Appendix H

Comments and Responses to Comments

Appendix H – Response to Comments

Response to Comments

ConocoPhillips Santa Maria Refinery
Throughput Increase Project
Environmental Impact Report
Public Draft Comments

Comment Set #	Name	Date	Code
Applicant			
1.	ConocoPhillips Company	October 31, 2011	COP
Government Agencies, Elected Officials			
2.	California Regional Water Quality Control Board	October 13, 2011	CRWQCB
3.	County of Santa Barbara - Planning and Development	October 17, 2011	SBC
4.	Department of Transportation	October 13, 2011	DOT
5.	Guadalupe Fire Department	September 27, 2011	GFD
Organizations			
No comment letters received from organizations.			
Individuals			
6.	Ken Chaubet	October 22, 2011	ChaubetK
7.	Michael & Debra Elliott	October 28, 2011	ElliottMD
8.	Paul Granbery	November 1, 2011	GranberyP
9.	Paul D. Lee	October 27, 2011	LeeP
10.	Milton & Susan Towne	October 24, 2011	TowneMS
11.	Mona Tucker	October 14, 2011	TuckerM

ConocoPhillips

ConocoPhillips Company
Santa Maria Facility
2555 Willow Road
Arroyo Grande, CA 93420

October 31, 2011

VIA HAND DELIVERY

Ms. Aeron Arlin-Genet, Planning and Outreach Manager
Air Pollution Control District
3433 Roberto Court
San Luis Obispo, CA 93401

Mr. Murray Wilson, Environmental Research Specialist
County of San Luis Obispo
976 Osos Street, Room 300
San Luis Obispo, CA 93408

Re: ConocoPhillips Development Plan/Coastal Development Permit
ConocoPhillips Company Comments to Draft EIR (DRC2008-00146; ED09-153

Dear Ms. Genet and Mr. Wilson:

ConocoPhillips Company ("ConocoPhillips") thanks you and other members of the San Luis Obispo Air Pollution Control District ("APCD") and the San Luis Obispo County Department of Planning and Building for the efforts necessary to process ConocoPhillips' application and develop the Draft Environmental Impact Report ("Draft EIR") for the Santa Maria Refinery ("SMR") project. ConocoPhillips has reviewed the Draft EIR and provides the comments listed in this letter. In addition to these comments, which are more narrative in nature, we have also red-lined the Draft EIR to provide comments that are more typographic and/or administrative in nature. A copy of the red-lined Draft EIR is attached as Exhibit 1. We ask that both sets of comments be considered and addressed in the Final Environmental Impact Report.

As an initial matter, ConocoPhillips is disappointed that the lead agencies would not meet with us prior to issuing the Draft EIR, as we believe that the inaccuracies in the Draft EIR regarding refinery operations and certain project impacts could have been remedied prior to issuance of the Draft EIR. Our offer to meet with you and/or your EIR contractor remains open and we welcome the opportunity to discuss our comments with you at the earliest possible convenience.

Although we have numerous concerns with the information presented in the Draft EIR, our primary concern pertains to those project impacts that we feel have been improperly identified or characterized and those mitigation measures set forth in the Draft EIR that we believe are factually and/or logically unsupportable and should be removed. The following table identifies those impacts and mitigation measures and provides a brief summary of our concerns, the latter of which are more fully described in the letter below.

Table 1: Summary of Impacts and Mitigation Measures of Concern

	Impact	Proposed Mitigation Measure	Summary of Reasons No Mitigation Is Required or Why Less or Different Mitigation is Required
COP-1	AQ.1 Operational activities would generate emissions that exceed SLOCAPCD thresholds	AQ1.1 Install LoNox burners on heaters/boilers AQ1.2:To extent feasible, require all trucks under contract meet EPA 2010 or 2007 model year NOx and PM emission requirements and submit annual records AQ1.3 Use of offsite mitigation to achieve thresholds	AQ 1.1 BACT measures may achieve correctly calculated thresholds Please Add Note: If AQ 1.1 reduces emissions below threshold, no need for AQ 1.2 and AQ 1.3. AQ.2: Cleaner engines will be verified in annual recordkeeping for trucks to/from facility. Daily recordkeeping and calculating annual emissions from these mobile sources is an additional burden and is not required to achieve emission reduction.
COP-2	AQ.2 Operational activities would increase frequency of odor events	Prepare and submit Odor Control Plan	Increase in throughput (ie. liquids flowing through refinery vessels and piping) will not increase odors. No significant impact, so no mitigation is required.
COP-3	AQ.3 Operational activities would increase GHG emissions	AQ.3 Increase efficiency of stationary sources; include the use of more efficient model year trucks or alternative-fueled vehicles; and/or offsite mitigation.	GHG emissions impacts are presumed to be less than significant if project/facility is in compliance with AB32 programs (i.e. Cap and Trade, local Reduction Strategies, etc.) No significant impact, so no mitigation is required.
COP-4	PSHM.3: Groundwater contamination from coke storage area	Deposit additional quantities of coke produced by project and stored in coke storage area in lined areas (or other equivalent measures)	No link between coke storage areas and groundwater contamination No additional coke storage results from project limited by current permit No significant impact, so no mitigation is required.
COP-5	N.1: Increased noise from project	Install sound barrier at Santa Margarita Pump Station	Noise levels are currently below threshold No increased pump activity from project, and therefore, no change in noise levels results from project No significant impact, so no mitigation is required.
COP-6	WR.1: 1% increase in water usage may impact future availability	Develop Water Management Plan	Draft EIR indicates that no significant impacts will result from project water usage Water Management Plan already in place per Superior Court Order No significant impact, so no mitigation is required.
COP-7	WR.3: Project may impact water quality	Amend spill management precautions	WR-3.1 There will not be an increase above the current NPDES water discharge limit. WR-3.2 Spill size is determined by the volume of liquid contained by the equipment. The quantity of liquid petroleum onsite and the equipment that contains that liquid will not change. The only thing that will change is that liquid will enter and leave the facility at a higher rate. No significant impact, so no mitigation is required.

Impact	Proposed Mitigation Measure	Summary of Reasons No Mitigation Is Required or Why Less or Different Mitigation is Required
PS.5 Project may impact fire protection and emergency response	Impact fire protection and emergency response	Proposed throughput increase will not increase fire risk and fire-fighting requirements. No significant impact
TR-1 Project would increase traffic on local roads and freeway	In addition, after the Willow Road/Highway 101 interchange is completed, end use of North & eastbound truck routes and use Willow Road Interchange instead.	The Draft EIR concludes that traffic impacts are less than significant (Draft EIR Page 4.6-13). No significant impact, so no mitigation is required.

COP-8

COP-9

For each comment in this letter, ConocoPhillips has identified the page of the Draft EIR where the issue addressed by that comment is most thoroughly discussed. We have also attempted to capture other sections where the comment might be equally applicable, such as in the Executive Summary, but request that the comment apply with equal force throughout the document where duplication of the concept being commented upon has occurred.

Comment No. 1, Project Description Generally
(*See e.g.*, Page 1-6, Section 1.4 - Previous CEQA Documents; Page 2-27, Section 2.2 – Project Description)

COP-10

Through its application, ConocoPhillips is requesting that its current permit entitlement to process 44,500 barrels per day ("bpd") of crude oil be amended to allow processing up to 48,950 bpd. ConocoPhillips agrees that the current Department of Planning and Building permit limit of 44,500 bpd was evaluated in a California Environmental Quality Act ("CEQA") document in a Negative Declaration in 1990, and that therefore, all operations at the Santa Maria Refinery ("SMR") under the current Department of Planning and Building permit of 44,500 bpd would be covered by a CEQA analysis and the permit level of 44,500 bpd, which has been recently achieved operationally, is considered the baseline for this analysis.

Comment No. 2, Air Quality Generally
(*See e.g.*, Pages 4.1-36 through 4.1-41; Mitigation Measures AQ-1.1, AQ-1.2, and AQ-1.3; Page ES-10)

Finding of Significance

COP-11

ConocoPhillips does not disagree with the conclusion in the Draft EIR that daily project ROG and NOx emissions will exceed significance thresholds. However, for the reasons explained below, the emission levels represented in the Draft EIR are not accurate. In Exhibit 2, ConocoPhillips provides the proper calculation of these emissions.

The Draft EIR concludes that one-third of the project emissions are from the refinery and that two-thirds of the project emissions result from assumed trips by trucks and locomotives using

a worst-case evaluation and distant source for crude supply. This worst-case assumption assumes that SMR receives crude oil via truck and/or rail, which is incorrect. SMR receives crude solely by pipeline. This will not change with project implementation. Therefore, there are no offsite mobile emissions impacts associated with receipt of additional crude supplies and/or additional throughput.

The Draft EIR does not fully recognize the fact that additional crude oil truck trips per day actually *reduces* emissions, because the increase in throughput will allow crude that is currently trucked to more remote refineries to be refined at SMR, thereby ultimately reducing the number of miles travelled by those vehicles.

ConocoPhillips has provided information to the County and APCD that it anticipates the project will result in an increase of approximately four (4) additional truck trips per day, which will result from hauling out a minor increase in coke and sulfur. Although these four truck trips will cause emissions, such emissions are essentially *de minimis* compared to the total quantity of vehicular emissions in the Arroyo Grande area. Therefore, ConocoPhillips believes that on its face such emissions do not rise anywhere near the CEQA significance threshold.

In fact, when the truck impact analysis is taken beyond a simple "on its face" reasonableness test, the Final EIR should recognize that the 4 additional truck trips per day for coke and sulfur hauling do not create a significant air impact for an additional reason -- the project's net effect on truck trips actually *reduces* emissions. This results because the increase in throughput will allow relatively locally-produced crude that is currently trucked to more remote refineries to be transported by pipeline and refined at SMR, thereby ultimately reducing the number of miles travelled by crude-transport trucks. This will more than "net out" the emissions from the 4 additional truck trips resulting from the project.

In addition, the Draft EIR's conclusion is inconsistent with the analysis used in other jurisdictions where ConocoPhillips operates. For example, the South Coast Air Quality Management District ("SCAQMD") has a 350 trucks-per-day *threshold just to trigger CEQA review*, let alone find a significant impact. (Attached as Exhibit 3 is the SCAQMD CEQA Checklist.)

Further, the Draft EIR references a 2004 Health Risk Assessment (HRA) as a source for several pieces of information used to determine project impacts. The 2004 Health Risk Assessment is 7 years old, outdated, and does not reflect current operating and equipment conditions. For example, the calciner operation at SMR was discontinued in 2007, and therefore, any health risk impacts from that operation as reflected in the 2004 Health Risk Assessment are no longer present. In 2007, ConocoPhillips submitted to the SLOC APCD, an updated Health Risk Assessment following the 2004 HRA guidelines. To provide an up-to-date risk analysis for the EIR, ConocoPhillips followed the District-approved method and voluntarily prepared the October 2011 Health Risk Assessment based on 2010 emissions year data, a copy of which is attached as Exhibit 4. ConocoPhillips requests that the Final EIR reflect the information contained in the 2011 Health Risk Assessment rather than the 2004

Health Risk Assessment. We have made suggested changes consistent with that request in the red-lined document attached as Exhibit 1. We also welcome the opportunity to meet with the agencies to address issues relating to the Health Risk Assessment and its use in the Final EIR.

Mitigation

The Draft EIR proposes the following mitigation measures (described in AQ-1.1, AQ-1.2, and AQ-1.3) to mitigate the daily project NOx and ROG emissions below the APCD significance thresholds:

COP-12

- install low-NOx burners on the crude heater, coker heater, and boilers B504/506;
- require all trucks under contract to the refinery to meet EPA 2010 or 2007 model year NOx and PM emissions requirements and a preference for the use of rail over trucks for the transportation of coke; and
- off-site mitigation.

ConocoPhillips does not believe that all these mitigation measures are necessary to reduce ROG and NOx impacts below CEQA significance thresholds. Therefore, only the mitigation measures necessary to achieve those reductions, which are described immediately below, should be required mitigation measures.

ConocoPhillips proposes that Mitigation Measures AQ-1.1, AQ-1.2, and AQ-1.3 be replaced in the Final EIR with the following Mitigation Measure:

- utilize available emission credits on file with the SLOC APCD and/or apply BACT pollution controls that allow the crude heater, coker heater and boilers B504/506 to achieve required NOX/ROG reductions and/or use offsite mitigation.

Comment No. 3, Air Quality, Odor Impacts
(*See e.g.*, Pages 4.1-42 and 4.1-43; Mitigation Measure AQ-2; Page ES-10)

Finding of Significance

COP-13

ConocoPhillips disagrees with the conclusion in the Draft EIR that the project will result in any odor impacts. At page 4.1-43, the Draft EIR states that "[i]ncreased processing of crude oil, leading to increased movements of sulfur and increased emissions, could lead to increased frequency and/or duration of odor events."

The Draft EIR's "finding" that increased processing of crude oil could lead to increased frequency and/or duration of odor events lacks any factual foundation and is wholly conclusory. ConocoPhillips disagrees that the project will create any odor impacts, let alone significant odor impacts. Such a conclusion assumes that increased flow will result in increased leakage. This is not the case. Crude enters the refinery through existing pipelines that are carefully monitored to prevent leakage. In addition, refinery process lines and

vessels are continuously monitored for signs of proper operation and to prevent leakage. There is a robust and efficient leak monitoring and repair program in practice that records low leak rates from thousands of monitored components, as verified by periodic internal and third-party audits. Any increase in crude will be similarly monitored and controlled to prevent leakage and/or prevent odor events. Therefore, there will be no change in leak rate or odor events as a result of this project.

Mitigation

COP-14 Because the project will not create any odor impacts, let alone significant odor impacts, Mitigation Measure AQ-2 should be eliminated from the Final EIR.

Comment No. 4, Air Quality, Greenhouse Gas Emissions
(*See e.g.*, Pages 4.1-44 and 4.1-45; Mitigation Measure AQ-3; Page ES-10)

Finding of Significance

ConocoPhillips does not disagree with the conclusion in the Draft EIR that project GHG emissions will exceed 10,000 metric tonnes CO_2e per year (i.e., assuming no reductions pursuant to regulatory requirements or other programs are implemented). However, please find included in Exhibit 5, the proper calculation of these emissions based on existing operating conditions.

COP-15 Although we disagree that 10,000 metric tonnes CO_2e per year is the correct level at which to establish a CEQA GHG emissions significance threshold, we will accept imposition of that significance threshold for purposes of this project. Importantly, however, as explained below, we believe that the finding of significance for project GHG emissions is essentially nullified by the California Air Resources Board ("CARB") final promulgation of its GHG emissions Cap and Trade regulation on October 20, 2011 (as well as other requirements of the California Global Warming Solutions Act of 2006, commonly referred to as "AB32," and its other implementing regulations).

At the time the application for this project was submitted, and at the time the Notice of Preparation was issued, AB 32 had been passed, but no Cap and Trade program or local GHG Reduction Strategies had been adopted. As a result, we somewhat understand why the County and APCD would conclude in the Draft EIR that the project results in significant GHG emissions impacts. Last week, however, the regulatory landscape changed with respect to regulation of GHG emissions and the Final EIR should account for and reflect this change.

As you may know, AB32, through the Cap and Trade regulation and other regulatory requirements, requires state-wide emissions to be reduced below the 1990 baseline. These emission reduction requirements will apply to SMR regardless of whether the project is implemented. Because SMR is required to comply with the Cap and Trade program and other AB32 regulatory requirements, there is the presumption that there will be no significant

GHG emissions impact as a result of this project, and hence no mitigation is required under CEQA.

Further, in addition to compliance with the Cap and Trade program, compliance with local GHG reduction strategies would likewise create the presumption that the project will not create significant GHG emissions impacts (see CEQA Guidelines Section 15183.5). It is our understanding that the County of San Luis Obispo is currently in the process of adopting such GHG reduction strategies.

This is not an aggressive or novel position on GHG emissions impact analysis. For example, the Bay Area Air Quality Management District's CEQA Air Quality Guidelines (Updated May 2011) provide in part that "if a project is consistent with an adopted qualified GHG Reduction Strategy….it can be presumed that the project will not have significant GHG emission impacts."

Mitigation

COP-16

Because the project will not create any significant GHG emission impacts, Mitigation Measure AQ-3 should be eliminated from the Final EIR. If the agencies disagree with that conclusion and recommendation, we request a meeting to discuss that issue and, to the extent necessary, the proper measures for SMR to mitigate any project GHG emission impacts.

Comment No. 5, Water Quantity
(*See e.g.*, Page E-6; Pages 4.7-1 through 4.7-12; Section 4.7.1, Water Quantity; Mitigation Measure WR-1)

COP-17

The discussion in the Draft EIR regarding water resources makes short shrift of the importance and effect of the Nipomo Mesa Management Area ("NMMA") Technical Group's work and the legal proceedings leading to the formation of that group (*see, e.g.*, the limited discussion at Draft EIR, page 4.7-17). In fact, the Draft EIR fails to discuss that ConocoPhillips and the County of San Luis Obispo have already entered into a binding water management agreement (the "Stipulation" of 2005), alterable only by an order of the Superior Court of the County of Santa Clara. A copy of the Stipulation is attached as Exhibit 6. The Stipulation comprehensively addresses all aspects of water usage and water management at SMR, including usage and management in times of potentially severe and severe water shortage conditions. The Stipulation resulted from protracted litigation and multi-year negotiations between ConocoPhillips and, among others, the County of San Luis Obispo, and that ultimately resulted in the Stipulation between water agencies and other municipal districts and purveyors, agricultural interests, industrial users like ConocoPhillips, residential water users, Government entities, and others. The Court has stated clearly and unequivocally that the County is in fact "enjoined and restrained" from acting in a manner inconsistent with the terms of the Stipulation (Stipulation at page 29:11-14).

