Visit -

#### **Emission Factors**

	NOx	<del>co</del>	HC	PM10	PM2.5	SOx
Engine Type	<del>(g/kW-hr)</del>	<del>(g/kW-hr)</del>	<del>(g/kW-hr)</del>	<del>(g/kW-hr)</del>	<del>(g/kW-hr)</del>	<del>(g/kW-hr)</del>
Main Propulsion (1)	<del>18.10</del>	<del>1.40</del>	<del>0.60</del>	<del>1.92</del>	1.54	10.50
Auxiliary (2)	<del>13.90</del>	<del>1.10</del>	0.40	0.30	0.24	4.30

#### Low-Loading Factor Emission Adjustment Factors (3)

Loading Factor	NOx	co	HC	PM10	PM2.5	SOx
2%	4. <del>63</del>	10.00	<del>31.62</del>	7.29	<del>7.12</del>	1.00

#### 25K-50K DWT Ship Emissions (grams)(4)

Activity	NOx	CÓ	HC	PM10	PM2.5	SOx			
		Main F	Propulsion	<del></del>	<u> </u>				
Cruising	11779839.40	911147.80	390491.91	<del>1249574.12</del>	1002262.58	<b>68</b> 33608.49			
Maneuvering	<del>261945.38</del>	<del>43760.19</del>	<del>59301.31</del>	43750.19	34249.11	32820.14			
Hotelli <b>ng</b>	0.00	0.00	0.00	0.00	0.00	0.00			
<del>Total</del>	12041784.78	954907.99	449793.23	<del>1293324.31</del>	1036511.69	<b>68</b> 66428.64			
Auxiliary									
Cruising	38697.08	3062.36	1113.59	<del>835.19</del>	668.15	<del>11971.04</del>			
Maneuvering	19865.88	<del>1572.12</del>	<del>571.68</del>	4 <del>28.76</del>	343.01	6145.56			
Hotelling	516076.01	40840.55	14851.11	11138.33	8910.67	<del>159649.41</del>			
Total	574638.97	45475.03	<del>16536.37</del>	<del>12402.28</del>	9921.82	<del>177766.01</del>			
		7	<del>otals</del>			57			
Cruising	11818536.48	914210.16	391605.50	1250409.31	1002930.73	<b>68</b> 45579.53			
Maneuvering	281811.26	45332.31	59872.99	44178.95	34592.11	38965.70			
Hotelling	516076.01	40840.55	<del>14851.11</del>	11138.33	8910.67	<del>15</del> 9649.41			
Grand Total	12616423.76	1000383.02	466329.60	1305726.59	1046433.51	<b>70</b> 44194.65			

#### 25K-50K DWT Ship Emissions (pounds)(5)

Activity	NOx	CO	HC	PM10	PM2.5	SOx
		Main F	Propulsion			***************************************
Cruising	<del>25969.66</del>	2008.70	860.87	<del>2754.79</del>	<del>2209.57</del>	<del>15065.27</del>
Maneu <b>vering</b>	<del>577.48</del>	96.47	<del>130.73</del>	<del>96.45</del>	<del>75.51</del>	<del>72.35</del>
Hotelling	0.00	0.00	0.00	0.00	0.00	0.00
Total	26547.14	2105.18	991.61	<del>2851.24</del>	2285.08	<del>15137.6</del> 3
		Au	xiliary			
Cruising	85.31	6.75	<del>2.45</del>	1.84	1.47	26.39
Maneuvering	43.80	3.47	<del>1.26</del>	0.95	0.76	13.55
Hotelling	1137.73	90.04	32.74	24.56	<del>19.64</del>	<del>351.96</del>
<del>Total</del>	1266.84	<del>100.25</del>	<del>36.46</del>	<del>27.34</del>	21.87	<del>391.90</del>
		7	<del>otals</del>			
Cruising	<del>26054.97</del>	<del>2015.45</del>	863.33	<del>2756.63</del>	<del>2211.05</del>	<del>15091.67</del>
Maneuvering	621.28	99.94	<del>132.00</del>	97.40	<del>76.26</del>	8 <del>5.9</del> 0
Hotelling	1137.73	90.04	<del>32.7</del> 4	<del>24.56</del>	<del>19.6</del> 4	<del>351.96</del>
Grand Total	27813.99	2205.43	1028.06	2878.59	2306.95	<del>15529.53</del>

All Tables are referenced from The Port of Los Angeles - Port wide Baseline Air Emissions Inventory - July 2005

<sup>(1)</sup> Table 2.20

<sup>(2)</sup> Table 2.22

<sup>(3)</sup> Table 2.21, Except for PM2.5 which is based on the PM10 to PM2.5 ratio from SCAQMD PM2.5 ratio for Ships, Liquid Fuel, http://www.aqmd.gov/ceqa/handbook/PM2\_5/finalAppA.doc

<sup>(4)</sup> Emissions = Emission Factor \* Engine Power \* Time \* Loading Factor \* Adjustment Factor

<sup>(5) 1</sup> pound = 453.6 grams

#### Evaluation of Ship Emissions for the PetroDiamond Terminal - Currently Permitted Ships Per Visit -

#### **Emission Factors**

	NOx	CO	HC	PM10	PM2.5 (g/kW-	SOx
Engine Type	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	hr)	(g/kW-hr)
Main Propulsion <sup>(1)</sup>	18.10	1.40	0.60	1.50	1.20	10.50
Auxiliary <sup>(2)</sup>	13.90	<b>1.1</b> 0	0.40	0.30	0.20	4.30
Boiler <sup>(3)</sup>	2.10	0.20	0.10	0.80	0.80	16.50