Beyond recognizing the duty under the terms of the Stipulation the county is instead asserting additional and inconsistent burdens on ConocoPhillips than what was negotiated and agreed

to by the County's Board of Supervisors when approving the terms of the Stipulation, section 4.7 of the Draft EIR contains other serious technical inaccuracies. The following bulleted list describes those inaccuracies.

COP-18

- Near the top of Page 4.7-12: This section incorrectly states that the Nipomo Mesa Management Area ("NMMA") portion of the Santa Maria Groundwater Basin is currently in a condition of overdraft. This summary conclusion relies on discredited and older technical work that was shown to be incorrect during expert testimony presented at the recent Superior Court trial resulting in the Stipulation. The Nipomo Mesa Management Group Technical Group has never made a finding that the NMMA is in a condition of overdraft even though the technical group has been exhaustively analyzing the NMMA for the past three years.

COP-19

- Page 4.7-18 through 4.7-22: This section seeks to impose a duty to mitigate on ConocoPhillips and requires it to develop a "Water Management Plan" ("WMP") that involves conservation, reclaimed water, and surface runoff retention basin water for SMR uses, dust suppression, and landscaping applications. The WMP is to "provide guidelines on managing all future water use during severe drought years" (page 4.7-21-22). ConocoPhillips is then to make changes to the WMP "if requested" by the County. While referencing the NMMA's Water Shortage Conditions and Response Plan and the need for the WMP to be "consistent" with that Plan, the Draft EIR ignores what the Plan actually says and thus goes on to impose additional requirements on ConocoPhillips relating to how SMR is to conduct operations during times of "severe drought conditions," a phrase nowhere found in the Stipulation. This section ignores that ConocoPhillips' rights, duties, and responsibilities with respect to future water usage and water management in the NMMA are comprehensively set forth in the Stipulation. The Stipulation recites in great detail the specific rights and duties of ConocoPhillips and all other Stipulating Parties in times of "potentially severe and severe water shortage conditions" (Stipulation at pgs. 25-27), including the timing for various conservation measures and the precise level of production that ConocoPhillips may engage in depending on the water supply conditions then applicable. The proposed WMP would conflict with the jurisdiction of the Superior Court over the usage and management of water in the NMMA. In fact, the proposed mitigation measures contained in the Draft EIR are contrary to the established procedures and protocols developed by the NMMA Technical Group concerning water shortage responses. For these reasons, Mitigation measure WR-1 should be removed.

COP-20

- The Draft EIR makes no attempt to understand ConocoPhillips' current and proposed uses in the context of historical use. ConocoPhillips has made substantial investments to upgrade portions of SMR, resulting in water savings measured in tens of percents, notably when water treatment was upgraded to RO, and when the calciner operation was permanently shut down. The proposed increase in water usage pales in comparison to these previous savings. In light of these facts, the Draft EIR's imposition of water saving mitigation measures on ConocoPhillips is factually unsupportable. In short, because the Draft EIR states that the proposed production increase will have a "less than significant impact" (page 4.7-18, end of first paragraph), there is no reason to mitigate a negligible impact.

COP-21

- The summary impact description and mitigation measures for Item WR-1 (e.g. page 4.7-17) are factually unsupportable. "The proposed project… may impact current and future availability of groundwater for other users." This is an incorrect technical conclusion. Instead, based on annual reports by the NMMA Technical Group, it is far more likely that the conclusion will be just the opposite. Monotonically-increasing projection for future municipal demand is a much clearer long-term threat to NMMA water resources. The impact description is contradicted by the finding of "less than significant impact."

COP-22

- Lastly, and perhaps most importantly, the Draft EIR readily admits that the project's 1-percent water increase "will be a less than significant impact" during normal to drier than average climatic conditions (Draft EIR, page 4.7-18). Impacts during "prolonged drought conditions" that might result in severe water shortages are speculative and cannot be the basis for finding a significant impact.

Comment No. 6, Water Quality
(*See e.g.*, Page 4.7-12 through 4.7-13, Section 4.7.2, Water Quality; Mitigation Measures WR-3.1 and WR-3.2)

COP-23

The Draft EIR concludes that "a pipeline leak or spill related to shipping could be larger in volume as a result of increase in materials generated." (Draft EIR, page 4.7-12 and page 4.7-20.) Although we are not certain as to the meaning of this sentence in terms of the "increase in materials generated" reference with respect to pipeline movement, there is no increased risk of impacts to water quality from a pipeline spill as a result of the project. The pipeline delivering crude to SMR is of a fixed capacity and the project will not change that capacity. The project cannot create risk of a larger-volume pipeline leak or spill. For these reasons, Mitigation Measure WR-3.2 should be removed from the Final EIR.

Comment No. 7, Coke Piles and Groundwater Quality
(*See e.g.*, Page 4.2-33 and Page 4.2-34; Section 4.2, Public Safety and Hazardous Materials; Mitigation Measures PSHM.3)

COP-24

In several places the Draft EIR states that contaminated groundwater is associated with the storage of coke out-of-doors (referred to in the Draft EIR as "the coke piles"). For example, Page 4.2-33 of the Draft EIR contains the following discussion:

> *"The Environmental Protection Agency has identified the Refinery as a 'corrective action' site due to contamination. According to EPA Resource Conservation and Recovery Act reports, the site has human exposure 'under control,' but migration of contaminated groundwater is 'not under control.' Contacts with the RWQCB indicate that 1) there has been regular groundwater monitoring at the site with the latest data from February, 2011; 2) Reports indicate low levels of TPH and metals; 3) The contaminated groundwater is associated with the coke piles; 4) DTSC is the lead agency on the coke pile clean up; and 5) RWQCB is the lead agency on the groundwater contamination."*

This discussion is relatively thin and misleading, and we offer the following additional information. ConocoPhillips has been conducting groundwater monitoring at SMR under the regulatory authority of the RWQCB since 1994. In addition, ConocoPhillips conducted soil and groundwater assessments in 2001 at the request of the RWQCB of the coke piles, a former pond located in the coke piles, and the area around monitoring well BC-4 to evaluate whether the coke piles, the former coke pond, and a surface water runoff area near well BC-4 were impacting the underlying soil and groundwater.[1,2] Presented below (beginning with the heading "Total Petroleum Hydrocarbons (TPH)") is a summary of the groundwater monitoring results and site assessments as it relates to statements in the Draft EIR regarding: "2) low levels of TPH and metals; and 3) the contaminated groundwater is associated with the coke piles".

COP-25

Before proceeding to the summary of the groundwater monitoring results and the site assessments, however, we take the opportunity to correct two instances where we believe the Draft EIR has mischaracterized information it received from other agencies regarding water quality. First, in claiming that "migration of contaminated groundwater is 'not under control,'" the Draft EIR misrepresents comments that the agencies and/or their EIR contractor received from the Environmental Protection Agency ("EPA"). On September 22, 2011, ConocoPhillips' Marty Hall-Burr had a telephone discussion with EPA's Mitch Kaplan, who works in the Agency's "Environmental Indicators" division (ConocoPhillips had learned that Mr. Kaplan was the source of information mischaracterized in the Draft EIR). Mr. Kaplan remarked that the information as presented in the Draft EIR "could be very misleading." He told us that EPA has not reviewed the groundwater situation at the refinery for more than 20 years, and therefore, cannot "certify" that any groundwater contamination is under control. The fact that EPA lacks the interest in the site and/or knowledge of the site such that it cannot certify to certain conditions on the ground is a far cry from the Draft EIR's conclusion that the "migration of contaminated groundwater is not under control." ConocoPhillips requests that the Final EIR portray this issue correctly, if at all.

COP-26

Second, ConocoPhillips was copied on a letter to you from Alison Jones of the Regional Water Quality Control Board, which expresses her concern that the Draft EIR misrepresents certain statements attributed to the RWQCB concerning groundwater impacts at SMR. We have attached a copy of the RWQCB's comments on the Draft EIR as Exhibit 9 and request that the Final EIR reflect the correct information as addressed in that comment letter.

Total Petroleum Hydrocarbons (TPH)

COP-27

Based on the results of groundwater monitoring, low level concentrations of TPH characterized as diesel (TPHd) have been detected in groundwater monitoring wells at SMR. However, the concentrations of TPHd that have been detected are below the County of San

[1] *BC-4 Site Assessment Report,* Tosco Refining Company, Santa Maria Facility, Secor International Incorporated, June 13, 2001; a copy of which is attached as Exhibit 7.
[2] *Coke Ponds Site Assessment Report*, Tosco Refining Company, Santa Maria Facility, Secor International Incorporated, January 17, 2001; a copy of which is attached as Exhibit 8

Luis Obispo Environmental Health Department and Central Coast Regional Water Quality Control Board Action Levels.

In addition, the source of all the TPHd concentrations that have historically been detected in groundwater is polar, non-hydrocarbon, naturally occurring organic material (NOM). The rationale for this conclusion can be drawn from the following assessment:

COP-28

- NOM is often found in groundwater. The compounds that make up NOM can interfere with gas chromatographic analyses because they can be volatile and elute (come off of the chromatography column) at the same time as TPHd. As a result, groundwater samples may appear to contain TPHd when NOM is the actual source for the detection. To decipher between NOM and actual TPHd detections, select grundwater samples from the refinery have been analyzed for TPHd both using a silica gel cleanup and without a silica gel cleanup. The silica gel cleanup filters out the NOM and leaves only TPHd in the sample, if present. Using silica gel cleanup to decipher between TPHd and NOM is recommended by the San Francisco Regional Water Quality Control Board and by the draft updated Leaking Underground Fuel Tank Program (LUFT) Manual.[3] [4] [5] [6]
- Groundwater samples collected during the Former Coke Ponds Assessment and all groundwater samples collected during groundwater monitoring since 2008 have been analyzed for TPHd both with and without silica gel cleanup. In all cases, TPHd has not been detected in the groundwater samples that have undergone silica gel cleanup. These results indicate that low level detections of TPH in groundwater at the refinery is NOM, not TPHd.

The results of the 2001 Coke Ponds Site Assessment indicated that TPHd concentrations that were detected in coke, process water samples, and coke pond samples either are not soluble or attenuate significantly from the surface to groundwater and do not pose a threat to water quality beneath the coke piles and former coke ponds. These conclusions are based on the following observations derived from the Coke Ponds Assessment and historical groundwater results to the present:

- Analytical results from the Coke Ponds Assessment did not indicate the presence of TPHd in the soil, soil leachate, or the soil pore moisture samples collected from beneath the coke piles.
- Coke particles have not migrated to the underlying sand horizon as evidenced by the sharp contact between the bottom of the coke stockpiles and the underlying sand.

[3] *Use of Silica Gel Cleanup for Extractable TPH Analysis*, San Francisco Bay Regional Water Quality Control Board Memorandum, 1999, included in Exhibit 10
[4] *The Technical Case for Eliminating the Use of the TPH Analysis in Assessing and Regulating Dissolved Petroleum Hydrocarbons in Ground Water*, Zemo and Foote, 2003, included in Exhibit 10
[5] *Technical Justification for Groundwater Plume Lengths, Indicator Constituents, Concentrations, and Buffer Distances*; http://www.swrcb.ca.gov/ust/policy/techjust071211.pdf; included in Exhibit 10
[6] *Draft for Public Comment, Leaking Underground Fuel Tank Guidance Manual*, California State Water Resources Control Board, 2010, a copy of which is attached as Exhibit 11

- The TPHd that was detected in groundwater samples collected from wells in the working coke piles and from wells in the immediate vicinity of the coke piles is a result of NOM.

The coke ponds that were used to separate fine and course coke particles that were present in the coke piles during the 2001 assessment were removed after shutdown of the calciner in 2007. ConocoPhillips does not plan on utilizing coke ponds in the future as they no longer segregate the fine and course coke particles.

Based on the information above, even if the increase in throughput at the refinery resulting from the project would result in additional out-of-doors coke storage, which as explained below it will not, such an increase would not result in an increase in the low levels of TPH in groundwater beneath the coke piles.

Metals

COP-29

Based on the results of groundwater monitoring and the site assessments of the BC-4 area, former coke ponds, and the coke piles, metals that are present in the coke (aluminum, beryllium, cadmium, and nickel) have been detected periodically in refinery groundwater monitoring wells at concentrations above the California Department of Health Maximum Contamination Level (MCL). However, the metals periodically detected in groundwater samples at concentrations above the MCL are not associated with the current dry storage of coke in the coke piles since the former coke pond is longer present at the refinery. The metals detected in groundwater are associated with a surface water runoff area near well BC-4 (wells BC-4 and MW-29), a concrete containment basin near well MW-38, an evaporation pond up gradient of wells BC-5 and BC-6, and an area near well BC-7.

The results of assessment data indicate that the elevated concentrations of metals in the groundwater samples appear related to fluctuations of pH in the groundwater. In turn, with the exception of well BC-7, the pH fluctuations appear related to the fluctuations of groundwater elevations in the vicinity of areas of seasonal water accumulation and/or water storage, not the coke pile storage. The fluctuations in groundwater elevation lead to oxidation and acidification conditions that appear to cause leaching of the naturally occurring metals from the soil.

Because the elevated metal concentrations appear related to low pH conditions in groundwater, run-off area in the vicinity of wells BC-4 and MW-29, a concrete containment pond in the vicinity of well MW-38, and an evaporation/percolation pond in the vicinity of well BC-5, which is related to the runoff and subsequent leaching of metals from soil, increased coke storage volumes would not affect metals concentrations in groundwater.

No Increase in Coke Storage Results from the Project

COP-30

The Draft EIR states that "[a]ny increased coke production would exacerbate … groundwater contamination and thereby produce a significant impact." (Draft EIR, page 4.2-52.) This is incorrect. Even if the coke piles were contributing to groundwater contamination, the project

will not result in any increased quantity of coke storage. On November 27, 2007, ConocoPhillips entered into an agreement with the APCD restricting the size of the out-of-doors coke storage (a copy of the original Agreement, the approved May 11, 2011 Coke and Sulfur Storage and Handling Plan and letter dated May 16, 2011 approving the Plan are attached as Exhibit 12). The pre-project coke storage is at the maximum level allowed pursuant to that agreement and the project will not result in any additional quantities of out-of-doors coke storage. Therefore, for all of the reasons stated above, Mitigation Measure PSHM-3 requiring "lined areas to handle additional coke storage" should be removed.

Comment No. 8, Measure A
(Page 4.5-39; Section 4.5.5.2, San Luis Obispo County Local Coastal Program)

COP-31

"Measure A" is a voter-approved initiative that requires voter approval of any permit, entitlement, lease, or other authorization that would allow the development, construction, installation, or expansion of any onshore support facility for offshore oil and gas activity. Measure A was passed in November of 1986 in response to Cities Service Oil & Gas Corp.'s proposed "Platform Julius" project off the coast of San Luis Obispo. The platform would have had undersea pipelines connected to a nearby onshore processing facility. It was that kind of direct and necessary processing facility that was intended to be the subject of Measure A, which defines "onshore support facility" to mean "…any land use, installation, or activity ***required*** to support the exploration, development, production, storage, processing, transportation, or related activities of offshore energy resources." [emphasis added]. While it receives crude from offshore sources, SMR is in no way "necessary" to support offshore energy resources. Given the global demand for petroleum, there will always be a market for offshore crude oil, regardless of whether SMR is in operation. For this and additional reasons stated below, ConocoPhillips believes that Measure A does not apply to this project and that this determination should be reflected unequivocally in the Draft EIR.

Measure A (referred to in the Draft EIR as "Policy 1A") is referenced on Page 4.5-13, which merely identifies and states the Policy (section is entitled: "Policy 1A New Facilities and Expansion of Existing Sites"). Draft EIR Page 4.5-41 applies the policy and makes the determination "that it is possible to conclude" that the project is not subject to the policy. Whereas the analysis of other land use ordinances within the Draft EIR Section 4.5 makes the definitive statement that a particular ordinance or policy does or does not apply, the determination contains less certain language in that it states merely that "…it is possible to conclude that the Santa Maria Refinery is not required in order to support offshore energy resources and/therefore, is not subject to this policy." ConocoPhillips has provided ample information to the County of San Luis Obispo to support the finding that SMR is not required to support offshore energy resources and, therefore, is not subject to this policy. Therefore, ConocoPhillips requests that the language regarding Policy 1A: New Facilities and Expansion of Existing Site on Page 4.5-41 of the Draft EIR be revised as follows:

"Consistency Analysis: The Santa Maria Facility has historically processed offshore crude from the Outer Continental Shelf (OCS) and Point Pedernales, as well as crude from onshore sources. ConocoPhillips purchases its OCS and Point Pedernales crude on the open market and it does not own or operate any offshore production facility off of California. If ConocoPhillips were to stop purchasing OCS and Point Pedernales crude, then that same crude would instead be purchased by and processed at another refinery. Various refineries in the Los Angeles area can or do receive OCS and Point Pedernales crude through the Plains-All American Pipeline. Likewise, oil could be transported by tanker, or other means, to locations outside the pipeline route (including to foreign buyers). Because there are multiple refineries that can and/or do purchase and process OCS and Point Pedernales crude, the Santa Maria Refinery is not required to support offshore energy resources and, therefore, is not subject to this policy."

Comment No. 9, Noise
(Page 4.3-18; Section 4.3.4, Project Impacts and Mitigation Measures; Mitigation Measure N-1)

COP-32

Mitigation Measure N-1 requires that ConocoPhillips install a sound wall at the Santa Margarita Pump Station to reduce noise levels at the property line to less than 50 dBA. This mitigation measure should be eliminated from the Final EIR for several reasons. First, noise levels at the Santa Margarita Pump Station are within the standards of the county Noise Element. The level of 50 dBA applies to the measurement at the receptor's fenceline. The Draft EIR states that the noise level at the closest residential property line is 40.9 dBA (Draft EIR, page 4.3-11), which is below the County Noise Element limit of 50 dBA.

Second, the pumps operate at maximum capacity. The project (i.e., the increase in throughput) has no effect on pump operation, and therefore, there are no project impacts in terms of increased noise from the pumps. Consequently, there are no impacts to mitigate, let alone significant impacts.

For these reasons, Mitigation Measure N-1 should be removed.[7]

Comment 10: Transportation Emissions
(Pages 4.6-12 to 4.6-13, Mitigation Measure TR-1)

COP-33

The project will result in an increase of truck traffic at a nominal rate of only 4 trucks per day. This is a nominal impact, which is ultimately recognized by the Draft EIR's conclusion that this is a Class III impact. Because this is not a significant impact, there is no requirement for mitigation and Mitigation Measure TR-1 should be removed.

[7] ConocoPhillips notes that it voluntarily installed a sound wall barrier at the pump station earlier this year in response to concerns raised by a community member.

We welcome the opportunity to meet with you at your convenience to discuss any of these comments in greater detail.

Sincerely,

Kristen M. Kopp
Superintendent, Health, Safety and Environment

KMK:MJHB:bes

Enclosures:

1. Redline Draft EIR from ConocoPhillips, Santa Maria Refinery
2. Crude Throughput Project Emission Calculations: Criteria Emissions
   (Note: Refer to these calculations to replace inaccurate data in Table 4.1-7 *2009 Baseline Emissions*, Table 4.1-14 *Proposed Project Emissions*, and Table 4.1-17 *Project Mitigated Emissions*).
3. CEQA Checklist, SCAQMD
4. *AB2588 Health Risk Assessment: 2011 Throughput Increase Project*, Reese-Chambers Systems Consultants, Inc. for ConocoPhillips, October 2011
5. Crude Throughput Project Emission Calculations: GHG Emission Calculations
   (Note: Refer to these calculations to replace inaccurate data in Table 4.1-9 *2007 Refinery Operations*, Table 4.1-18 *Refinery GHG Emissions and Increase over Baseline*).
6. Water Management Agreement
   - Stipulation (June 30, 2005 Version), Santa Maria Groundwater Litigation, Lead Case No.CV 770214
   - Judgment After Trial, filed in January of 2008 and executed by the Court
   - Notice of Execution of Stipulation by the County of San Luis Obispo in August 2005
   - Notice of Execution of Stipulation by ConocoPhillips in August 2005`
7. *BC-4 Site Assessment Report*, Tosco Refining Company, Santa Maria Facility, Secor International Incorporated, June 13, 2001 [8]
8. *Coke Ponds Site Assessment Report*, Tosco Refining Company Santa Maria Facility, Secor International Incorporated, 2001 [8]
9. Draft EIR Comment Letter, dated October 13, 2011, to SLOC APCD from Roger W. Briggs, Executive Officer, Central Coast Regional Water Quality Control Board (RWQCB)

[8] Stantec formerly Secor; ConocoPhillips formerly Tosco

10. • *Use of Silica Gel Cleanup for Extractable TPH Analysis*, San Francisco Bay Regional Water Quality Control Board Memorandum, 1999 (Footnote 3)
    • *The Technical Case for Eliminating the Use of the TPH Analysis in Assessing and Regulating Dissolved Petroleum Hydrocarbons in Ground Water*, Zemo and Foote, 2003 (Footnote 4)
    • *Technical Justification for Groundwater Plume Lengths, Indicator Constituents, Concentrations, and Buffer Distances*, State Water Resources Control Board (Internet at http://www.swrcb.ca.gov/ust/policy/techjust071211) (Footnote 5)
11. *Draft for Public Comment, Leaking Underground Fuel Tank Guidance Manual,* California State Water Resources Control Board, 2010
12. • *Memorandum of Agreement for Coke and Sulfur Storage and Handling Plan* between SLOC APCD and ConocoPhillips, dated Nov. 27, 2007 (ENV 07-022)
    • *Updated Coke and Sulfur Storage and Handling Plan*, dated May 11, 2011
    • Letter from Gary Willey, Manager Engineering Division SLOC APCD: *Approval of the May 11, 2011, Version of the ConocoPhillips Santa Maria Facility Coke and Sulfur Storage and Handling Plan for the Memorandum of Agreement Dated November 27, 2007.*

Bcc: Jean St. Martin (via e-mail)
Jimmy Greene (via e-mail)

ConocoPhillips Santa Maria Refinery
Throughput Increase Project
Environmental Impact Report
Public Draft Comments and Responses- Applicant

Comment #	Response
COP-1	CEQA Air Quality analysis requires the quantification of mobile source emissions as well as emissions from stationary, both permitted and not permitted, sources. It also requires that potential changes in emissions associated with offsite activities, such as transportation changes (movement of materials by pipeline instead of truck, for example) be accounted for. Text related to reduction in emissions below the thresholds has been added so that emissions can be reduced through any of the available mitigation measures, with preference given to onsite emissions reductions.
COP-2	As discussed in the DEIR, increased processing of crude oil would require increased movements of sulfur, increased cycling of coker units, increased cycling of tank levels in the crude oil tanks, etc, all of which would lead to an increase in emissions. This could lead to a potential increase in the frequency of odor events, which would be a significant impact without the included mitigation.
COP-3	The development of the California Cap and Trade program is currently in its infancy and the interaction of the Cap and Trade program with individual agency CEQA thresholds has not been established at this time. In addition, according to the California Attorney General, in response to issues associated with the SJVAPCD GHG Offset program (Letter from the CA Dept of Justice to the SJVAPCD dated Oct 10, 2011), "*.. credits that are the result of regulatory requirements cannot legally be used for CEQA mitigation*." And "*Offsets used in mitigation cannot, however, be based on reductions that were legally required*". Section 15126.4, subdivision (c)(3), of the CEQA Guidelines states that measures to mitigate the significant effects of GHG emissions may include "*..off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions*". Therefore, at least at this time, the FEIR conservatively assumes that reductions in GHG emissions would be required and offsets would have to be obtained from the SLOAPCD.
COP-4	Based on a review of the most recent (May 2011) Coke and Sulfur Storage and Handling Plan, the coke pile is limited in its extents to the area in the layout figure in the plan. As long as coke is deposited within this designated area, then the extent of coke affected area would not increase with the proposed increase in coke throughput associated with the proposed Project. In addition, we are in receipt of the comment letter from the RWQCB that acknowledges no expected impacts from the coke pile to groundwater as a result of the 10 percent throughput increase. Impacts would therefore be less than significant and the FEIR has been modified accordingly.
COP-5	Section 22.10.120 (E)(2) of the County Land Use Ordinance states that exterior noise levels shall be measured at the property line of the affected land use. As indicated in the DEIR, Table 4.3-5, the allowable noise level is as determined at the property line of the receiving land use. Therefore, for determining consistency with the Noise Standards in the County Land Use Ordinance, the noise level at the property line is the determining value, not the noise level at the residence on the adjoining property. Noise was measured for the FEIR at the fence line of the pump station, which would

Comment #	Response
	present the greatest noise impact to nearby parcels. Some discrepancy exists related to the level of occupancy of the adjacent land use and the exact location of which parcel to measure at. However, in order to be conservative for the EIR, the noise levels at the facility property line during nighttime hours was measured.
COP-6	A Water Supply Assessment was conducted for this Final EIR as part of the requirements of SB610. The Final EIR concludes that the water use would increase by one percent or 11 acre-feet to 1,110 AF/yr. Per the Stipulation, in a severe water shortage condition ConocoPhillips would be limited to 110% of the historical water production or 1,550 AF/yr. 1,110 AF/yr is less than 1,550 AF/yr. Therefore there would be enough groundwater available for the Project and no impact is envisioned. The Final EIR has been modified to reflect the water rights attributed to ConocoPhillips under the Stipulation and the requirement for a Water Management Plan has been eliminated.
COP-7	While there would not be any increase in water discharge beyond the NPDES limits, there will be an increase in overall water discharge for the Project. WR-3.1 simply requires that additionally generated produced water as a result of the Project is treated by the wastewater treatment system in conformance with the NPDES permit. Similarly, WR-3.2 provides for the latitude to make amendments, as needed, which as pointed out in the comment, may not be necessary as a result of the Project not increasing spill size. However, with an increased throughput, there is the potential for an increase frequency of spills especially during the rainy season when the WWTP is operating at or near capacity.
COP-8	Section 4.4, Public Services, impact PS.5, indicates that impacts to fire protection and emergency response would be less than significant and states that the Project would not increase fire risk and fire fighting requirements.
COP-9	Section 4.6, Transportation and Circulation, impact TR.1 concludes that the impacts would be less than significant. Mitigation was added at the request of the Department of Public Works in order to ensure that road impact fees are paid by the Applicant.
COP-10	The DEIR has applied the court established precedent that permit limits that are previously covered by CEQA analysis should be considered the baseline in the EIR. This is fully described in the recent court decisions CBE vs SCAQMD. Therefore, the DEIR estimates what the impacts would be associated with operations at the permit limit of 44,500 bpd and utilizes this as the baseline for the project. This is based on the previous CEQA analysis for the permitted operations in 1990 by the County of San Luis Obispo Planning Department as stated in the comment.
COP-11	The DEIR correctly indicates that the SMR receives crude oil from pipeline only and that the crude oil is delivered to the pipeline by truck. Section 2.1.2 Page 2-7 of the DEIR states "*the SMF receives all crude oil for processing by pipeline from various sources, including…*" CEQA requires that the baseline be the operations that occur at the time of the issuance of the NOP or the operations that are permitted if previous CEQA analysis has been conducted. Although the SMF certainly provides a beneficial service to the area by accepting and processing crude oil that is produced in the region, these benefits are not a part of the CEQA analysis because they are not brought about by the implementation of the proposed Project. The DEIR acknowledges this benefit in Section 2.1.2 by stating "*For the independent oil producers, without pipeline access, the SMF offers a relatively close outlet to refine locally produced oil*". However, in the absence of the SMF, area producers would most likely utilize a pipeline

Comment #	Response
	system that connects to the LA area and would offload their crude oil at an area pump station for transport to markets via pipeline. The benefits to the area would be negligible in this case. CEQA requires that an EIR examine the "*reasonably foreseeable indirect physical change in the environment*" and that it examine "*all the direct or indirect environmental effects of a project*". Also, "*An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment. For example, the construction of a new sewage treatment plant may facilitate population growth in the service area due to the increase in sewage treatment capacity and may lead to an increase in air pollution*. (CEQA 15064). The increased processing of crude oil at the refinery could cause the indirect impact of increasing truck traffic on area highways in order to bring additional crude oil to the refinery. In the absence of this additional capacity, local area producers may elect to not produce the additional crude oil due to the potentially higher transportation costs/requirements. Note that, given high crude prices, this most likely would not be the case. However, the U.S. Energy Information Administration estimates that the low range of crude oil prices over the next 20 years is down to $41 per barrel, which if accurate, may make many fields marginal in the area and transportation costs might be sufficient to cause these fields to not be developed. The DEIR must examine the reasonable worst case scenario in order to provide full disclosure to the public and the decision makers. The SCAQMD 350 truck trip threshold is not based on air emissions from trucks, but is based on impacts to traffic circulation, as indicated by its inclusion in part IV "Transportation/Circulation" of the SCAQMD form 400 CEQA title. Other questions in part IV include adding more than 350 employees or 700 visits per day. Note that the DEIR did not identify any impacts associated with transportation/circulation. The FEIR has been updated to include the results of the 2011 HRA. However, the DEIR, utilizing the 2004 HRA with subsequent modification, did not identify any significant impacts associated with health risk and the conclusions, therefore, when utilizing the 2011 HRA, are the same as the DEIR.
COP-12	The APCD prefers that the mitigations for NOx and ROG be obtained onsite, followed by reductions obtained through offsite mitigations. The mitigation measures have been modified in the FEIR to allow for the use of the onsite measures and to require credits or cleaner trucks only if additional reductions would be required.
COP-13	As discussed in the DEIR, increased processing of crude oil would require increased movements of sulfur, increased cycling of coker units, increased cycling of tank levels in the crude oil tanks, etc, all of which would lead to an increase in emissions. Many processes at the SMF are not cyclic, such as valve leaks, and these sources would not change with the proposed Project. However, those processes that would increase in the number of annual cycles and annual emissions, such as those listed above, could lead to a potential increase in the frequency of odor events, which would be a significant, but mitigable impact.

Comment #	Response
COP-14	Mitigation measure AQ-2 has been retained in the FEIR. Information obtained from the APCD indicates that the SMF averages 3.3 verified odor complaints per year with a peak in 2008 of 11 verified odor complaints. Note that the SCAQMD considers 6 or more verified odor events per year to be a nuisance and would be considered a significant impact. The SLO APCD handbook indicates that more than one confirmed complaint per year averaged over a three year period or three unconfirmed complaints per year averaged over a three year period would be considered a significant impact and indicates that a "*project has the potential to cause an odor or other nuisance problem which could impact a considerable number of people, then it may be considered significant*" (CEQA handbook). Refineries located within 2 miles of residential areas (CEQA Handbook), which the SMF is, would also be considered a potentially significant impact. So the determination of significant in the DEIR due to the increased potential for odor events exacerbating an existing potentially significant impact is warranted along with the proposed mitigation.
COP-15	The development of the California Cap and Trade program is current in its infancy and the interaction of the cap and trade program with individual agency CEQA thresholds have not been established at this time. In addition, according to the California Attorney General, in response to issues associated with the SJVAPCD GHG Offset program (Letter from the CA Dept of Justice to the SJVAPCD dated Oct 10, 2011), "*.. credits that are the result of regulatory requirements cannot legally be used for CEQA mitigation*." And "*Offsets used in mitigation cannot, however, be based on reductions that were legally required*". Section 15126.4, subdivision (c)(3), of the CEQA Guidelines states that measures to mitigate the significant effects of GHG emissions may include "*..off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions*". Therefore, at least at this time, the FEIR conservatively assumes that reductions in GHG would be required to be obtained from the SLOAPCD. GHG emissions numbers have been updated in the FEIR with more recent numbers submitted by the Applicant.
COP-16	Mitigation measure AQ-3 has been retained in the FEIR as discussed in response to COP-15 above.
COP-17	The Final EIR has been amended in response to this comment and recognizes the long history of water rights in this area along with the Court Stipulation.
COP-18	The Final EIR has been updated in response to this comment.
COP-19	Please see response to comment COP-6. The Final EIR has been amended in response to this comment and the requirement for a Water Management Plan has been eliminated.
COP-20	Please see response to comment COP-6. The Final EIR has been amended in response to this comment and the requirement for a Water Management Plan has been eliminated.
COP-21	Please see response to comment COP-6. The Final EIR has been amended in response to this comment and the requirement for a Water Management Plan has been eliminated.
COP-22	Please see response to comment COP-6. The Final EIR has been amended in response to this comment and the requirement for a Water Management Plan has been eliminated.
COP-23	By increasing the throughput of the pipeline by 10%, the size of a spill could be larger. Spills sizes are a combination of the "drain-down" of the pipeline to the leak location (affected by terrain and fluid dynamics) in combination with releases due to continued pumping after the leak occurs and the time it

Comment #	Response
	takes to shut down the pumps. The drain-down portion of the leak size would be the same, but the pumping portion of the spill size would be larger as more crude oil would be pumped through the pipeline. The DEIR concludes that the increase in spill volume would be nominal and would not produce an increase in impacts associated with the Project. Text has been added to Section 4.7 to clarify this.
COP-24	Text has been added to Section 4.2 to describe the historical monitoring and the results of the 2001 coke pile assessments.
COP-25	The information pertaining the "groundwater migration not under control" was taken directly from the EPA website RCRA Corrective Action Site Progress Profile for the CONOCOPHILLIPS SANTA MARIA FACILITY REFINERY (ID: CAT080010796) which clearly states that "At this site, migration of contaminated groundwater is not under control." This is publically available information and for full disclosure is provided in the DEIR for the public and the decision makers benefit. The web site and reference for this information are provided in the references section of the DEIR and referred to in section 4.2 and the DEIR clearly states that "According to EPA Recourse Conservation and Recovery Act reports." The DEIR does not characterize the situation as "out of control", but only states that the current status of the facility with the EPA is "out of control", which is an accurate statement. Subsequent information pertaining to the RWQCB information submitted as comments to the DEIR indicate that the "limited impacts to groundwater that have been detected at the site during the past several years of groundwater monitoring (primarily low levels of metals and total petroleum hydrocarbons that generally have not exceeded standards and do not appear to be migrating off site)". This information has been added to the DEIR.
COP-26	Information from the RWQCB has been added to the FEIR.
COP-27	Information on the TPH and metals as reported in the Coke Ponds Site Assessment has been added to the FEIR in Section 4.2.
COP-28	Information on the NOM TPH has been added to the FEIR Section 4.2.
COP-29	Information on the metals and area pH near the run-off area has been added to the FEIR section 4.2.
COP-30	Modifications to mitigation measure PSHM-3 have been added to the FEIR to ensure that the extent of coke storage does not go beyond the area defined in the Coke and Sulfur Handling Plan limits and, if it does, then these areas should be lined. Impacts associated with increased movements of coke could have impacts if the coke storage pile area increases in area.
COP-31	The Draft EIR unequivocally states that Measure A does not apply to the ConocoPhillips Throughput Increase Project and that the facility is not required or necessary for offshore oil and gas processing.
COP-32	The DEIR indicates that the noise levels at the pump station property line, abutting parcels zoned as AG, would exceed the 50 dBA thresholds. Mitigation measures to reduce these noise levels have been retained in the FEIR.
COP-33	Although mitigation measures associated with Class III impacts are not required, they can be placed in the EIR as mitigation measure TR-1 was, per the request of the County Public Works. Traffic fees are established by Public Works to address improvements that are generated by a cumulative increase in traffic. These improvements would be implemented through a fair-share cost sharing program with the cumulative projects as directed by Public Works.