Low-Loading Factor Emission Adjustment Factors (4)

	Loading Factor	NOx	CO	HC	PM10	PM2.5	SOx
L	3%	2.92	6.46	11.68	4.33		1.00

Ship Emissions (grams)<sup>(5)</sup>

Ship Emissions (grams)	·1							
Activity	NOx	CO	HC	PM10	PM2.5	SOx		
Main Propulsion								
Cruising - Fairway	<b>102215</b> 0.89	79061.39	33883.45	84708.64	67766.91	592960.46		
Crusing - Speed Reduction	<b>23128</b> 4.60	17889.42	7666.89	19167.23	15333. <b>79</b>	134170.62		
Cruising - Precautionary	<b>557</b> 56.11	4312.63	1848.27	4620.67	3696.54	32344. <b>7</b> 0		
Cruising - Total	<b>1309191</b> .59	101263.44	43398.62	108496.54	86797.23	759475.79		
Maneuvering	<b>336</b> 35.65	5755. <b>71</b>	4459.98	4133.50	<b>3227</b> .43	6682.33		
Hotelling	0.00	0.00	0.00	0.00	0.00	0.00		
Total	<b>1342827</b> .24	10701 <b>9.1</b> 5	47858.59	112630.04	90024.67	<b>7661</b> 58.11		
		Auxil	iary					
Cruising - Fairway	<b>559</b> 66.31	4428.99	1610.54	1207.91	805.27	17313.32		
Crusing - Speed Reduction	<b>197</b> 86.93	1565.87	569.41	427.06	284.70	6121.14		
Cruising - Precautionary	1 <b>13</b> 06.82	894.78	325.38	244.03	162.69	3497.79		
Cruising - Total	<b>870</b> 60.05	6889.64	2505.33	1878.99	1252.66	26932.25		
Maneuvering	<b>204</b> 05.27	<b>1</b> 614.81	587.20	440.40	293.60	6312.42		
Hotelling	<b>2564</b> 64.50	20295.75	7380.27	5535.21	3690.14	79337 <b>.9</b> 4		
Total	<b>36392</b> 9.82	28800.20	10472.80	7854.60	5236.40	112582. <b>61</b>		
		Boi	ler					
Cruising	0.00	0.00	0.00	0.00	0.00	0.00		
Maneuvering	<b>7</b> 79.10	74.20	37.10	296.80	296.80	61 <b>21</b> .50		
Hotelling	<b>1125</b> 60.90	10720.09	5360.04	42880.34	42880.34	884407.10		
Total	<b>1133</b> 40.00	10794.29	5397.14	431 <b>77.1</b> 4	43177.14	890528. <b>60</b>		
	Totals							
Cruising	<b>13962</b> 51.64	108153.08	45903.94	110375.53	88049.90	786408.03		
Maneuvering	54820.02	<b>7</b> 444.72	5084.28	4870.70	3817.83	<b>19116.2</b> 5		
Hotelling	<b>3690</b> 25.40	31015.84	12740.32	<b>4841</b> 5.55	46570.48	<b>9637</b> 45.04		
Grand Total	1820097.06	146613.64	63728.54	163661.78	138438.21	1769269.32		

Ship Emissions (pounds)(6)

Snip Emissions (pound						
Activity	NOx	CO	HC	PM10	PM2.5	SOx
		Main Prop	oulsion			
Cruising	<b>28</b> 86.22	223.24	95.68	239.19	191.35	1674.33
Maneuvering	<b>7</b> 4.15	12.69	9.83	9.11	7.12	14.73
Hotelling	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>29</b> 60.38	235.93	105.51	248.30	198.47	1689.06
		Auxilia	ary			
Cruising	191.93	15.19	5.52	4.14	2.76	59.37
Maneuvering	44.99	3.56	1.29	0.97	0.65	13.92
Hotelling	<b>5</b> 65.40	44.74	16.27	12.20	8.14	174.91
Total	802.31	63.49	23.09	17.32	11.54	248.20
		Boile	ər			
Cruising	0.00	0.00	0.00	0.00	0.00	0.00
Maneuvering	1.72	0.16	0.08	0.65	0.65	13.50
Hotelling	248.15	23.63	11.82	94.53	94.53	1949. <b>7</b> 5
Total	<b>2</b> 49.87	23.80	11.90	95.19	95.19	1963.25
		Tota	ls			
Cruising	<b>30</b> 78.16	238.43	101.20	243.33	194.11	1733.70
Maneuvering	120.86	16.41	11.21	10.74	8.42	42.14
Hotelling	<b>8</b> 13.55	68.38	28.09	106.74	102.67	2124.66
Grand Total	<b>40</b> 12.56	323.22	140.50	360.81	305.20	3900.51

All Tables are referenced from The Port of Long Beach Air Emissions Inventory - 2005, September 2007

<sup>(1)</sup> Table 2.5

<sup>(2)</sup> Table 2.11

<sup>(3)</sup> Boiler emission factors provided by Andy Alexis from CARB. Personal communication May 30, 2008.