California Regional Water Quality Control Board
Central Coast Region

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Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

October 13, 2011

Ms. Aeron Arlin Genet, Planning and Outreach Manager
Air Pollution Control District
3433 Roberto Court
San Luis Obispo, CA 93401

Dear Ms. Genet:

SUBJECT: DRAFT ENVIRONMENTAL IMPACT REPORT DRC2008-00146/SCH #20081010111

CRWQCB-1

We wish to correct conclusions that may have been attributed to the Central Coast Water Board (RWQCB) in the Draft Environmental Impact Report for the proposed increase in throughput at the ConocoPhillips Santa Maria Refinery. The relevant pages are: page ES-5, Public Safety and Hazardous Materials; page ES-11, Table 1; page 4.2-33; and page 4.2-52.

Based on the limited impacts to groundwater that have been detected at the site during the past several years of groundwater monitoring (primarily low levels of metals and total petroleum hydrocarbons that generally have not exceeded standards and do not appear to be migrating off site), we do not anticipate any increased impact to groundwater from a ten percent increase in production at the site. It is our understanding that the coke piles will not be allowed to increase in volume, regardless of the increased production at the facility. Even assuming a ten percent increase in coke production, given no other changes, it is unlikely that we would see any increased impacts to groundwater quality.

Thank you for the opportunity to comment. If you have any questions about this letter or the groundwater monitoring at the facility, please contact Alison Jones at (805) 542-4646 or by email: ajones@waterboards.ca.gov.

Sincerely,

Alison Jones

for Roger W. Briggs
Executive Officer

S:\Site Cleanup Program\REGULATED SITES\San Luis Obispo Co\Arroyo Grande\ConocoPhillips Santa Maria Refinery, 2555 Willow Rd\Correspondance\DEIR comment letter 9-11 final

Cc: Kristen Kopp, ConocoPhillips Company

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Flex your power!
Be energy efficient!

October 13, 2011

Murry Wilson
San Luis Obispo County Planning and Building

SLO 1 pm 6.38
SCH 2008101011

Aeron Arlin Genet
Air Pollution Control District

3433 Roberto Court
San Luis Obispo, CA 93401

ConocoPhillips Santa Maria Refinery Throughput Increase Project Draft Environmental Impact Report

Dear Mr. Wilson and Mr. Genet:

Thank you for the opportunity to provide comments upon the subject project and Draft Environmental Impact Report (DEIR). The proposed project does not anticipate changes to the refinery's physical plant. The proposed project will increase the current permitted amount of oil product (both crude and semi-refined) by 4450 barrels per day. If approved, the total amount of permitted refining capacity will be 48,900 barrels per day. Product and by-product transportation is one of the project's predominate components which will be affected. It is to that which these comments are directed. According to the DEIR all product is transported to the refinery via pipeline from various locations and by-product is transported from the refinery by truck or rail. That is not expected to change. Caltrans provides the following comments:

1. Section 2.0 Project Description; Table 2-8; Section 4.6.4; Baseline; Permitted Operations.

DOT-1 In terms of truck trips, it is unclear what is being communicated when these sections are reviewed together. Is Baseline and Current Operations and Permitted Operations / Capacity all the same? Or is it Baseline as compared to the change year-to-year? This discussion should be made clear. Table 2-8 and Section 4.6.4 should be in agreement.

DOT-2 Truck trips: the discussion indicates that the proposed project results in 3.9 truck trips per day over what is currently permitted. This is in terms of coke and sulphur removal. The discussion also indicates that there will be an increase of 11.4 trips over 2009 volumes. These numbers should be reconciled and identified by type of trip.

DOT-3

None of these trips appear to include the truck trip increase which is specific to the increase of crude and semi-refined product delivery to SMPS. If the proposed project increases capacity by 4450 bbls/day, this would equate to about 28 truck trips / day, or, consistent with Table 2-8, about 10,200 one way trips / year. If not all the increased oil product will be delivered to SMPS by truck, a clear discussion should be included the breaks out an anticipated percentage of delivery by mode. If additional product will be moved only by pipeline from a producer, the discussion should include whether or not that originator is within its permitted production / shipping capacity. It appears that all of the new product will in fact be delivered to the pumping station by truck.

DOT-4

2. Traffic Analysis. There doesn't appear to be a traffic analysis accomplished for this project. It appears that sources from previous studies were used to arrive at conclusion. Thus, there are no analytical worksheets to review. Intersections at SR 1 / Willow Road, SR 1 / SR 166, and the US 101 interchange which will receive the truck trips to the Santa Maria Pump station are omitted altogether. These, as well as the project driveway / SR 1 intersection should receive fresh analyses, supported by worksheets, and then placed into Table 4.6-4. Caltrans is unable to comment on the technical analysis as provided.

DOT-5

3. Mitigation measure TR-1: With respect to route consolidation, Caltrans concurs. Regarding any road impact fee payment, the fee should be based on a truck's passenger car equivalent (PCE). Typically one truck equals three PCEs.

DOT-6

4. Additional mitigation measures: in the absence of the analysis discussed in item 2, it is not known if additional mitigation should be recommended for direct impacts. It is possible that there are appropriate mitigation opportunities available for impacts at the interchange used to access the SMPS.

DOT-7

5. Coke inventory reduction truck trips. Table 2-8 depicts 5110 truck trips / year engaged in the transportation of excess onsite coke inventory. This activity is a result of an order issued by the Air Pollution Control District. These trips are not part of the refinery's current operational permit nor are these trips part of the proposed project. It must be made clear within the DEIR that although these trips are regularly occurring and are discussed within the DEIR, they are not part of the approval or disapproval of the proposed project. Nor should these trips be considered, through this environmental document, as having undergone environmental review.

   It is important, nonetheless, that the lead agency determine the extent to which these trips will continue and whether they are or should be subject to direct or cumulative

mitigation measures. In the event some action is undertaken relative to environmental review for this subject, a comprehensive traffic analysis would be required.

Thank you for the opportunity to provide comments. If there are questions about this correspondence, please call me at (805) 549-3632 or email at chris.shaeffer@dot.ca.gov.

Sincerely,

Chris Shaeffer
Development Review
Caltrans District 5

Cc: L. Newland, CT
F. Boyle, CT
C. Utter, CT

GUADALUPE FIRE DEPARTMENT
918 Obispo Street
P.O. Box 908
Guadalupe, CA 93434
805 356-3905

September 27, 2011

Aeron Arlin Genet
San Luis Obispo County Air Pollution Control District
3433 Roberto Court
San Luis Obispo, CA 93401

RE: CITY OF GUADALUPE COMMENTS - CONOCO PHILLIPS DRAFT EIR

Mr. Genet;
I have reviewed this Draft EIR on behalf of the City of Guadalupe and have the following comments for your consideration.

GFD-1

Page 1-4, 1-5, and 1-7:
These pages list organizations and individuals contacted for input. The City of Guadalupe was not listed, and I assume we were not consulted for comment. This is a problem and we would like an explanation as to why the City of Guadalupe was not included.

GFD-2

Page 2-9, Table 2-4:
Based on the descriptions of the truck routes contained in this Draft EIR, in 2009, 1,011 trucks carrying 157,368 barrels (6,609,456 gallons) of petroleum product passed through downtown Guadalupe via State Route 1. The potential impacts to the City of Guadalupe are not addressed nor even mentioned anywhere in this Draft EIR. These impacts must be addressed and/or mitigated.

GFD-3

Page 2-17 and 2-18:
These pages, including Table 2-6 and Figures 2-8 and 2-9 describe the amount and destinations for the Coke and Sulfur products shipped from the facility. The majority of the truck shipments appear to be destined to the east of the coastal area. Using the truck route information contained elsewhere in this Draft EIR, it appears that in 2009, 15,009 truckloads of Coke and sulfur passed through downtown Guadalupe, enroute to Highway 166 and the central valley. This Draft EIR does not mention any potential impacts to the City of Guadalupe for the existing volume of shipments, and does not address any potential impacts to the City of Guadalupe for the proposed increase as described in this Draft EIR. These impacts must be addressed and/or mitigated.

Fire Chief Jack L. Owen, Jr.
Captain Fernando Garcia, Captain Richard Galindo III, Captain Patrick Schmitz

GFD-4

Page 2-25:
This page clearly states that this proposed project would increase the number of shipments leaving the facility by truck. In addition, this proposed project requests that Conoco Phillips be allowed to begin processing *"Previously Refined Gas/Oil Petroleum Liquid"*, which will be *"trucked into the Santa Maria Pump Station"*.

This page also states that the additional Coke transported by truck would increase, and the rail shipment would decrease *"as there are no permit limits on the distribution of truck versus rail transportation levels." "To assess potential impacts under the worst-case scenario, it is assumed that the future production of Green Coke and Sulfur would be transported by truck and rail at the historical highest levels of truck usage."* This Draft EIR does not address the potential impacts to the City of Guadalupe due to these proposed increases. These impacts must be addressed and/or mitigated.

GFD-5

Page 3-2:
Section 3.2 indicates that input was sought from Planning Departments of San Luis Obispo County, City of Arroyo Grande, and City of Santa Maria. No input was solicited from the City of Guadalupe. . This exclusion is a problem and we would like an explanation as to why the City of Guadalupe was not included.

The City of Guadalupe is currently processing a Specific Plan for a residential and commercial development of approximately 800 homes, plus supporting commercial zoning located on the south side of Highway 166, east of the Union Pacific Railroad tracks. The proposed project would affect this new development and should be included in this Draft EIR.

GFD-6

Page 4.2-34:
This page details the amounts and destinations for hazardous waste generated at the facility. Two of the three destinations are in Southern California and the truck route for these destinations could pass through the downtown corridor of the City of Guadalupe.

GFD-7

Page 4.3-8:
Section 4.3.1.4 lists land uses that may be affected by noise associated with this proposed project. There is no reference to existing or future noise impacts due to increased truck traffic through the downtown corridor of the City of Guadalupe (Highway 1) and adjacent residential areas along Highway 166.

GFD-8

Page 4.3-10
Section 4.3.1.5 describes specific locations that were surveyed for noise levels. There were no noise level studies for traffic done within the City of Guadalupe.

GFD-9

Page 4.6-4 and 4.6-5:
This describes the "Southbound Route" truck traffic follows from the plant to access the San Joaquin Valley and Southern California destinations. This description should include an acknowledgement that this route passes through the downtown corridor of the City of Guadalupe (Highway 1) and adjacent to residential areas along Highway 166.

GFD-10

Page 4.6-8:
Table 4.6-3 provides information about traffic volumes and capacities for sections of roadway affected by vehicle traffic for the various routes involved with the facility. This Draft EIR does not address the traffic volumes or capacities for roadway sections within the City of Guadalupe, including, but not limited to: Highway 1 at 11th Street, Highway 1 at Olivera Street (Safe Route to Schools crossing), Highway 1 at Highway 166, Highway 166 at Obispo Street, and Highway 166 at Flower Street.

GFD-11

Page 4.6-9
Table 4.6-4 provides information about intersections affected by vehicle traffic for the various routes involved with the facility. This Draft EIR does not address the effects of traffic on intersections within the City of Guadalupe, including, but not limited to: Highway 1 at 11th Street, Highway 1 at Olivera Street (Safe Route to Schools crossing), Highway 1 at Highway 166, Highway 166 at Obispo Street, and Highway 166 at Flower Street.

GFD-12

Page 5-9:
Section 5.8.2 discusses an "Alternate Eastbound Route". This Draft EIR does not address potential impacts of this alternative to the City of Guadalupe as previously described in this letter.

GFD-13

Page 5-10:
Section 5.8.2 discusses an "Alternate Southbound Route". This Draft EIR does not address potential impacts of this alternative to the City of Guadalupe as previously described in this letter.

GFD-14

The map on this page does not show the City of Guadalupe and thus does not acknowledge its existence.

Page 5-11:
The map on this page does not show the City of Guadalupe and thus does not acknowledge its existence.

GFD-15

Page 6-8 and 6-15:
Section 6.1.3 discusses the "Southbound Route Alternative". The discussion of this alternative specifically addresses the "reduced traffic along Main Street in Santa Maria" but is silent as to the potential effects on the City of Guadalupe.

Fire Chief Jack L. Owen, Jr.
Captain Fernando Garcia, Captain Richard Galindo III, Captain Patrick Schmitz

GFD-16 **Page 6-9:**
Section 6.1.3.6 again addresses the effects of the alternative to one specific intersection in Santa Maria, but is silent as to any effects on the City of Guadalupe.

GFD-17 **Page 6-10 and 6-11:**
Table 6-1 does not address any current or future potential impacts to the City of Guadalupe from this proposed project.

GFD-18 **Page 8-6:**
Table 8-2, "Impact PSHM.2" may need to be revised based on the assessment of potential impacts to the City of Guadalupe as a result of responses to issues identified via this letter.

GFD-19 **Page 8-8:**
Table 8-3, "Impact N.2" may need to be revised based on the assessment of potential impacts to the City of Guadalupe as a result of responses to issues identified via this letter.

GFD-20 **Page 8-10:**
Table 8-3, "Impact PS.5" may need to be revised based on the assessment of potential impacts to the City of Guadalupe as a result of responses to issues identified via this letter.

GFD-21 **Page 8-10:**
Table 8-6, "Impact TR.1" may need to be revised based on the assessment of potential impacts to the City of Guadalupe as a result of responses to issues identified via this letter.

GFD-22 In closing, the City of Guadalupe is supportive of this proposed project and the benefits it will provide. However, we believe that this Draft EIR as currently written does not adequately identify potential impacts to the City of Guadalupe from this proposed project and does not identify any mitigation to those impacts. It is our desire that the points identified in this letter be addressed prior to the final certification of an EIR and subsequent approval of this proposed project.

Should you have questions, please call me at 805 356-3900, and thank you for your consideration.

JACK L. OWEN, JR.
Fire Chief

County Of Santa Barbara

Chandra L. Wallar
County Executive Officer

105 East Anapamu Street, Suite 406
Santa Barbara, California 93101
805-568-3400 • Fax 805-568-3414
www.countyofsb.org

Executive Office

October 17, 2011

Ms. Aeron Arlin-Genet, Planning and Outreach Manager
Air Pollution Control District
3433 Roberto Court
San Luis Obispo, CA 93401

Email: aarlingenet@co.slo.ca.us
Fax: 805-781-1002

Re: ConocoPhillips Santa Maria Refinery Throughput Increase Project Draft Environmental Impact Report

Dear Ms. Arlin-Genet:

Thank you for the opportunity to comment on the ConocoPhillips Santa Maria Refinery Throughput Increase Project Draft Environmental Impact Report (DEIR). At this time, the County submits comments from the Planning and Development Department for your consideration.

The County looks forward to continued dialogue with the APCD on future projects. If you should have further questions, please do not hesitate to contact my office directly or Glenn Russell, Director, Planning and Development Department, at (805) 568-2085.

Sincerely,

Chandra L. Wallar
County Executive Officer

Cc: Glenn Russell, Ph.D., Director of Planning and Development
Doug Anthony, Deputy Director, Development Review North Division

Enclosures: Planning and Development Department letter, October 12, 2011

Terri Maus-Nisich
Assistant County Executive Officer
tmaus@countyofsb.org

Dennis Bozanich
Assistant to the County Executive Officer
dbozanich@co.santa-barbara.ca.us

County of Santa Barbara
Planning and Development
Glenn S. Russell, Ph.D., Director
Dianne Black, Director of Development Services
Jeff Hunt, Director of Long Range Planning

October 12, 2011

Aeron Arlin-Genet, Planning and Outreach Manager
Air Pollution Control District
3433 Roberto Court
San Luis Obispo, CA 93401

Re: ConocoPhillips Santa Maria Refinery Throughput Increase Project Draft Environmental Impact Report

Dear Ms. Arlin-Genet:

Thank you for the opportunity to comment on the ConocoPhillips Santa Maria Refinery Throughput Increase Project Draft Environmental Impact Report (DEIR).

SBC-1

Santa Barbara County's Planning and Development Department (P&D) requests the CEQA Lead Agency(ies) identify Santa Barbara County as a Responsible Agency under CEQA for this proposed project if the proposed project description remains as stated in Chapter 2.0 of the DEIR. Meanwhile, Santa Barbara County staff will contact ConocoPhillips and direct it to either submit the appropriate permit to the Santa Barbara County Planning and Development Department (P&D), or formally revise its project description to avoid the Santa Maria Pump Station.

SBC-2

P&D requests the CEQA lead agency(ies) revise the DEIR to include adequate environmental analysis of impacts and mitigation associated with the use of the Santa Maria Pump Station as a component of this project so that the scope of the environmental review considers the whole of the project.

2.0 Project Description

SBC-3

Page 2-25, Paragraph 2. This paragraph identifies a component of the proposed project situated in the unincorporated area of Santa Barbara County for which ConocoPhillips has not submitted the necessary permit application. That component consists of the use of the Santa Maria Pump Station and the pipeline that connects the pump station with the subject Santa Maria Facility. This pump station and the segment of the referenced pipeline situated in Santa Barbara County is currently permitted to handle crude oil, and is not permitted to handle previously refined gas/oil petroleum liquid that would be trucked to the Santa Maria Pump Station (SMPS) from several different external sources of upgrader refineries.

123 E. Anapamu Street
Santa Barbara, CA 93101
Phone: (805) 568-2000
FAX: (805) 568-2030

624 W. Foster Road
Santa Maria, CA 93455
Phone: (805) 934-6250
FAX: (805) 934-6258

Please expand upon this project description to describe the current SMPS operation, storage capacity, and potential for future increases in local crude oil production to fill that capacity.

3.0 Cumulative Projects Description

SBC - 4

Please revise this chapter to include pending oil development projects in Santa Barbara County that would make use of the Santa Maria Pump Station.

4.1 Air Quality

SBC - 5

The analysis does not discuss any potential implications to divert local oil production in the future from the pump station should it encounter peak capacity with the importation of gas/oil petroleum liquid. This analysis should be completed and included. The potential to divert future oil production on and offshore Santa Barbara County to other modes of transportation needs to be addressed, along with potential air quality impacts. We would hope that the proposed project would not have any potential of having Santa Barbara County crude oil exported from the County via truck to accommodate imported gas/oil petroleum liquid should capacity limitations at the Santa Maria pump station be reached.

4.5 Land Use and Policy Consistency Analysis

SBC - 6

Please revise this chapter to address consistency with Santa Barbara County policies and analyze land use relevant to the proposed change in use of the Santa Maria Pump Station. Please be sure to address any potential to result in adverse effects should imported volumes of gas/oil petroleum liquid into the pump station cause Santa Barbara County oil producers to seek other downstream modes of transportation for future oil production, or be shut-in.

4.6 Transportation and Circulation

SBC - 7

Please revise this chapter to address any potential for future capacity issues that may result in Santa Barbara County oil producers to resort to other destinations for marketing their production. In particular, analyze the potential for the Santa Maria pump station to turn away local production as it accepts imported gas/oil petroleum liquid.

Thank you again for the opportunity to review this DEIR and if you should have further questions, please do not hesitate to contact my office directly, or Jeff Hunt, Director of Long Range Planning Division, at (805) 568-2072.

Sincerely,

Glenn Russell, Ph.D.
Director of Planning and Development

ConocoPhillips Santa Maria Refinery
Throughput Increase Project
Environmental Impact Report
Public Draft Comments and Responses- Agencies

Comment #	Response
CRWQCB-1	Information from the RWQCB has been added to the FEIR.
DOT-1	Text has been added to the FEIR to clarify that the baseline is the SMF operating at its current permitted capacity. The permitted capacity was utilized as the baseline because of the existence of a previous CEQA document analyzing the SMF operations up to the permit limit.
DOT-2	Text has been added to the FEIR to clarify that the baseline is the SMF operating at its current permitted capacity. Reference to the 2009 levels is not relevant to the CEQA analysis.
DOT-3	The DEIR, section 4.1.4, contains a discussion of the additional truck trips associated with increased movements of crude oil. This discussion has been added to section 2. Appendix A also contains detailed spreadsheets showing the location of the crude oil increases and the associated truck trips within each County.
DOT-4	In general, previous studies were utilized to assess traffic impacts at different intersections based on the LOS identified in those previous studies. However, some intersections were added based on the comments. An appendix has been included detailing the HCS output and the assumptions made in the LOS analysis. Additional text has been added in the FEIR based on this analysis.
DOT-5	The details of the impact fee would be arranged between the Applicant and the respective agency (CalTrans or Public Works).
DOT-6	No additional impacts are identified for the intersections analyzed in the FEIR. No additional mitigation measures are required.
DOT-7	The coke inventory reduction has been occurring as a part of the baseline analysis and was therefore included in the baseline assessment.
GFD-1	The transportation of materials from the refinery could travel through a number of localities (to the north, east and south of the refinery) and not all localities/residences along the transportation routes were contacted as part of the EIR process. Caltrans was contacted as the materials could be transported on Highway 1 through the City of Guadalupe.
GFD-2	The movement of trucks through Guadalupe as part of the existing refinery operations is discussed as a matter of baseline in the EIR. The proposed project is the potential increase in refinery throughput by 10%, which would result in up to 4

Comment #	Response
	additional truck trips per day leaving the refinery. As per CEQA guidelines, the EIR examines the potential impacts of the proposed project, not the current baseline operations. The exact routes of the refinery coke and sulfur are a function of market conditions and not all of the trucks trips listed in section 2 would travel through Guadalupe. The trucks could move through Willow to Highway 101 as well as through Guadalupe to Highway 101. Petroleum products, not including coke or sulfur (both solids) are not transported by truck out of the refinery. The travel routes pass through a number of different communities, including Guadalupe, Santa Maria, Nipomo, Oceano, Arroyo Grande as well as unincorporated sections of Santa Barbara and San Luis Obispo Counties. These Cities and towns are identified on the maps in section 4.6. Relevant intersections and roadway segments have been included in the EIR, and some added to the FEIR based on comments (such as the Highway 1/166 intersection in Guadalupe) in these different communities. Impacts on the different communities, including Guadalupe, are included within the EIR through the assessment of levels of service on roadway segments and intersections within those communities. Additional text has been added to section 4.6 to highlight the location of the routes.
GFD-3	The DEIR assesses the impacts of truck traffic through the use of previous traffic assessments on 26 different roadway segments and 19 different intersections in the project area. Two of these are located within Guadalupe. Impacts are assessed utilizing LOS analysis and effects on the roadway capacities and traffic flow. The materials are not hazardous or explosive. The movement of trucks through Guadalupe as part of the existing refinery operations is discussed as a matter of baseline in the EIR. The proposed project is the potential increase in refinery throughput by 10%, which would result in up to 4 additional truck trips per day leaving the refinery. As per CEQA guidelines, the EIR examines the potential impacts of the proposed project, not the current baseline operations. Intersections within Guadalupe have been added to the FEIR based on comments received on the DEIR. The EIR addresses traffic impacts to intersections and roadways with Guadalupe and the potential health risks of increase diesel truck traffic along roadways, including through the City of Guadalupe.
GFD-4	The DEIR assesses the impacts of truck traffic through the use of previous traffic assessments on 26 different roadway segments and 19 different intersections in the

Comment #	Response
	project area. Two of these are located within Guadalupe. Impacts are assessed utilizing LOS analysis and effects on the roadway capacities and traffic flow. The materials are not hazardous or explosive. The movement of trucks through Guadalupe as part of the existing refinery operations is discussed as a matter of baseline in the EIR. The proposed project is the potential increase in refinery throughput by 10%, which would result in up to 4 additional truck trips per day leaving the refinery. As per CEQA guidelines, the EIR examines the potential impacts of the proposed project, not the current baseline operations.
GFD-5	Input was sought from communities where roadways do not have published traffic counts, such as from CalTrans along designated Highways (Highway 1 and 166, for example). The route through Guadalupe has published traffic count data from CalTrans and the City of Guadalupe was therefore not contacted in regards to traffic information. The housing proposal has been added to the cumulative analysis. The DEIR indicates that the nominal increases in transportation of hazardous materials would produce environmental impacts similar to current operations (impact PSHM.2). The role of the EIR under CEQA is to examine the impacts of the proposed project, not of the current baseline operations.
GFD-6	Section 4.3.1.4 lists potential receptors and includes residences along routes to and from Highway 101 and 166. These routes would include Guadalupe, Santa Maria, Nipomo, Oceano, Arroyo Grande as well as unincorporated sections of Santa Barbara and San Luis Obispo Counties.
GFD-7	The truck routes would pass through a number of different communities. No specific attention was given to Guadalupe over other communities. However, noise impacts along area roadways, which include areas within or near to Guadalupe, are listed in Table 4.3-3. Impacts N.2 indicates that noise levels due to increased traffic would increase by less than 0.1 dBA CNEL and is a less than significant impact.
GFD-8	The movement of trucks through Guadalupe as part of the existing refinery operations is discussed as a matter of baseline in the EIR. The proposed project is the potential increase in refinery throughput by 10%, which would result in up to 4 additional truck trips per day leaving the refinery. As per CEQA guidelines, the EIR examines the potential impacts of the proposed project, not the current baseline

Comment #	Response
	operations. Noise levels along highways are estimated using models of traffic flow. Noise measurements were taken near the refinery in order to estimate refinery noise levels.
GFD-9	In describing the three proposed transportation routes (Section 4.6.1.3), it is sufficient to keep the description to the roadways included in the various routes and unnecessary to describe the surrounding areas as the traffic analysis inherently includes traffic generated from these areas.
GFD-10	Although Table 4.6-3 does not specifically address the traffic volumes for roadways in the City of Guadalupe listed in your comment (11th St., Olivera St., Obispo St., and Flower St.), nearby roadway volumes, such as Guadalupe North City Limits, and State Route 1 at State Route 166 East, are identified with each having an LOS of A. This suggests that traffic volumes between these two segments are similar and would not generate an unacceptable LOS. Note that the Final EIR has been updated to include intersections within the town of Guadalupe.
GFD-11	The intersection of Highway 1/166 has been added to the FEIR. As the routes pass through a number of different communities, only the major intersections were included. The DEIR assesses the impacts of truck traffic through the use of previous traffic assessments on 26 different roadway segments and 19 different intersections in the project area. Two of these are located within Guadalupe.
GFD-12	The alternative eastbound route would be the same as the current southbound route and would allow for avoiding potentially impacted intersections within Nipomo. The southern route was assessed in section 4.6 for the fully proposed project traffic increase. Note that the eastbound route alternative was eliminated from further consideration.
GFD-13	Section 5.8.3 discusses an alternative route southbound which would avoid potential impacts to the City of Santa Maria. This route would continue to pass through the town of Guadalupe and impacts would be similar to those described for the proposed project in section 4.6. Text to this extent has been added to the FEIR. Section 6.1 discusses impacts from the southbound route alternative.
GFD-14	The town of Guadalupe has been added to maps Figure 5-3 and 5-4 in the FEIR.
GFD-15	Additional text has been added to the FEIR in regards to the impacts along the already assessed intersections and roadway segments along the proposed Project southbound route.
GFD-16	Additional text has been added to the FEIR section 6.1.3.6 in regards to the impacts along the already assessed intersections and roadway segments along the proposed Project southbound route.
GFD-17	The DEIR does not identify any potential impacts to the City of Guadalupe in regards to the increase in traffic associated with the refinery increase in throughput

Comment #	Response
	project.
GFD-18	The DEIR and FEIR do not identify any potential impacts to the City of Guadalupe in regards to Public Safety and Hazardous Materials associated with the refinery increase in throughput project.
GFD-19	The DEIR and FEIR do not identify any potential impacts to the City of Guadalupe in regards to Noise associated with the refinery increase in throughput project.
GFD-20	The DEIR and FEIR do not identify any potential impacts to the City of Guadalupe in regards to Public Services associated with the refinery increase in throughput project.
GFD-21	The DEIR and FEIR do not identify any potential impacts to the City of Guadalupe in regards to the increase in traffic associated with the refinery increase in throughput project.
GFD-22	The FEIR includes an analysis of the impacts on the City of Guadalupe as well as other communities along transportation routes through traffic and health risk analysis. Additional intersections have been added to the traffic analysis in the City of Guadalupe.
SBC-1	The Applicant has revised the project description to remove the proposed importation of gas oil and semi-refined products through the SMPS (letter to SLOCAPCD dated April 19, 2012). However, additional information on the SMPS, including pipeline capacities and APCD permit limits, have been added to the project description. According to various communications with Santa Barbara County staff, the County no longer has a permit to issue for the proposed Project as revised and as such, is not a Responsible Agency for this project.
SBC-2	The Applicant has revised the project description to remove the proposed importation of gas oil and semi-refined products to the SMPS. However, additional information on the SMPS, including pipeline capacities and APCD permit limits, have been added to the project description. Potential oil and gas projects within Santa Barbara County have been added to the cumulative projects list and discussed in the relevant impact sections.
SBC-3	The Applicant has revised the project description to remove the proposed importation of gas oil and semi-refined products to the SMPS. However, additional information on the SMPS, including pipeline capacities and APCD permit limits, have been added to the project description. Therefore, additional permitting or modification of existing permits processed through Santa Barbara County are not required as part of the proposed Project.
SBC-4	Section 3.0 Cumulative Projects Description has been updated to include Santa Barbara County oil projects. Issue areas have been updated as appropriate if cumulative impacts are envisioned.

Comment #	Response
SBC-5	The Applicant has revised the project description to remove the proposed importation of gas oil and semi-refined products to the SMPS. However, additional information on the SMPS, including pipeline capacities and APCD permit limits, have been added to the project description. Potential oil and gas projects within Santa Barbara County have been added to the cumulative projects list and discussed in the relevant impact sections.
SBC-6	Section 4.5 Land Use and Policy Consistency Analysis has been updated to address consistency with Santa Barbara County policies.
SBC-7	The DEIR and FEIR do not identify any potential significant impacts to the SMPS in regards to the increase in traffic associated with the refinery increase in throughput project. The existing pipeline system that is serviced by the SMPS has sufficient capacity to accommodate others oil producers; however, ConocoPhillips has the prerogative to purchase crude oil from suppliers depending on market forces. As mentioned above, no gas/oil will be imported as part of the revised project.

Conoco Phillips Development Plan
Ken Chaubet
to:
aarlingenet
10/22/2011 05:47 PM
Hide Details
From: Ken Chaubet <kennviv@hotmail.com>

To: <aarlingenet@co.slo.ca.us>

ChaubetK-1

I live about 1 mile from this facility what effect will the increase in production have on the quality of air I breath, I currently have heart disease, and chronic lymphocytic lukemia my immune system is comprised. I am really concerned as the wind currents always cross my house, why are you giving permission to allow Conoco Philips to increase production it is obviously not good for the air quality, is there an incentive for SLO? My email address is kennviv@hotmail.com I await your response.

Thank You

Ken Chaubet

TO: AIR POLLUTION CONTROL DISTRICT 10-28-11

FROM: MICHAEL + DEBRA ELLIOTT
620 MONADELLA ST.
ARROYO GRANDE, CA

RE: CONOCO PHILLIPS

TO WHOM IT MAY CONCERN -

ElliottMD-1 WE ARE 100% OPPOSED TO THE PROPOSED INCREASE IN THE VOLUME OF PROCESSED CRUDE OIL AND TO THE ABILITY TO PROCESS PREVIOUSLY REFINED GAS/OIL PETROLEUM LIQUID.

WE DO NOT NEED MORE POLLUTION IN OUR AREA OR ON GOD'S GREAT EARTH. AND MORE POLLUTION IS WHAT WE ALL WILL GET IF THIS GOES THROUGH.

ElliottMD-2 THOSE OF US LIVING ON THE MESA ALREADY HAVE TO DEAL WITH THE PARTICULATE MATTER FROM THE OCEANO DUNES. WHY IN THE WORLD WOULD YOU ALLOW THAT EXISTING HEALTH PROBLEM TO BE EXACERBATED BY ALLOWING CONOCO PHILLIPS TO POLLUTE EVEN MORE THAN THEY DO ALREADY?

WE ARE NOT ENVIRONMENTALISTS... SIMPLY CITIZENS WHO WANT TO LIVE AS LONG AS WE CAN AND BREATHE QUALITY AIR. PLEASE DO NOT FURTHER TAINT OUR SKIES AND ATMOSPHERE WITH MORE TOXIC PLUMES OF EMISSIONS FROM CONOCO PHILLIPS!

RESPECTFULLY,

Michael + Debra Elliott

From: "Claire Granbery" <cgranbery@cox.net>

To: <mwilson@co.slo.ca.us>, <aarlingent@co.slo.ca.us>

Date: 11/01/2011 11:59 AM

Subject: Conoco Phillips Development Plan

TO: Aeron Arlin Genet
Murry Wilson
SLO County Air Pollution Control District

Dear Sirs,

Thank you for your letter and the opportunity to comment on the Conoco Philips expansion.

I live in the Trilogy/Monarch Dunes Development on the Nipomo Mesa within very close proximity to the Conoco Phillips Plant. Since I have COPD (Chronic Bronchitis) I am already very concerned about air quality due to the sand particles from the Ocean Dunes carried into the Nipomo Mesa by the ocean breezes. GranberyP-1

Now Conoco Phillips wants to expand their plant. My wife and I sit in our backyard and smell sulfur and other chemical odors from the plant. We drive by the plant on Highway 1 and see thick billows of black/gray smoke being emitted from this plant which the ocean wind brings directly to Nipomo Mesa where we live. Needless to say, we strongly oppose an expansion that would just make this odor/chemical/smoke problem and related health issues worse than it already is. GranberyP-2

In fact, I question why this plant is allowed to stay in a location which compromises peoples' health, causes possible chemical, air and ground water contamination in addition to being an eye sore in a beautiful coastal area. GranberyP-3

Sincerely,

Paul Granbery

Paul Granbery
1823 Nathan Way
Nipomo, CA 93444

602-799-4262

[Scanned @co.slo.ca.us]

October 27th, 2011

Aeron Arlin Genet, Planning and Outreach Manager
Air Pollution Control District
3433 Roberto Court
San Luis Obispo, CA 93401

From: Paul Lee
730 Calle Bendita
Arroyo Grande, CA 93420

To Conoco-Phillips, SLO County Air Pollution Control District

I am a 2.5 year resident of the southwestern portion of the Nipomo Mesa, approximately three-quarters of a mile east of the Santa Maria Oil Refinery. I was raised in Santa Maria when the facility was operated by Unocal 76.