<sup>(4)</sup> Table 2.8, Except for PM2.5 which is based on the PM10 to PM2.5 ratio from SCAQMD PM2.5 ratio for Ships, Liquid Fuel, http://www.aqmd.gov/ceqa/handbook/PM2\_5/finalAppA.doc

<sup>(5)</sup> Emissions = Emission Factor \* Engine Power \* Time \* Loading Factor \* Adjustment Factor

<sup>(6) 1</sup> pound = 453.6 grams

# -Evaluation of Ship Emissions for the PetroDiamond Terminal -Full Barges/Ocean-going Tugs -

#### **Emission Factors**

	NOx	CO	HC	PM10	PM2.5	SOx
Engine Type	<del>(g/kW-hr)</del>	<del>(g/kW-hr)</del>	<del>(g/kW-hr)</del>	<del>(g/kW-hr)</del>	<del>(g/kW-hr)</del>	(g/kW-hr)
Main Propulsion (1)	<del>14.00</del>	<del>1.10</del>	0.50	0.72	<del>0.5</del> 8	11.50
Auxiliary <sup>(2)</sup>	<del>10.90</del>	0.90	0.40	0.30	0.24	4.30

#### Barge Emissions (grams)(3)

Activity	NOx	CO	HC	PM10	PM2.5	SOx		
	Main Propulsion							
Cruising	242437.44	<del>19048.66</del>	8658.48	12468.21	10043.84	199145.04		
<b>Maneuve</b> ring	32324.99	<del>2539.82</del>	<del>1154.46</del>	1662.43	1339.18	26552.67		
Hotelling	0.00	0.00	0.00	0.00	0.00	0.00		
<del>Total</del>	274762.43	<del>21588.48</del>	9812.94	<del>14130.64</del>	11383.02	225697.71		
		Au	xiliary					
Cruising	6376.50	<del>526.50</del>	<del>234.00</del>	<del>175.50</del>	140.40	<del>2515.50</del>		
Maneuvering	1962.00	<del>162.00</del>	<del>72.00</del>	<del>54.00</del>	4 <del>3.20</del>	774.00		
Hotelling	<del>5957.21</del>	491.88	<del>218.61</del>	<del>163.9</del> 6	131.17	2350.09		
Total	14295.71	<del>1180.38</del>	<del>524.61</del>	<del>393.46</del>	<del>314.77</del>	5639.59		
		7	<del>otals</del>					
Cruising	248813.94	<del>19575.16</del>	<del>8892.48</del>	12643.71	10184.24	201660.54		
Maneuvering	34286.99	<del>2701.82</del>	<del>1226.46</del>	<del>1716.43</del>	1382.38	27326.67		
Hotelling	<del>5957.21</del>	<del>491.88</del>	<del>218.61</del>	<del>163.96</del>	<del>131.17</del>	2350.09		
Grand Total	289058.14	<del>22768.86</del>	<del>10337.56</del>	<del>14524.10</del>	<del>11697.78</del>	231337.30		

#### Barge Emissions (pounds)(4)

Activity	NOx	CO	HC	PM10	PM2.5	SOx		
	Main Propulsion							
Cruising	<del>534.47</del>	41.99	19.09	<del>27.49</del>	22.14	439.03		
Maneuvering	<del>71.26</del>	<del>5.60</del>	<del>2.55</del>	<del>3.6</del> 6	<del>2.9</del> 5	<del>58.5</del> 4		
Hotelling	0.00	0.00	0.00	0.00	0.00	0.00		
<del>Total</del>	605.74	47.59	<del>21.63</del>	31.15	<del>25.09</del>	497.57		
		Au	xiliary					
Cruising	14.06	<del>1.16</del>	<del>0.52</del>	0.39	0.31	5.55		
<b>Maneuvering</b>	4.33	0.36	<del>0.16</del>	0.12	0.10	1.71		
Hotelling	13.13	1.08	0.48	<del>0.36</del>	0.29	5.18		
<del>Total</del>	31.52	<del>2.60</del>	<del>1.16</del>	<del>0.87</del>	0.69	<del>12.43</del>		
		Ŧ	<del>otals</del>					
Cruising	<del>548.53</del>	4 <del>3.16</del>	<del>19.60</del>	<del>27.87</del>	<del>22.45</del>	444.58		
Maneuvering	<del>75.59</del>	<del>5.96</del>	<del>2.70</del>	3.78	<del>3.05</del>	60.24		
Hotelling	13.13	<del>1.08</del>	0.48	<del>0.36</del>	0.29	5.18		
Grand Total	<del>637.25</del>	<del>50.20</del>	<del>22.79</del>	<del>32.02</del>	<del>25.79</del>	<del>510.00</del>		

All Tables are referenced from The Port of Los Angeles - Port wide Baseline Air Emissions Inventory . July 2006

(4) 1-pound = 453.6 grams

<sup>(1)</sup> Table 2.20

<sup>(2)</sup> Table 2.22

<sup>(3)</sup> Emissions = Emission Factor \* Engine Power \* Time \* Loading Factor

### Evaluation of Ship Emissions for the PetroDiamond Terminal - Full Barges/Ocean-going Tugs -

#### **Emission Factors**

	NOx	CO	HC	PM10	PM2.5	SOx
Engine Type	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)
Main Propulsion <sup>(1)</sup>	14.00	1.10	0.50		1.20	11.50
Auxiliary <sup>(2)</sup>	13.90	1.10	0.40	0.30	0.20	4.30

#### Low-Loading Factor Emission Adjustment Factors (3)

Loading Factor	NOx	CO	HC	PM10	PM2.5	SOx
4%	2.21	4.86	7.71	3.09	3.02	1.00

#### Barge Emissions (grams)(4)

Activity	NOx	CO	HC	PM10	PM2.5	SOx		
-	Main Propulsion							
Cruising - Fairway	364172.42	28613.55	13006.16	39018.47	31214.78	299141.63		
Crusing - Speed Reduction	94589.50	7432.03	3378.20	10134.59	8107.67	77698.52		
Cruising - Precautionary	22802.83	1791.65	814.39	2443.16	1954.53	18730.89		
Cruising - Total	481564.75	37837.23	17198.74	51596.22	41276.98	395571.05		
Maneuvering	10207.53	1763.72	1271.82	1529.15	1193.96	3794.01		
Hotelling	0.00	0.00	0.00	0.00	0.00	<b>0</b> .00		
Total	491772.28	39600.95	18470.56	<b>531</b> 25.37	42470.94	<b>399</b> 365.05		
		Auxilia	ry					
Cruising - Fairway	13712.16	1085.13	394.59	295.95	197.30	4241.89		
Crusing - Speed Reduction	4524.51	358.06	130.20	97.65	65.10	1399.67		
Cruising - Precautionary	2585.44	204.60	74.40	55.80	37.20	799.81		
Cruising - Total	20822.11	1647.79	599.20	449.40	299.60	6441.37		
<b>Mane</b> uvering	8982.49	710.84	258.49	193.87	129.24	2778.76		
Hotelling	33458.60	2647.80	962.84	722.13	481.42	10350.50		
Total	63263.20	5006.44	1820.52	1365.39	910.26	19570.63		
Totals								
Cruising	502386.86	39485.02	17797.94	52045.62	41576.58	402012.42		
<b>Mane</b> uvering	19190.02	2474.56	1530.31	1723.02	1323.20	6572.76		
Hotelling	33458.60	2647.80	962.84	722.13	481.42	10350.50		
Grand Total	555035.48	44607.39	20291.08	54490.77	43381.20	418935.68		

#### Barge Emissions (pounds)<sup>(5)</sup>

Activity	NOx	CO	HC	PM10	PM2.5	SOx
	·	Main Prop	ulsion			
Cruising	1061.65	83.42	37.92	113.75	91.00	872.07
<b>Mane</b> uvering	22.50	3.89	2.80	3.37	2.63	8.36
Hotelling	0.00	0.00	0.00	0.00	0.00	0.00
Total	<b>108</b> 4.15	<b>87</b> .30	<b>40</b> .72	117.12	93.63	<b>880</b> .43
		Auxilia	ary			
Cruising	45.90	3.63	1.32	0.99	0.66	14.20
<b>Mane</b> uvering	19.80	1.57	0.57	0.43	0.28	6.13
Hotelling	73.76	5.84	2.12	1.59	1.06	22.82
Total	139.47	11.04	4.01	3.01	2.01	43.15
		Total	ls			
Cruising	1107.55	87.05	39.24	114.74	91.66	886.27
<b>Mane</b> uvering	42.31	5.46	3.37	3.80	2.92	14.49
<b>Hotell</b> ing	73.76	5.84	2.12	1.59	1.06	22.82
Grand Total	1223.62	98.34	44.73	120.13	95.64	923.58

All Tables are referenced from The Port of Long Beach Air Emissions Inventory - 2005, September 2007

<sup>(1)</sup> Table 2.5

<sup>(2)</sup> Table 2.11

<sup>(3)</sup> Table 2.8, Except for PM2.5 which is based on the PM10 to PM2.5 ratio from SCAQMD PM2.5 ratio for Ships, Liquid Fuel, http://www.aqmd.gov/ceqa/handbook/PM2\_5/finalAppA.doc

<sup>(4)</sup> Emissions = Emission Factor \* Engine Power \* Time \* Loading Factor

<sup>(5) 1</sup> pound = 453.6 grams

#### Sample Calculation for Ship and Barge Emissions

#### **Equation**

Emissions (lbs/visit) = Emission Factor \* Engine Power \* Time \* Loading Factor/ (453.6 g/lb)

#### Sample Calculation for NOx Emissions from a Barge

	NOx
Engine Type	<del>(g/kW-hr)</del>
Main Propulsion <sup>(1)</sup>	14.00
Auxiliary <sup>(2)</sup>	10.90

				Avg Aux	Avg Total
	Avg Main	Avg Max	Avg Number of	Power/ Engine	<b>Aux Power</b>
Engine Size <sup>(3)</sup>	Power (kW)	Speed (knots)	Aux Engines	<del>(kW)</del>	<del>(kW)</del>
Barges/Ocean going Tugs	<del>3356</del>	-	2	<del>125</del>	<del>250</del>

	Main Engine	Aux Engine	Proposed Avg Time per Visit
Activity	Load Factor (4)	Load Factor (6)	<del>(Hours)</del>
Cruising <sup>(6)</sup>	0.43	0.20	<del>12</del>
Maneuvering <sup>(7)</sup>	0.43	0.45	1.60
Hotelling <sup>(8)</sup>	0.00	0.22	<del>9.9</del> 4
			<del>23.5</del> 4

**Main Engines** 

E = 14 g/kW-hr \* 3356 kW \* 12 hrs/visit \* 0.43 / 453.6 g/lb = Cruising 534.47 E = 14 g/kW hr \* 3356 kW \* 1.6 hrs/visit \* 0.43 / 453.6 g/lb = 71.26 Maneuvering **Hotelling Total Main Engines (Ibs/visit)** 

605.74

#### **Auxiliary Engines**

Cruising	E = 10.9 g/kW hr * 250 kW * 12 hrs/visit * 0.2 / 453.6 g/lb =	<del>14.06</del>
Maneuvering	E = 10.9 g/kW-hr * 250 kW * 1.6 hrs/visit * 0.45 / 453.6 g/lb =	4.33
Hotelling	E = 10.9 g/kW-hr * 250 kW * 9.94 hrs/visit * 0.22 / 453.6 g/lb =	<del>13.13</del>
<b>Total Auxiliary Engines (lbs</b>	<del>:/visit)</del>	<del>31.52</del>

All Tables are referenced from The Port of Los Angeles - Port wide Baseline Air Emissions Inventory - July 2005

- (1) Table 2.20
- (2) Table 2.22
- (3) See Parameters on page A-3.
- (4) Load Factor = (Speed/Max Speed)<sup>3</sup>; Maneuvering Load Factor is taken at 2% minimum. Table 3.9 for Barges.
- (5) Table 2.19; Cruising Load Factor is 75% Fairway and 25% Precautionary Zone Loading Factors.
- (6) Cruising Time is time required to travel through the Fairway and Precautionary Zone (66 miles one way) at 13.6knots for Tankers and 9.4 knots for Barges.
- (7) Arrival is depicted in Figure 2.28. Departure is depicted in Figure 2.29.