As a neighbor, I have received your letters in the mail advising us on your plans to increase production by 10%. I have attended your meetings at our nearby Cypress Ridge Golf Club to hear you lecture and present your plans for expansion. As a busy local business owner, I have spoken little. Until now.

9 months after moving here my dog was diagnosed with Grade III Multi-centric B-type Lymphoma. Terminal cancer, in short. She is now undergoing chemotherapy. Since living here I have also had some troublesome nose and respiratory ailments. My adult-onset asthma, controlled without medication for 18 years, has returned. At times I am using my rescue bronchial-dilator inhaler every day and night. More disturbing, I have developed recurring open sores in my nasal passages. I have constant bilateral inner-nose irritation which transcends ordinary congestion or allergies. This cycle leaves me with a recurring bloody and oozing crust lining the inside of my nostrils.

Lee P-1 My interpretation of the DEIR Summary of Mitigation Measures (Table 8-1, DEIR) indicates your measures are insufficient to offset the 10% throughput volume. Installation of low NOx burners, compliance with ordinary truck emission requirements, and an Odor Control Plan neglects the possible contributory pollutants of ozone, carbon monoxide, sulfur dioxide, sulfates, and PM 10 and PM 2.5 from the Refinery's emissions. I also would like

Lee P-2 explanation of why no Air Quality mitigation measures are required for potential increased operations at the refinery for air-borne toxic materials (Table 8-1)

Lee P-3 Incidentally, I have observed that the effluent of your stacks appears to be both more voluminous and noisy during nighttime hours as compared to daytime. In no part of the DEIR could I find information as to the diurnal operations of the Refinery.

I acknowledge that I live in a windy region built upon sand. I acknowledge there is ongoing controversy as to the contribution of pollutants from Off-Road Vehicles from the Oceano/Nipomo Dunes and local Agricultural production. I acknowledge that the Central Coast is high in naturally-occuring allergens. Yet the correlation with my family's decline in health since moving to a location directly down-wind of your Refinery is suspicious. We have already decided to relocate should your Expansion be approved.

Lee P-4 In conclusion, I hereby tender my strongest objection to the throughput increase of the Conoco-Phillips Refinery, and recommend Option 11A, No Project, in considering Project alternatives (June 8, 2010 DEIR, p. B-14).

Sincerely,

Paul D. Lee, M.S.
Arroyo Grande, CA

We live at 1807 Tag Ct. in Monarch Dunes. We have read the draft EIR for the Conoco Phillips Development Plan.

TowneMS-1

The Nipomo Mesa is already severely compromised in relation to Air Quality. Any increase in emissions from the refinery is unacceptable. There are already daily odors from operations there, and occaisionally, when the wind is near still, high concentrations of odors in the Monarch Dunes area.

Conoco Phillips can clearly do a better job than they are at present to eliminate these odors, so in my opinion the applicant's permit should be denied.

TowneMS-2

Additionally, they should be required to install a full monitoring station near the Monarch Dunes housing development to ensure that no toxic pollutants are affecting the residents. The current full monitoring station at Nipomo Regional Park is not sufficient to measure the toxic impacts to both Monarch Dunes and Black Lake housing developments.

If the project is allowed to proceed this new full monitoring station must be a required mitigation, with appropriate fines and penalties for violation.

Sincerely,

Milton and Susan Towne

1807 Tag Ct.

Nipomo, CA

Conoco Phillips Development Plan/Coastal Development Permit
Mona Tucker
to:
aarlingenet
10/14/2011 05:11 PM
Hide Details
From: Mona Tucker <olivas.mona@gmail.com>

To: aarlingenet@co.slo.ca.us

Dear Mr. Wilson

I'm in receipt of your letter dated August 29, 2011 and I have the following comments:

I would object to any action that would increase air pollution. There is already a debate concerning particulates from the dunes and until that is resolved no further air polluting activities should be considered. There needs to be careful consideration given to the quality of the air. TuckerM-1

Also, if this increase in the permitted volume of processed crude also causes an increase in traffic, it should not be approved. I live close to the intersection of Hwy 1 and Halcyon Road and any increased traffic traveling on the steep portions of Hwy 1, or Halcyon Road is a threat to safety of all travelers. TuckerM-2

Thank you,

Mona Tucker
660 Camino Del Rey
Arroyo Grande, CA 93420

ConocoPhillips Santa Maria Refinery
Throughput Increase Project
Environmental Impact Report
Public Draft Comments and Responses- Individuals

Comment #	Response
ChaubetK-1	The DEIR indicates that, for criteria pollutant emissions, offsite emission reductions shall be secured by the Applicant to offset the amount of emissions exceeding APCD's thresholds and reduce the Project emissions to a level of less than significant with mitigation, meaning that the increase would not be expected to produce impacts in the community as per the APCD thresholds (see impact AQ.1). In addition, emissions of toxic pollutants would increase, but would not produce impacts beyond the APCD thresholds and would therefore not be considered significant (see impact AQ.4).

Comment #	Response
ElliottMD-1	Comment in opposition of the proposed Project is acknowledged. No specific comment is provided on the Draft EIR and no additional response is provided.
ElliottMD-2	The DEIR indicates that, for criteria pollutant emissions, offsite emission reductions shall be secured by the Applicant to offset the amount of emissions exceeding APCD's thresholds and reduce the Project emissions to a level of less than significant with mitigation, meaning that the increase would not be expected to produce impacts in the community as per the APCD thresholds (see impact AQ.1). In addition, emissions of toxic pollutants would increase, but would not produce impacts beyond the APCD thresholds and would therefore not be considered significant (see impact AQ.4).

Comment #	Response
GranberyP-1	The DEIR indicates that, for criteria pollutant emissions, offsite emission reductions shall be secured by the Applicant to offset the amount of emissions exceeding APCD's thresholds and reduce the Project emissions to a level of less than significant with mitigation, meaning that the increase would not be expected to produce impacts in the community as per the APCD thresholds (see impact AQ.1). In addition, emissions of toxic pollutants would increase, but would not produce impacts beyond the APCD thresholds and would therefore not be considered significant (see impact AQ.4). Emissions of particulate matter would increase, but would be below the APCD thresholds also.
GranberyP-2	Odors are addressed in the EIR impact AQ.2. Increased operations at the facility would potentially increase odors. Mitigation measures have been proposed, which would require the refinery to more aggressively monitor and reduce odor emissions, thereby offsetting any potential increase in odor emissions. Note that the proposed project would not include any "expansion" of the refinery, but would allow the refinery to process additional crude oil.
GranberyP-3	The refinery has been located on the mesa since 1955, pre-dating much of the development in the area. Permitting and land use procedures require that the facilities be allowed to continue operations.

Comment #	Response
LeeP-1	Ozone is not produced and emitted by the refinery, but is produced from the interaction of emissions of NOx and ROC from the refinery. Both of these pollutants are addressed in section 4.1. Carbon monoxide (CO) is emitted from the facility, but not in levels that could produce "hot spots" in the area. The APCD, as well, does not have thresholds for the emissions of CO and these are therefore not addressed in the EIR. Emissions of particulate and sulfur dioxide are both quantified and addressed in section 4.1. Mitigation measures, requiring measures at the refinery (such as cleaner burners) as well as measures offsite, would reduce the emissions to below the APCD thresholds and therefore would mitigation any potential emissions increases.
LeeP-2	Toxic impacts are driven by the use of diesel engines at the refinery. The refinery has reduced their use of these engines so that the impacts of the refinery operations are below the APCD thresholds for toxic impacts. Even with the increase in throughout and processing, toxic impacts would still be less than significant.
LeeP-3	Both daytime and nighttime noise monitoring was conducted in the vicinity of the refinery. Please see section 4.3. No increases in noise levels would be anticipated with the proposed refinery throughout increases. Current refinery operations are considered to be baseline under CEQA.
LeeP-4	Comment in opposition of the proposed Project is acknowledged.

Comment #	Response
TowneMS-1	Odors are addressed in the EIR impact AQ.2. Increased operations at the facility would potentially increase odors. Mitigation measures have been proposed which would require the refinery to more aggressively monitor and reduce odor emissions, thereby offsetting any potential increase in odor emissions. Note that the proposed project would not include any "expansion" of the refinery, but would allow the refinery to process additional crude oil.
TowneMS-2	The health risk assessment conducted on the refinery, and discussed in the EIR section 4.1, indicates that the risks due to toxic emissions are acceptable at the refinery fence line and is acceptable at the Monarch Dunes development. Monitoring of ambient toxic emissions is periodically performed by the CARB. However, none of the monitoring stations monitor for toxic pollutants, only criteria pollutants in the area.

Comment #	Response
TuckerM-1	The DEIR indicates that, for criteria pollutant emissions, offsite emission reductions shall be secured by the Applicant to offset the amount of emissions exceeding APCD's thresholds and reduce the Project emissions to a level of less than significant with mitigation, meaning that the increase would not be expected to produce impacts in the community as per the APCD thresholds (see impact AQ.1). In addition, emissions of toxic pollutants would increase, but would not produce impacts beyond the APCD thresholds and would therefore not be considered significant (see impact AQ.4).
TuckerM-2	As stated in Section 4.6.4, additional traffic would be generated as a result of the throughput increase operations; however, the number of additional trucks needed to transport produced coke and sulfur would be a nominal four trucks per day. This traffic level increase would not contribute to a change in LOS or contribute to a substantial change in traffic load. Regarding traffic safety on the Northbound Route, as stated in Section 4.6.1.3, State Route 1 intersects twice with S. Halcyon Road. The southern segment of S. Halcyon Drive that is south of Arroyo Grande Creek prohibits truck traffic due to a significant grade up to the Nipomo Mesa. Further, as stated in Section 4.2.4, under the Impact PSHM.2 discussion, risk levels associated with transportation would be minimal due to the properties of crude oil, sulfur, and coke, and therefore, less than significant.

EXHIBIT 1

ConocoPhillips Comments to the Draft EIR

REDLINES

ConocoPhillips Santa Maria Refinery Throughput Increase Project

Public Draft Environmental Impact Report

Prepared By:
mrs
Marine Research Specialists

August 2011
SCH #20081010111
ED10-248
DRC 2008-00146

Prepared For:
County of San Luis Obispo
Air Pollution Control District
&
San Luis Obispo County
Department of Planning and Building

ConocoPhillips Santa Maria Refinery
Throughput Increase Project

Public Draft Environmental Impact Report

August 2011

SCH #20081010111, ED10-248, DRC 2008-00146

ConocoPhillips Comments to the Draft EIR

EXHIBIT 1

REDLINES

TABLE OF CONTENTS

NOTE:

There were no redlines for Section 4.8, Section 9, and Section 10, so they were not included in this binder.

EXECUTIVE SUMMARY

PROJECT OBJECTIVES, PURPOSE, AND NEED

The San Luis Obispo [1] Air Pollution Control District (APCD) and San Luis Obispo County Planning and Building Department (County) will serve as the lead agency and use the Environmental Impact Report (EIR) document as part of their decision-making process in permitting the Proposed Project.

The APCD and the County have determined that the Proposed Project needs environmental review in the form of an EIR pursuant to the California Environmental Quality Act (CEQA) instead of a categorical or statutory exemption, or a Negative Declaration. Under CEQA, "The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify alternatives to the Proposed Project, and to indicate the manner in which those significant effects can be mitigated or avoided" (PRC Section 21002.1[a]).

An EIR is the most comprehensive form of environmental documentation identified in CEQA and the CEQA Guidelines and provides the information needed to assess the environmental consequences of a Proposed Project. An EIR is intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a Proposed Project that has the potential to result in significant, adverse environmental impacts.

Pursuant to Section 15124(b) of the CEQA Guidelines, the description of the Proposed Project is to contain "a clearly written statement of objectives" that will aid the lead agency in developing a reasonable range of alternatives to evaluate in the EIR and will aid decision makers in preparing findings and, if necessary, a statement of overriding considerations. Project objectives should include the underlying purpose of the Project.

The applicant's overall goal for the Project is to increase the daily maximum limit of crude oil throughput by 10 percent and process petroleum liquid under the definition of crude oil. This would be achieved through the following objectives:

- Operate the Santa Maria Refinery in accordance with all prevailing laws and regulations to maximize safety and protect the environment.
- Employ current technologies in an effort to reduce environmental impacts to less-than-significant levels.
- Provide a development project that is consistent with the major objectives of the County's General Plan.
- Provide a development project that continues to meet the regulatory requirements and objectives of the San Luis Obispo County APCD.
- Provide a development project that meets the regulatory requirements and objectives of the Regional Water Control Board and continues to comply with the existing National Pollutant Discharge Elimination System permit.
- Continue the process of removing contaminated materials from the Project site to a

designated disposal facility where they can be contained and controlled.

- Protect human and ecological receptors from exposure to potentially harmful substances.
- Minimize noise impacts to surrounding areas.
- Minimize traffic impacts to surrounding areas.

As the Lead Agency under CEQA, the APCD and the County are required to adopt a program for reporting and monitoring the implementation of mitigation measures for this Project, if it is approved, to ensure that the adopted mitigation measures are implemented as defined in this EIR.

BACKGROUND AND DESCRIPTION OF PROPOSED PROJECT

The ConocoPhillips Santa Maria Facility (SMF) was built on the Arroyo Grande mesa in southern San Luis Obispo County (SLOC) in 1955 (see Figure ES-1). The facility is surrounded by industrial, recreational, agricultural, and residential land and open space. The SMF operates 24 hours per day and 365 days per year, except when shut down for maintenance.

The SMF was previously owned by several companies, including Union Oil Company of California, Tosco, and Phillips Petroleum. Since 1955, the land use has been petroleum oil refining.

The SMF and the Rodeo Refinery, linked by a 200-mile pipeline, comprise the San Francisco Refinery (see Figure 2-2). The SMF mainly processes heavy, high-sulfur crude oil. Semi-refined liquid products from the SMF are sent by pipeline to the Rodeo Refinery for upgrading into finished petroleum products. Products leaving the SMF are: (1) semi-refined petroleum by pipeline; (2) solid petroleum coke by rail or haul truck; and (3) recovered sulfur by haul truck.

Figure ES-1 Proposed Project Location

The two changes included in this Proposed Project are:

- Increasing the permitted volume of processed crude oil; and
- The ability to process previously refined gas/oil petroleum liquid under the definition of crude oil.

The first change, for the County Planning and Building permit, would increase the daily maximum limit of crude oil throughput by 10 percent, from 44,500 bpd to 48,950 bpd. Additionally, for the APCD permit, the 12-month rolling average of crude throughput would increase from 16,220,600 bpy to 17,866,750 bpy. While the County's permit is based on a daily maximum and the APCD's permit is based on twelve-month rolling average, these volume limits are the same.

The Proposed Project would potentially cause changes at the SMF, including:

- An increase ~~in materials and~~ in volumes of crude oil delivered to and shipped via pipeline from the Santa Maria Pump Station to the SMF;
- An increased volume of products leaving the SMF for the Rodeo Refinery via pipeline;
- An increased volume of green coke and sulfur production; and
- An increase in shipments leaving the facility by either truck or railcar.

The Proposed Project would not involve any construction or additions to the SMF plot plan.

The current Department of Planning and Building permit limit of 44,500 bpd was evaluated in a CEQA document in a negative declaration in 1990. Therefore, all operations at the Refinery under the current Department of Planning and Building permit limit of 44,500 bpd would be covered by a CEQA analysis and the permit level of 44,500 bpd is considered the baseline for this analysis.

PROPOSED PROJECT ENVIRONMENTAL IMPACTS AND MITIGATION

The Proposed Project would generate environmental impacts in air quality, noise, land use, and water resources as reviewed below.

Air Quality

Significant and unavoidable impacts to air quality would occur during operational activities at the refinery and offsite because the Project would generate emissions that would increase greenhouse gases (GHG) emissions and exceed the SLOC APCD thresholds. Although mitigation measures would not reduce the impacts to a less than significant level, the operator would implement programs to reduce resulting GHG emissions below the SLOCAPCD interim thresholds of 10,000 metric tonnes over permitted GHG emissions.

Public Safety and Hazardous Materials

There are no significant and unavoidable impacts to public safety and hazardous materials. Extensive groundwater monitoring, over the last 20 years record little impact to groundwater

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Comment [F1]: Please see cover letter dated Oct. 31, 2011 for comments on this section concerning Odor Events. 6

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Comment [e2]: Refinery stationary sources can not be limited to reduce GHG emissions. However, Cap and Trade will achieve the reductions. See comments in cover letter dated Oct. 31, 2011. 12

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Deleted: Impacts to air quality that are less than significant with mitigation would occur during operational activities. Operational activities at the Project Site would not change. The project would not result in an increase in 14

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Deleted: odor events as the are numerous odor minimizing programs currently in pe at the siteThe project would also not result in any increase in emission of 16

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Deleted: Mitigation measures for these impacts include ensuring operator 19

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Deleted: An impact to Public Safety and Hazardous Materials that is less than significant with mitigation was identified as a result of existing low levels of groundwater contamination 24

from industrial activity. The increase in crude throughput is not expected to result in any additional groundwater contamination. Potential impacts to public safety and hazardous materials that are less than significant include risk to the public associated with accidental releases of hazardous materials from the SMF processing operations and transportation vehicles. The numerous and extensive spill prevention and hazardous material control programs in place at the site demonstrate a history of minimal crude oil spills. No mitigation measures are required for such impacts.

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Comment [F3]: Please see cover letter dated Oct. 31, 2011 for comments on Ground water situation.

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Noise and Vibration

There are no significant and unavoidable impacts to noise and vibration. An alleged impact to noise and vibration that is less than significant with mitigation includes measured noise levels at the Santa Margarita Pump Station, located 60 miles to the north of the site. The pumps at this station operate at full design capacity 24 hours per day. Any increase in noise from the station would likely be due to equipment malfunctions. Mitigation for this impact includes installing a sound wall between the noise sources and residences as close to the pumping operations as feasible to ensure that noise levels at the receptors' property line continue to remain lower than the County Ordnance of 50 dBA at the fenceline of the receptor. Additional barrier walls shall be installed as deemed necessary by in-field measurements.

ConocoPhillips voluntarily installed a sound wall at this station after public comments on this project advised the company of a potential nuisance. Measurements indicate the station is currently in compliance with applicable standards.

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Public Services

There are no significant and unavoidable impacts to public services or impacts that are less than significant with mitigation. Impacts to public services that are less than significant include a decrease in the use of electricity, no change in waste water while solid waste generation should not be affected by the project. No mitigation measures are required for these impacts.

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Land Use and Policy Consistency Analysis

There are no significant and unavoidable impacts to land use and policy consistency analysis. Impacts to land use and policy consistency analysis that are less than significant with mitigation are emissions. There will be no increase in operational noise or odors due to this project. Mitigation measures for the emission impacts are found in concerning air quality.

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Transportation and Circulation

There are no significant and unavoidable impacts to transportation and circulation or impacts that are less than significant only with mitigation. Impacts to transportation and circulation that are less than significant include an increase of traffic on local roads and the freeway. No mitigation measures are required for this impact.

Water Resources

There are no significant and unavoidable impacts to water resources. An impact to water resources that is less than significant with mitigation includes an impact to the current and future availability of groundwater. This, however, is clearly addressed in the Nipomo Mesa Groundwater use agreement, under a 2005 court settlement order.

Comment [F4]: Please see comments in cover letter dated Oct. 31, 2011 specific to this topic 1

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ALTERNATIVES TO THE PROPOSED PROJECT

A wide range of alternatives was considered for evaluation in this EIR (see Section 5.0, Alternatives Analysis). Those alternatives were screened based on feasibility and their ability to result in fewer environmental impacts than the Proposed Project. From this screening, a list of alternatives was selected to be compared to the Proposed Project. Section 6.0, Comparison of Proposed Project and Alternatives, evaluated the impacts associated with the selected alternatives, which are summarized in the following sections.

Seven alternatives were evaluated in the screening analysis, including:

- No Project Alternative;
- Reduced Refinery Throughput Increase;
- Increased Rail Transport;
- Santa Maria Refinery Truck Unloading;
- Summit Pump Station Truck Unloading;
- Orcutt Pump Station Truck Unloading; and
- Alternative Transportation Routes.

Only three alternatives were analyzed fully, which included the No Project Alternative, the Summit Pump Station Truck Unloading, and one alternative transportation route.

No Project Alternative

With the No Project Alternative, the throughput increase and the importing of previously refined oil would not occur at the Santa Maria Refinery. Under the No Project Alternative, no new activity would take place at the Santa Maria Refinery.

Summit Pump Station Truck Unloading

Under this alternative, the majority of the 10 percent increase in crude oil needed for the throughput increase would come from the Arroyo Grande and San Ardo Oil Fields north of the Refinery. The crude oil would be unloaded by truck at the Summit Pump Station rather than at the Santa Maria Pump Station. Crude oil unloaded at the Summit Pump Station would then be transferred via pipeline to the Santa Maria Refinery.

Southbound Route Alternative

Under this alternative, southbound US Highway 101 would be accessed via Orcutt as opposed to Santa Maria under the Proposed Project.

COMPARISON OF PROPOSED PROJECT AND ALTERNATIVES

The CEQA Guidelines (Section 15126.6 [d]) require that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project. The Guidelines (Section 15126.6 [e][2]) further state, in part, that "if the environmentally superior alternative is the 'No Project Alternative,' the EIR shall also identify an environmentally superior alternative among the other alternatives."

The following discussion compares impacts associated with the Proposed Project with those associated with the No Project Alternative and the other alternatives. These impacts are identified as a result of the analysis provided in Chapter 4.0, Environmental Analysis, and Section 6.0. An alternative would be considered superior to the Proposed Project if there would be a reduction in impact classification. In cases where the impact from an alternative is in the same class as for the Proposed Project, differences in severity of the impact are analyzed.

No Project Alternative

With the No Project Alternative, the throughput increase and the importing of previously refined oil would not occur at the Santa Maria Refinery. Under the No Project Alternative, no new activity would take place at the Santa Maria Refinery. None of the impacts associated with the Proposed Project would occur. No new impacts would occur under the No Project Alternative.

Require ConocoPhillips to Build a New[1] Summit Pump Station Truck Unloading Facility

The Summit Pump Station Truck Unloading alternative has advantages over the Proposed Project because it would reduce air emissions from trucks transporting crude oil from northern oil fields, such as Arroyo Grande and San Ardo. The Summit Pump Station is farther north than the Santa Maria Pump Station and, therefore, the distance from these northern fields to the Summit Pump Station is less than the distance to the Santa Maria Pump Station. The impact to air emissions would be marginally less within the county. Since Arroyo Grande and San Ardo are existing fields, the ability to transport that crude to either of these sites would be beneficial to emissions reductions in both cases. If the project did not go through, the crude would be transported by truck or rail across the entire county to other refiners.[4]

In addition, in the future a[5] potential crude supply exists[7] from the proposed Excelaron project in Huasna Valley. This crude might be transported through the Santa Maria Pump Station en route to the Santa Maria Refinery, at a significant savings in emissions (compared to trucking to Bakersfield or Mojave).[10]

The disadvantages of this alternative over the Proposed Project include increased activities and trips as well as potential[11] odor issues at the Summit Pump Station for[12] residences in the vicinity. There would also be an increased risk of crude oil fires at the Summit Pump Station that could

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impact nearby vegetation and residences. This would be a significant impact. Noise impacts at the Summit Pump Station and surrounding residences would be more severe since truck trips and subsequent unloading would generate vehicle-related noise.

Southbound Route Alternative

The Southbound Route Alternative has advantages over the Proposed Project because it would reduce air emissions from trucks transporting solid petroleum coke and solidified recovered sulfur from the SMF southbound to customers outside of San Luis Obispo County by avoiding traffic congestion along Main Street in Santa Maria. However, since the route is a similar distance, impacts to air quality would be similar.

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This alternative does not have any significant disadvantages over the Proposed Project.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The Proposed Project has been specifically designed to reduce the number of impacts to the lowest level possible and still obtain the objectives of the Project. The alternatives include an alternative site for truck unloading and an alternative southbound access route that could provide reduce impacts, although not significantly.

The No Project Alternative would be the environmentally superior alternative since it would not generate any impacts. However, the No Project Alternative would not meet any of the objectives of the Proposed Project. CEQA requires that if the environmentally superior alternative is the No Project Alternative, then the next most environmentally preferred alternative must also be identified.

The construction of a Summit Pump Station Truck Unloading Alternative has the advantages of reducing air emissions, but air emissions would remain significant. The disadvantages would include impacts on nearby residences including operational activities including noise, localized emissions and increased traffic. Installation would require emission mitigation to control vapors from offloading and storage systems required at the new truck unloading facility. None of these impacts would be significant after mitigation. These disadvantages outweigh the benefits of reduced air emissions. Therefore, this alternative has not been selected as the environmentally superior alternative.

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The Southbound Route Alternative has the advantage over the Highway 166 route for southbound traffic since the alternative would avoid a partially impacted intersection within Santa Maria. The Applicant could specify their preferences for this route in contracts with trucking companies and contractors.

Therefore, the Proposed Project with use of the Southbound Route Alternative is the Environmentally Preferred Alternative.

KNOWN AREAS OF CONTROVERSY OR UNRESOLVED ISSUES

According to Section 15123 of the CEQA Guidelines, the EIR shall identify "*areas of*

controversy known to the Lead Agency including issues raised by agencies and the public." All proposals related to the development and transportation of oil and gas reserves in urban areas generate controversy and receive a high level of public scrutiny. This is due to the sensitive nature of the surrounding area and the potential for safety impacts to the local population.

The Proposed Project has generated some level of public interest and controversy (see Appendix B, Notice of Preparation, Comments, and Responses). Areas of controversy highlighted in comments on the Notice of Preparation include:

- The level of traffic generated by the Project that could impact residential areas; and
- Noise, odor, and air quality issues from operational activities proximate to residential areas.

Table ES-1 Summary of Impacts and Mitigation Measures for the Proposed Project

Less Than Significant With Mitigation Impacts

Impacts That Can Be Mitigated To Less Than Significant Levels

(Impacts that must be addressed in Findings that the mitigation measures would reduce the level of impact to insignificant in accordance with Section 15091 State CEQA Guidelines.)

Impact #	Impact	Recommended Mitigation Measures
		4.1 Air Quality
AQ.1	Operational activities at the refinery and offsite would generate emissions that exceed SLOC APCD interim CEQA (?specify, please?) thresholds.	AQ-1.1. Prior to issuance of the updated permit and increase in Refinery throughput, the Applicant shall apply BACT for the crude heaters, coker heaters and B504/506 boilers or utilize an equivalent method, to reduce the NOx emissions to less than the APCD thresholds. AQ-1.2. To the extent feasible, all trucks under contract to the SMF shall meet EPA 2010 or 2007 model year NOx and PM emission requirements and a preference for the use of rail over trucks for the transportation of coke shall be implemented to the extent feasible in order to reduce offsite emissions. Annual truck trips associated with refinery operations and their associated model year and emissions shall be submitted to the APCD annually. AQ-1.3. Prior to issuance of the updated permit, if emissions cannot be mitigated below significance thresholds through implementation of mitigation measures AQ-1.1 and AQ-1.2, then off-site mitigation will be required as per APCD guidance in the CEQA Handbook.
AQ.2	Operational activities could increase the frequency or duration of odor events.	AQ-2 The Applicant shall prepare and submit an Odor Control Plan, which shall be approved by the APCD prior to the issuance of a revised permit. The Odor Control Plan shall identify all potential sources of odors at the Refinery. The plan shall detail how odors will be controlled at each odor source and the mechanism in place in the event of an upset or breakdown, as well as design methods to reduce odors, including redundancy of equipment (e.g., pumps and VRU compressors) or reductions in fuel gas sulfur content. Area monitoring shall be discussed. The Plan shall also include a complaint monitoring and reporting section and include a hotline number for individuals to call in case of a complaint.
AQ.3	Operational activities could increase GHG emissions.	AQ-3 The Applicant shall implement a program to increase efficiency of the Refinery stationary combustion devices to maintain GHG emissions less than the APCD interim thresholds (10,000 metric tonnes per year) over the emissions associated with the current permitted throughput. In addition to increasing stationary equipment efficiency, additional measures may include the use of more efficient model year trucks or alternative fueled vehicles for hauling vehicles. If after all applicable measures have been implemented, emissions are still over the thresholds, then offsite mitigation will be required. The off-site mitigation measures shall be approved by the APCD prior to permit issuance.

Comment [F5]: For all yellow highlighted sections, please see COP Comment Letter; and correct these sections as supported by facts. 1

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Table ES-1 Summary of Impacts and Mitigation Measures for the Proposed Project

Less Than Significant With Mitigation Impacts

Impacts That Can Be Mitigated To Less Than Significant Levels

(Impacts that must be addressed in Findings that the mitigation measures would reduce the level of impact to insignificant in accordance with Section 15091 State CEQA Guidelines.)

Comment [F5]: For all yellow highlighted sections, please see COP Comment Letter; and correct these sections as supported by facts. 1

Impact #	Impact	Recommended Mitigation Measures
	4.2 Public Safety and Hazardous Materials	
PSHM.3	The Proposed Project could introduce contamination to groundwater through exacerbation of existing contamination issues	PSHM-3 Prior to issuance of the updated permit and increase in Refinery throughput, the Applicant shall ensure that any additional coke produced shall be deposited in lined areas or other equivalent measures to prevent any additional groundwater contamination, as per consultation with the RWQCB.
	4.3 Noise and Vibration	
N.1	Operation increases at the Refinery could increase noise levels in the area.	N-1 The Applicant shall, at the Santa Margarita Pump Station, install a sound wall COP voluntarily constructed of barrier pads between the noise sources and residences, as close to the pumping operations as feasible, to reduce noise levels at the property line to less than 50 dBA. Additional barrier walls shall be installed as deemed necessary by in-field measurements. Installation of the sound wall shall be verified by County Planning and Building prior to the issuance of the permit/authorization to proceed. 2
	4.5 Land Use Policy and Consistency Analysis	
LU.1	Noise from throughput increase operations would be incompatible with the adjacent land uses.	Implement mitigation measures N-1.
LU.2	Emissions and odors from operations could be incompatible with adjacent land uses.	Implement mitigation measure AQ-2. 3

Table ES-1 Summary of Impacts and Mitigation Measures for the Proposed Project

Less Than Significant With Mitigation Impacts

Impacts That Can Be Mitigated To Less Than Significant Levels

(Impacts that must be addressed in Findings that the mitigation measures would reduce the level of impact to insignificant in accordance with Section 15091 State CEQA Guidelines.)

Comment [F5]: For all yellow highlighted sections, please see COP Comment Letter; and correct these sections as supported by facts. 1

Impact #	Impact	Recommended Mitigation Measures
	4.7 Water Resources	
WR.1	The Proposed Project one percent increase in water usage may impact the current and future availability of groundwater for other users, including agricultural and residential users.	WR-1 The Applicant shall develop a Water Management Plan, which shall include best management practices and water conservation measures, including the use of reclaimed water and surface runoff retention basin water for Refinery uses, dust suppression, and landscaping uses, as available. The Applicant shall make changes to the Water Management Plan if requested by the County Director of Planning. The Water Management Plan shall include implementation of measures consistent with the Nipomo Mesa Management Area Water Shortage Conditions and Response Plan. The plan shall provide guidelines on managing all future water use during severe drought years. Once it is determined that a severe drought condition exists, restricted (drought) water usage measures shall remain in effect until it is shown satisfactorily to the County that the severe drought condition no longer exists. This plan shall include: - Designs for and implementation of modification of the existing facility, to re-use the existing water. The SMF currently implements two systems to treat runoff and water used during operations. The water could be further treated and re-used as part of additional conservation activities. Additional plans and reports would be required for the treatment activities. - Identification of general measures available to reduce water usage for Refinery Operations. - Other measures as appropriate to offset the increased use of water related to the Proposed Project during severe drought conditions, which may include purchase of water rights from other users, conservation efforts, use of reclaimed water, or additional water treatment and reuse as needed.
WR.3	The Proposed Project may have significant impacts on water quality.	WR-3.1 Ensure that any additional increased process water is treated by the wastewater treatment system in conformance with the NPDES Permit. WR-3.2 Existing spill management precautions shall be amended as needed to mitigate an increased spill size due to the increased amount of crude oil processing as reviewed and approved by San Luis Obispo County Planning and Building and San Luis Obispo County Water Resources Division. 2

Table ES-2 Summary of Impacts and Mitigation Measures for the Proposed Project

Less Than Significant Impacts

Impacts That Are Insignificant

(Impacts that must be addressed in a "statement of overriding consideration" if the Project is approved in accordance with Sections 15091 and 15093 of the State CEQA Guidelines.)

Impact #	Impact	Recommended Mitigation Measures
	4.1 Air Quality	
AQ.4	Potential increased operations at the refinery would emit air-borne toxic materials.	None required.
	4.2 Public Safety and Hazardous Materials	
PSHM.1	The Proposed Project could introduce risk to the public associated with accidental releases of hazardous materials from the SMF processing operations.	Facility shall continue to minimize and control accidental releases from operations. [1] None required.
PSHM.2	The Proposed Project could introduce risk to the public associated with the transportation of SMF product along local and area roadways.	None required.
	4.3 Noise and Vibration	
N.2	Traffic increases on area roadways near the Refinery could increase noise levels in the area.	None required.
	4.4 Public Services	
PS.1	Increased throughput and operations at the Santa Maria Facility would produce increased wastewater.	None required beyond existing National Pollutant Discharge Elimination System permit requirements.
PS.2	Santa Maria throughput increase operations would generate increased solid wastes.	None required; solid wastes are properly handled and disposed per RCRA and state hazardous waste control laws. [2]

Table ES-2 Summary of Impacts and Mitigation Measures for the Proposed Project

Less Than Significant Impacts

Impacts That Are Insignificant

(Impacts that must be addressed in a "statement of overriding consideration" if the Project is approved in accordance with Sections 15091 and 15093 of the State CEQA Guidelines.)

Impact #	Impact	Recommended Mitigation Measures
PS.3	Impacts from decreased electricity consumption at the Santa Maria Facility due to throughput increase operations.	None required; beneficial.
PS.4	Decreased fossil fuel consumption and production (diesel, gasoline, and natural gas) at the Santa Maria Facility could thereby decrease availability.	None required; beneficial
PS.5	Throughput increase at the site could impact fire protection and emergency response.	None required.
	4.6 Transportation and Circulation	
TR.1	Traffic associated with the Proposed Project would increase traffic on local roads and the freeway.	TR-1 Within 30 days of permit approval, the applicant shall pay South County Area 2 Road Impact Fees to the Department of Public Works for the proposed .78 peak hour trip increase in accordance with the latest adopted fee schedule. In addition, after the Willow Road/Highway 101 interchange is completed, the applicant shall end the use of both their northbound and eastbound truck routes, as identified in this document, and shall use the Willow Road Interchange instead.
	4.7 Water Resources	
WR.2	The Proposed Project will have no impact on groundwater pumping of onsite wells.	None required.