#### Sample Calculation for Ship and Barge Emissions

#### **Equation**

Emissions (lbs/visit) = Emission Factor \* Engine Power \* Time \* Loading Factor/ (453.6 g/lb)

#### Sample Calculation for NOx Emissions from a Barge

	NOx	Low Load
Engine Type	(g/kW-hr)	Factor
Main Propulsion <sup>(1)</sup>	14.00	2.21
Auxiliary <sup>(2)</sup>	13.90	-

						Avg Total
	Avg N	lain	Avg Max	Avg Number of	Avg Aux Power/	Aux Power
Engine Size <sup>(3)</sup>	Power	(kW)	Speed (knots)	Aux Engines	Engine (kW)	(kW)
Barges/Ocean-going Tugs		4598	-	2	410.3	820.6

Activity	Main Engine Load Factor <sup>(4)</sup>	Aux Engine Load Factor <sup>(5)</sup>	Proposed Avg Time per Visit (Hours)
Cruising - Fairway Zone <sup>(6)</sup>	0.80		7.07
Cruising - Speed Reduction Zone <sup>(6)</sup>	0.63	0.17	2.33
Cruising - Precautionary Zone <sup>(6)</sup>	0.27	0.17	1.33
Maneuvering <sup>(6)</sup>	0.04	0.45	1.75
Hotelling <sup>(6)</sup>	0.00	0.22	13.33
			25.82

#### **Main Engines**

Cruising - Fairway	E = 14 g/kW-hr * 4598 kW * 7.07 hrs/visit * 0.80 / 453.6 g/lb =	803
Crusing - Speed Reduction	E = 14 g/kW-hr * 4598 kW * 2.33 hrs/visit * 0.63 / 453.6 g/lb =	209
Cruising - Precautionary	E = 14 g/kW-hr * 4598 kW * 1.33 hrs/visit * 0.27 / 453.6 g/lb =	50
Maneuvering	E = 14 g/kW-hr * 4598 kW * 1.75 hrs/visit * 0.04 / 453.6 g/lb * 2.21 =	23
Hotelling	F = 0	

**Total Main Engines (lbs/visit)** 

1084

#### **Auxiliary Engines**

raxinal y Enginee		
Cruising - Fairway	E = 13.9 g/kW-hr * 820.6kW * 7.07 hrs/visit * 0.17 / 453.6 g/lb =	30
Crusing - Speed Reduction	E = 13.9 g/kW-hr * 820.6kW * 2.33 hrs/visit * 0.17 / 453.6 g/lb =	10
Cruising - Precautionary	E = 13.9 g/kW-hr * 820.6kW * 1.33 hrs/visit * 0.17 / 453.6 g/lb =	6
Maneuvering	E = 13.9 g/kW-hr * 820.6 kW * 1.75 hrs/visit * 0.45 / 453.6 g/lb =	20
Hotelling	E = 13.9 g/kW-hr * 820.6 kW * 13.33 hrs/visit * 0.22 / 453.6 g/lb =	74
Total Auxiliary Engines (lbs/visit)		139

All Tables are referenced from The Port of Long Beach Air Emissions Inventory - 2005, September 2007

- (1) Table 2.5
- (2) Table 2.11
- (3) See Parameters on page A-3.
- (4) Load Factor = (Speed/Max Speed)^3; Table 2.9 for Maneuvering Load Factor during arrival.
- (5) Table 2.12, pg 72.
- (6) See calculation in footnote of page A-3.

#### **Fuel Use Estimation**

#### Formula

Fuel Use =

- Engine Size (KW) \* Fuel Rate (grams/kW-hr) \* Hours \* Load Factor \* Number of Ships per year / 453.6 g/lb

#### **Fuel Use Calculations**

<del>Ship</del>		<del>lbs fuel / yr</del>
Cruising	= 97679 kW * 195 g/kW-hr * 8.5 hrs * 0.78 * 24 / <b>453.6 g/lb</b> =	6681709
Maneuvering	= 97679 kW * 195 g/kW-hr * 1.6 hrs * 0.02 * 24 / 453.6 g/lb =	<del>32250</del>
Hotelling	= 1985 kW * 227 g/kW-hr * 28 hrs * 0.67 * 24 / 45 <b>3.6 g/lb =</b>	447257
<del>Total</del>		<del>7161216</del>

Barge lbs fuel / yr

 Cruising
 = 3356 kW \* 195 g/kW - hr \* 12 hrs \* 0.43 \* 240 / 453.6 g/lb =
 1786670

 Maneuvering
 = 3356 kW \* 195 g/kW - hr \* 1.6 hrs \* 0.43 \* 240 / 453.6 g/lb =
 238223

 Hotelling
 = 250 kW \* 227 g/kW - hr \* 10 hrs \* 0.22 \* 240 / 453.6 g/lb =
 66058

2090951

lbs fuel / yr

Reduction in fuel use

Heavy Fuel Oil 4689065 70% Diesel 381199 85%

**Fuel Rates** 

Heavy Fuel Oil
Diesel

195 grams fuel/kW-hr
227 grams fuel/kW-hr

#### Assumptions:

Fuel rate is the same for both types of engines.

Both vessels are using heavy fuel oil in the main engines. Both vessels are using diesel fuel in the auxiliary engines.

#### **Fuel Use Estimation**

#### Formula

Engine Fuel Use =

Engine Size (KW) \* Fuel Rate (grams/kW-hr) \* Hours \* Load Factor \* Number of Vessels per year / 453.6 g/lb Boiler Fuel Use =

Fuel Rate (tons of fuel/hour) \* Hours \* Number of Vessels per year \* 2000 lb/ton

#### **Fuel Rates**

Heavy Fuel Oil 195 grams fuel/kW-hr Diesel 227 grams fuel/kW-hr Boilers 0.0125 tons fuel/hr

#### **Assumptions**

Fuel rate is the same for both types of engines.

Both vessels are using heavy fuel oil in the main engines.

Both vessels are using diesel fuel in the auxiliary engines.

Number of Barges = Number of Ships \* Equivalence Factor = 24 \* 3.0 = 72

Density of Diesel + Fuel Oil = 7.185 lb/gal

Ship		lbs fuel / yr	
Main Engine			
Cruising - Fairway	= 10696 kW * 195 g/kW-hr * 6.6 hrs * 0.80 * 24 / 453.6 g/lb =	582652	
Crusing - Speed Reduction	= 10696 kW * 195 g/kW-hr * 2.3 hrs * 0.51 * 24 / 453.6 g/lb =	131838	
Cruising - Precautionary	= 10696 kW * 195 g/kW-hr * 1.3 hrs * 0.22 * 24 / 453.6 g/lb =	31782	
Maneuvering	= 10696 kW * 195 g/kW-hr * 1.75 hrs * 0.034 * 24 / 453.6 g/lb =	6566	
Hotelling	= 10696 kW * 195 g/kW-hr * 27.9 hrs * 0.0 * 24 / 453.6 g/lb =	0	
Subtotal		752839	
Aux Engine			
Cruising - Fairway	= 2542 kW * 227 g/kW-hr * 6.6 hrs * 0.24 * 24 / 453.6 g/lb =	48359	
Crusing - Speed Reduction	= 2542 kW * 227 g/kW-hr * 2.3 hrs * 0.24 * 24 / 453.6 g/lb =	17097	
Cruising - Precautionary	= 2542 kW * 227 g/kW-hr * 1.3 hrs * 0.24 * 24 / 453.6 g/lb =	9770	
Maneuvering	= 2542 kW * 227 g/kW-hr * 1.75 hrs * 0.33 * 24 / 453.6 g/lb =	17632	
Hotelling	= 2542 kW * 227 g/kW-hr * 27.9 hrs * 0.26 * 24 / 453.6 g/lb =	221603	
Subtotal		314461	
Boilers	2.326229		
Cruising - Fairway		NA	
Crusing - Speed Reduction		NA	
Cruising - Precautionary		NA	
Maneuvering	= 0.0125 tons/hr * 1.75 hrs * 24 * 2000 lb/ton =	1050	
Hotelling	= 0.0125 tons/hr * 27.9 hrs * 24 * 2000 lb/ton =	16750	
Subtotal		17800	
Heavy Fuel Oil Grand Total		770639	
Diesel Grand Total		314461	
Barge			
Main Engine			
Cruising - Fairway	= 4598 kW * 195 g/kW-hr * 7.07 hrs * 0.80 * 72 /453.6 g/lb =	805143	
Crusing - Speed Reduction	= 4598 kW * 195 g/kW-hr * 2.33 hrs * 0.63 * 72 /453.6 g/lb =	209126	
Cruising - Precautionary	= 4598 kW * 195 g/kW-hr * 1.33 hrs * 0.27 * 72 /453.6 g/lb =	50414	
Maneuvering	= 4598 kW * 195 g/kW-hr * 1.75 hrs * 0.04 * 72 /453.6 g/lb =	10212	
Hotelling	= 4598 kW * 195 g/kW-hr * 13.33 hrs * 0.00 * 72 /453.6 g/lb =	0	
Subtotal		1074896	
Aux Engine		707 1000	
Cruising - Fairway	= 820.6 kW * 227 g/kW-hr * 7.07 hrs * 0.24 * 72 /453.6 g/lb =	35545	
Crusing - Speed Reduction	= 820.6 kW * 227 g/kW-hr * 2.33 hrs * 0.24 * 72 /453.6 g/lb =	11729	
Cruising - Precautionary	= 820.6 kW * 227 g/kW-hr * 1.33 hrs * 0.24 * 72 /453.6 g/lb =	6702	
Maneuvering	= 820.6 kW * 227 g/kW-hr * 1.75 hrs * 0.33 * 72 /453.6 g/lb =	23285	
Hotelling	= 820.6 kW * 227 g/kW-hr * 13.33 hrs * 0.26 * 72 /453.6 g/lb =	86732	
Subtotal		163992	
Heavy Fuel Oil Grand Total		1074896	
Diesel Grand Total		163992	
		100002	
Reduction in fuel use		lbs fuel / yr	0
Heavy Fuel Oil		-304257	1
Dissol		450400	

Increase in Fuel Rate

Increase in Fuel Rate

Diesel

% change -39%

48%

150469

421.3 lb/day

58.6 gal/day

# APPENDIX B COMMENTS AND RESPONSE TO COMMENTS RECEIVED ON THE DRAFT NEGATIVE DECLARATION

#### FINAL NEGATIVE DECLARATION

# PETRO-DIAMOND TERMINAL COMPANY MARINE TERMINAL PERMIT MODIFICATION PROJECT

#### **RESPONSE TO COMMENTS**

#### INTRODUCTION

This Response to Comments, together with the Draft Negative Declaration constitutes the Final Negative Declaration for the Petro-Diamond Terminal Company Marine Terminal Permit Modification Project.

The Draft Negative Declaration was circulated for a 30-day public review and comment period, which started on August 15, 2007, and ended September 13, 2007. The Draft Negative Declaration is available at the SCAQMD Headquarters located at 21865 Copley Drive, Diamond Bar, California 91765 or by phone at (909) 396-2039.

The Draft Negative Declaration included a detailed project description, the environmental setting for each environmental resource, and an analysis of each environmental resource on the California Environmental Quality Act (CEQA) checklist including all potentially significant environmental impacts. Based on the Draft Negative Declaration, no significant adverse environmental impacts were identified associated with the proposed project.

The SCAQMD received one comment letter on the Draft Negative Declaration during the public comment period. Responses to the comment letter are presented in this Appendix. The comments are bracketed and numbered. The related responses are identified with the corresponding number and are included in the following pages. Pursuant to CEQA Guidelines §15073.5(c)(2), re-circulation is not necessary since the information provided in response to written comments on the project's effects does not identify any new, avoidable significant effects.

STATE OF CALFORNIA

Ampld Bohwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION 915 CAPITOL MALL, ROOM 964 GACRAMENTO, CA 96814 (916) 653-6251 Fex (916) 657-6390 Web 916 www.nathc.ca.gov e-mail: ds\_naho@pacbell.net



August 29, 2007

Ms, Barbara Radiein **SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT** 21865 Copley Drive Diamond Bar, CA 91765-4182

Re: SCH#2007081072; CEQA Notice of Completion: draft Negative Declaration for PETRO-DIAMOND TERMINAL COMPANY; MARINE TERMINAL PERMIT MODIFICATION PROJECT: Port of LA Area; Los Angeles County, California

#### Dear Ms. Radiein:

Deal Ms. Naturali.	
The Native American Heritage Commission is the state's Trustee Agency for Native American Cultural	1-1
Resources. The California Environmental Quality Act (CEQA) requires that any project that causes a substantial	
adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant	
effect' requiring the preparation of an Environmental Impact Report (EIR) per CEQA guidelines § 15064.5(b)(c). In	1-2
order to comply with this provision, the lead agency is required to assess whether the project will have an adverse	1-2
impact on these resources within the area of potential effect (APE), and if so, to mitigate that effect. To adequately	
assess the project-related impacts on historical resources, the Commission recommends the following action:	
√ Contact the appropriate California Historic Resources Information Center (CHRIS). Contact information for the	
Information Center nearest you is available from the State Office of Historic Preservation (916/653-7278)/	
http://www.ohp.parks.ca.gov/1068/files/IC%20Roster.pdf The record search will determine:	1-3
If a part or the entire APE has been previously surveyed for cultural resources.	1-3
If any known cultural resources have already been recorded in or adjacent to the APE.  If the probability is low mederate, or high that cultural resources are legated in the APE.	
- If the proposition to low, industrial that cuttilital resources are incated in this M.E.	
<ul> <li>If a survey is required to determine whether previously unrecorded cultural resources are present.</li> <li>√ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing</li> </ul>	
the findings and recommendations of the records search and field survey.	
The final report containing site forms, site significance, and mitigation measurers should be submitted  The final report containing site forms, site significance, and mitigation measurers should be submitted.	
immediately to the planning department. All information regarding site locations, Native American human	1 4
remains, and associated funerary objects should be in a separate confidential addendum, and not be made	1-4
available for pubic disclosure.	
<ul> <li>The final written report should be submitted within 3 months after work has been completed to the appropriate</li> </ul>	
regional archaeological Information Center.	
√ Contact the Native American Heritage Commission (NAHC) for:	
* A Sacred Lands File (SLF) search of the project area and information on tribal contacts in the project	
vicinity that may have additional cultural resource information. Please provide this office with the following	1-5
citation format to assist with the Sacred Lands File search request: USGS 7.5-minute quadrangle citation	
with name, township, range and section:  The NAHC advises the use of Native American Monitors to ensure proper identification and care given cultural	
resources that may be discovered. The NAHC recommends that contact be made with Native American	
Contacts on the attached list to get their input on potential project impact (APE). In some cases, the existence of	
a Native American cultural resources may be known only to a local tribe(s).	
Lack of surface evidence of archeological resources does not preclude their subsurface existence.	
<ul> <li>Lead agencies should include in their mitigation plan provisions for the identification and evaluation of</li> </ul>	1-6
accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) \$15064.5 (f)	1 0
In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native	
American, with knowledge in cultural resources, should monitor all ground-disturbing activities.	
<ul> <li>Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in</li> </ul>	
consultation with culturally affiliated Native Americans.	
√ Lead agencies should include provisions for discovery of Native American human remains or unmarked cemeteries in their mitigation plans.	1 7
	1-7
<ul> <li>CEQA Guidelines, Section 15084.5(d) requires the lead agency to work with the Native Americans identified by this Commission if the initial Study identifies the presence or likely presence of Native American human</li> </ul>	
remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the	1-8
	_

NAME to appropriate and displication and displication and displication and according to	1-8
NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated	4
grave itens.	cont.
√ Health and Safety Code §7050.5, Public Resources Code §5097.98 and Sec. §15064.5 (d) of the CEQA	
Guidelines mandate procedures to be followed in the event of an accidental discovery of any human remains in a	1-9
location other than a dedicated cemetery.	1
√ Lead agencies should consider avoidance, as defined in \$ 15370 of the CEQA Guidelines, when significant cultural	1-10
resources are discovered during the course of project planning	1-10

Please feel free to contact me at (916) 653-6251 if you have any questions.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Vist of Native American Contacts

#### **Native American Contacts** Los Angeles County August 29, 2007

LA City/County Native American Indian Comm

Ron Andrade, Director

3175 West 6th Street, Rm. 403

Los Angeles CA 90020 (213) 351-5324

(213) 386-3995 FAX

Ti'At Society Cindi Alvitre

Reseda

6602 Zelzah Avenue

, CA 91335

calvitre@yahoo.com (714) 504-2468 Cell

Gabrielino

Tongva Ancestral Territorial Tribal Nation John Tommy Rosas, Tribal Adminstrator 4712 Admiralty Way, Suite 172

Marina Del Rey , CA 90292

310-570-6567

Gabrielino Tongva

Diane Napoleone and Associates Diane Napoleone 6997 Vista del Rincon Chumash

La Conchita , CA 93001 dnaassociates@sbcglobal.net 805-643-7492

Gabrieleno/Tongva Tribal Council Anthony Morales, Chairperson

PO Box 693

Gabrielino Tongva

, CA 91778 San Gabriel ChiefRBwife@aol.com

(626) 286-1632

(626) 286-1758 - Home (626) 286-1262 Fax

Gabrielino/Tongva Council / Gabrielino Tongva Nation Sam Dunlap, Tribal Secretary

761 Terminal Street; Bldg 1, 2nd floor Gabrielino Tonqva Los Angeles CA 90021

office @tongvatribe.net (213) 489-5001 - Officer

(909) 262-9351 - cell

(213) 489-5002 Fax

Gabriefino Tongva Indians of California Tribal Council Robert Dorame, Tribal Chair/Cultural Resources 5450 Stauson, Ave, Suite 151 PMB Gabrielino Tongva Culver City CA 90230 gtongva@verizon.net 562-761-6417 - voice

562-920-9449 - fax

Gabrielino Tongva Indians of California Tribal Council Mercedes Dorame, Tribal Administrator

20990 Las Flores Mesa Drive

Malibu

Gabrielino Tongva , CA 90265

Pluto05@hotmail.com

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

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

This list is only applicable for contacting local Netive American with regard to cultural resources for the proposed SCH#2007081072; CEQA Notice of Completion; draft Negative Declaration for Petro-Diamond Terminal Company; Marine Terminal Permit Modification Project; Port of LA Area; Los Angeles County, California.

#### COMMENT LETTER NO. 1 NATIVE AMERICAN HERITAGE COMMISSION

#### Response 1-1

The SCAQMD notes that the Native American Heritage Commission is the state's Trustee Agency for Native American Cultural Resources.

#### Response 1-2

The SCAQMD is aware of the requirements of CEQA Guidelines §15064.5 and has complied with this section as well as all other relevant CEQA requirements. As stated on page 2-15 of the Negative Declaration for the Petro-Diamond Terminal Company Marine Terminal Permit Modification Project, potential significant adverse impacts on cultural resources were not anticipated. This conclusion is based on the fact that there are no prehistoric or historic cultural resources or paleontological resources within the boundaries of the Petro-Diamond Marine Terminal.

The entire Terminal site has been previously graded and developed, and is basically built on fill land which has been created only within the last 75 years. No construction activities are required as part of the proposed project and only modifications to air permits are proposed. Therefore, the proposed project is not expected to adversely affect any historical resource sites, including sites of paleontological or archaeological value.

#### Response 1-3

The Petro-Diamond Terminal Company Marine Terminal Permit Modification Project consists of a proposal to modify permits for existing operations occurring within the boundaries of an existing marine terminal. The primary objective of this project is to adjust the allowable throughput of the terminal, increase the maximum allowable throughput through the truck loading rack, and clarify the allowable number of marine vessels that can visit the facility. The proposed modifications will give Petro-Diamond more flexibility in how products are distributed from the Marine Terminal. Modification to permit conditions on current truck loading permits are also expected to make trucking logistics smoother. No construction activities will occur as part of the proposed project so no impact on cultural resources will occur. See also Response 1-2.

#### Response 1-4

As explained in Responses 1-2 and 1-3, an archaeological inventory survey is not required to be performed for the proposed project because no physical changes to the terminal are proposed and no historical resources are located at the site.

#### Response 1-5

As noted in Responses 1-2 and 1-3, additional archaeological investigations are not required for the Petro-Diamond Terminal Company Marine Terminal, so it is not necessary to contact the Native American Heritage Commission.

#### Response 1-6

As noted in Responses 1-2 and 1-3, no construction activities will occur as part of the proposed project. Further, because the facility is built on fill material, no historical resources are located at the site. As a result, no further analyses of cultural resources in the Final Negative Declaration are required.

#### Response 1-7

With regard to the potential for discovery of Native American remains, refer to Responses 1-2 and 1-3.

#### Response 1-8

As stated on page 2-15, the Draft Negative Declaration study did not identify the presence or likely presence of Native American human remains. No construction activities are included as part of the proposed project. Therefore, agreements with Native Americans are not required. See also Responses 1-2 and 1-3.

#### Response 1-9

As noted in Responses 1-2 and 1-3, discovery of human remains relative to the proposed project is not anticipated because no construction activities are proposed and no historical resources are located at the site.

#### Response 1-10

CEQA Guidelines §15370(a) defines avoidance as: "Avoiding the impact altogether by not taking a certain action or parts of an action." As stated on page 2-15 no construction activities will occur, which constitutes avoiding a potential impact. However, as noted in Response 1-2, no historical resources are located at the site.