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Introduction

This Environmental Impact Report (EIR) assesses environmental impacts associated with the ConocoPhillips Santa Maria Facility Project (Proposed Project), proposed by ConocoPhillips (COP). The proposed location of the Project is in unincorporated San Luis Obispo County on the Arroyo Grande mesa. Figure 1-1 shows the location of the Proposed Project. The County of San Luis Obispo and APCD are the co-lead agencies for this EIR.

The Santa Maria Facility (SMF) is part of the greater San Francisco Refinery, consisting of two facilities: the San Francisco-area Rodeo Refinery and the Santa Maria Refinery. These two facilities are linked by a 200-mile pipeline (see Figure 1-1). The refineries mainly process heavy, high-sulfur crude oil. The Rodeo Refinery receives California crude oil directly by pipeline and tanker and receives foreign crude oil directly by tanker. Semi-refined liquid products from the Santa Maria Refinery are sent by pipeline to the Rodeo Refinery for upgrading into finished petroleum products. Products leave the Santa Maria Refinery as (1) semi-refined petroleum by pipeline, (2) solid petroleum coke by rail or haul truck, or (3) recovered sulfur by haul truck. The Project site has been used for petroleum oil refining since 1955.

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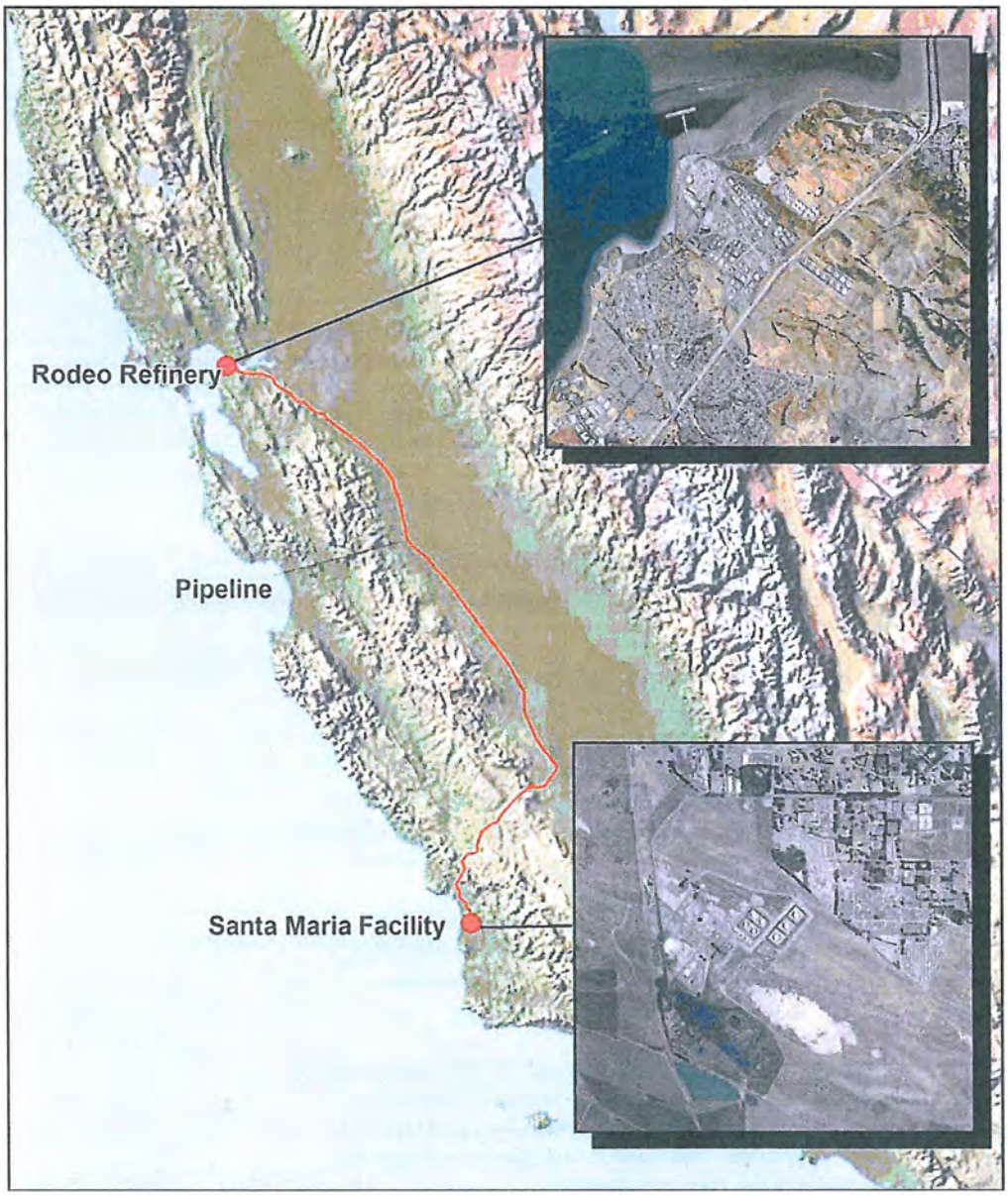
COP proposes to increase throughput at the SMF by 10 percent to a maximum of 48,950 barrels per day and allow previously refined gas/oil petroleum liquids to be transported by truck to the Santa Maria Pump Station in northern Santa Barbara County and mixed with the crude oil. Semi-refined petroleum products would then shipped by pipeline from the Santa Maria Refinery to the Rodeo Refinery in the San Francisco Bay Area.

Current Air Pollution Control District (APCD) permit limits on crude oil throughput are 48,000 barrels per day and 16,220,600 barrel per year. Current Planning and Building permit limits are a maximum of 44,500 barrels per day of oil. The Proposed Project would increase throughput to 48,950 barrels per day and 17,866,750 barrels per year, approximately 10 percent over the current Planning and Building Department permit level. While the County's permit is based on a daily maximum and the APCD's permit is based on twelve-month rolling average, these volume limits are the same.

This EIR evaluates the Proposed Project, which would occur under County jurisdiction. Information for the proposed 10 percent throughput increase is based on COP's Development Plan/Coastal Development Permit and COP's responses to the EIR preparer's information requests.

San Luis Obispo County will use the EIR when evaluating the suitability of the COP application. The goals of the EIR are to provide the public and decision makers with detailed information about the current and future operations at the Proposed Project site, to determine what types of environmental impacts could result from these operations, and suggest mitigation measures for any potential impacts that could be incorporated into the Proposed Project.

Figure 1-1 Location of the Santa Maria Refinery



Comment [F1]: Map needs north arrow and scale for clarity. 1

1.1 Proposed Project Objectives

Pursuant to Section 15124(b) of the CEQA Guidelines, the description of the Proposed Project is to contain "a clearly written statement of objectives" that will aid the lead agency in developing a reasonable range of alternatives to evaluate in the EIR and will aid decision makers in preparing findings and, if necessary, a statement of overriding considerations. Project objectives should include the underlying purpose of the Project.

The applicant's overall goal for the Project is to increase the daily maximum limit of crude oil throughput by 10 percent and process petroleum liquid under the definition of crude oil. This would be achieved through the following objectives:

- Operate the Santa Maria Refinery in accordance with all prevailing laws and regulations to maximize safety and protect the environment.
- Employ current technologies in an effort to reduce environmental impacts to less-than-significant levels.
- Provide a development project that is consistent with the major objectives of the County's General Plan.
- Provide a development project that continues to meet the regulatory requirements and objectives of the San Luis Obispo County APCD.
- Provide a development project that meets the regulatory requirements and objectives of the Regional Water Control Board and continues to comply with the existing National Pollutant Discharge Elimination System permit.
- Continue the process of removing contaminated materials from the Project site to a designated disposal facility where they can be contained and controlled.
- Protect human and ecological receptors from exposure to potentially harmful substances.
- Minimize noise impacts to surrounding areas.
- Minimize traffic impacts to surrounding areas.

1.2 Agency Use of the Document

The APCD and the County determined that an environmental analysis of the Proposed Project consistent with the requirements of CEQA was needed in order to proceed with the permitting of the Proposed Project. Section 15124(d) of the CEQA Guidelines requires that an EIR contain a statement within the project description briefly describing the intended uses of the EIR. The CEQA Guidelines indicate that the EIR should identify the ways in which the lead agency and any responsible agencies would use this document in their approval or permitting processes. The APCD and the County will serve as the co-lead agencies and use the document as part of their decision-making process in permitting the Project.

The EIR will be consistent with Section 15120-15132 of the CEQA Guidelines, which set forth requirements for contents of Environmental Impact Reports. Based upon the environmental

impact analysis of the Proposed Project, a number of measures will likely have to be developed to mitigate the impacts that could result from the Proposed Project or any Project alternatives that may be approved by the APCD and the County. The APCD and the County will incorporate the mitigation measures identified in the EIR where applicable as conditions of approval in Project entitlements that may be granted for the Project. The environmental impact analysis will also provide alternatives analysis to determine if most of the Project objectives can be achieved while lessening adverse environmental impacts. The environmental impact analysis may also be used to disclose to the public and decision makers significant and adverse impacts that cannot be mitigated to a less than significant level.

The Regional Water Quality Control Board will use the EIR for decision making regarding continued compliance with the existing National Pollutant Discharge Elimination System permit.

1.3 EIR Process and Scope

This EIR was prepared in accordance with State, APCD and County administrative guidelines established to comply with CEQA. Section 15151 of the State CEQA Guidelines, provides the following standards for EIR adequacy:

> An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a Proposed Project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection; but for adequacy, completeness, and a good faith effort at full disclosure.

The APCD and the County have determined that the Proposed Project needs environmental review in the form of an EIR pursuant to CEQA instead of a categorical or statutory exemption, or a Negative Declaration. Under CEQA, "The purpose of an environmental impact report is to identify the significant effects on the environment of a project, to identify alternatives to the Proposed Project, and to indicate the manner in which those significant effects can be mitigated or avoided" (PRC Section 21002.1[a]). An EIR is the most comprehensive form of environmental documentation identified in CEQA and the CEQA Guidelines and provides the information needed to assess the environmental consequences of a Proposed Project. EIR are intended to provide an objective, factually supported, full-disclosure analysis of the environmental consequences associated with a Proposed Project that has the potential to result in significant, adverse environmental impacts.

In compliance with State CEQA Guidelines, the APCD and the County, as the co-lead agencies, prepared a Notice of Preparation (NOP) for the Proposed Project and solicited comments through distribution of the NOP. A public scoping meetings was held in the community on June 30, 2010, to provide an opportunity for the public to comment on the scope of the EIR. The NOP and comments received in response to the NOP directed the scope of the analysis and the

technical studies in this EIR. The following organizations and individuals submitted written and/or verbal comments:

- County of San Luis Obispo Fire Department / CAL FIRE
- County of San Luis Obispo Department of Agriculture/Weights and Measures
- State of California Native American Heritage Commission
- Ross Chenot
- Peggee Davis
- Howard Dolinsky
- Katrina Dolinsky
- Mike Eisenhard
- Judy Eisenhard
- C. Foglietta
- Melinda Forbes
- John Kenny
- Virginia Kenny
- Tamara Kleemann
- Charlie Kleemann
- Heidi Lewin-Miller
- Ty McCartney
- William Miller
- Brant Moffatt
- Dwain Morton
- Carole Morton
- Yarrow Nelson
- John Nickols
- Lois Nickols
- Cory Pereira
- David Reeck
- Steven Sproger
- Rachelle Toti
- Arlene Versaw
- Wes Burk
- Pamela Dunlap
- Kara Hagedorn
- Paul Lee

Organizations and individuals can also submit comments during the 45-day public comment period following issuance of the Draft EIR. During this period, community meetings and a public workshop will be held to discuss the Draft EIR and receive comments on the document. Based upon the comments received, changes will be made for the Final EIR. Areas where the Final EIR has been changed will be marked on the side of the page with a vertical line. All comments received on the Draft EIR and corresponding responses will be provided in electronic format on a CD attached to the inside cover of the Final EIR.

This Draft EIR identifies the environmental impacts of the Proposed Project on the existing environment, indicates how those impacts can be mitigated or avoided, and identifies and evaluates alternatives to the Proposed Project. This document should provide the APCD and the County, and responsible agencies with information necessary to exercise their jurisdictional responsibilities with respect to the Proposed Project.

The CEQA Guidelines require that a lead agency shall neither approve nor implement a project as proposed unless the significant environmental impacts have been reduced to an acceptable level. An acceptable level is defined as eliminating, avoiding, or substantially lessening significant environmental effects to below a level of significance. If the lead agency approves the Project even though significant impacts identified in the Final EIR cannot be fully mitigated, the lead agency must state in writing the reasons for its action. In these circumstances, Findings and a Statement of Overriding Considerations must be included in the record of project approval and mentioned in the Notice of Determination.

1.4 Previous CEQA Documents

The current Department of Planning and Building permit limit of 44,500 bpd was evaluated in a CEQA document in a negative declaration in 1990. Therefore, all operations at the Refinery under the current Department of Planning and Building permit limit of 44,500 bpd would be covered by a CEQA analysis and the permit level of 44,500 bpd is considered the baseline for this analysis.

1.5 EIR Contents

The EIR is organized into the following major chapters:

Executive Summary – Provides an overview of the Proposed Project, a summary of the significant impacts, and associated mitigation measures identified for the Proposed Project.

Impact Summary Table – Provides a summary of the identified impacts for the Proposed Project. The table also summarizes identified mitigation measures for each impact.

1.0 Introduction – Provides an overview on the Project evaluated in the EIR and a summary of the objectives for the Proposed Project. The section also discusses agency use of the document and summarizes the contents of the EIR.

2.0 Project Description – Provides the background of the Project, including a history of the area and a detailed description of the Proposed Project. The Project Description also contains a table describing potential permit actions, governmental agencies, and jurisdiction for the entitlements necessary for the Project to proceed.

3.0 **Cumulative Projects Description** – Describes the projects included in the cumulative analysis, which covers the cumulative impacts of reasonably foreseeable projects located in the vicinity of the Proposed Project.

4.0 **Analysis of Environmental Issues** – Describes the existing conditions found at the Project Site and vicinity and assesses the potential environmental impacts that could occur if the Proposed Project were to occur. These potential impacts are compared to various "Thresholds of Significance" (or significance criteria) to determine the severity of the impacts. Mitigation measures intended to reduce significant impacts are identified where feasible.

5.0 **Alternatives Project Description and Screening Analysis** – Provides descriptions of the Project alternatives that were evaluated in this document. The section also presents an alternative screening analysis that was used to identify alternatives that could reduce significant impacts associated with the Proposed Project.

6.0 **Comparison of Proposed Project and Alternatives and Conclusions** – Provides an analysis of alternatives to the Proposed Project that could lessen any identified significant impacts while still achieving the Project goals. It also includes the impact analysis for the alternatives evaluated in the EIR. Lastly, it summarizes the environmental advantages and disadvantages associated with the Proposed Project and the alternatives.

7.0 **Other CEQA Sections** – Discusses the significant irreversible environmental changes that would be caused by the Proposed Project should it be implemented. The section also discusses the spatial, economic, and/or population growth impacts that may result from the Proposed Project.

8.0 **Mitigation Monitoring Program** – Contains a listing of all identified mitigation measures that should be included in the permit, their implementation requirements, verification schedule, and parties responsible for implementation and verification.

9.0 **List of EIR Preparers** – Identifies and presents the qualifications of those who prepared the report.

10.0 **Agencies and Individuals Consulted During EIR Preparation** – Lists reference materials used and persons contacted to prepare the report.

The EIR also contains appendices that support the EIR and the analysis in Chapter 4. These appendices include:

Appendix A – Air Emission Calculations
Appendix B – Notice of Preparation, Comments, and Responses
Appendix C – NMMATG 2009 Annual Report
Appendix D – List of Abbreviations and Acronyms
Appendix E – References

These appendices are available in electronic format on the CD attached to the inside back cover of the EIR notebook. In addition, all comments on the Draft EIR and corresponding responses are included electronically on the CD attached to the inside cover of the EIR notebook.

2.0 Project Description

This Project Description includes general background of the ConocoPhillips Santa Maria Refinery, a detailed description of the current operations of the facility, and an explanation of the Proposed ConocoPhillips Santa Maria Refinery Throughput Increase Project (Proposed Project). The detailed description of current operations assesses the baseline for this California Environmental Quality Act (CEQA) document and provides an understanding of the elements of the Proposed Project.

2.1 Project Background

The ConocoPhillips Santa Maria Facility (SMF) was built on the Arroyo Grande mesa in southern San Luis Obispo County (SLOC) in 1955 (see Figure 2-1). The facility is surrounded by industrial, recreational, agricultural, residential land, and open space (see Table 2-1). The SMF operates 24 hours per day and 365 days per year, except when shut down for maintenance.

The SMF was previously owned by several companies, including Union Oil Company of California, Tosco, and Phillips Petroleum. Since 1955, the land use has been petroleum oil refining.

The SMF and the Rodeo Refinery, linked by a 200-mile pipeline, comprise the San Francisco Refinery (see Figure 2-2). The SMF mainly processes heavy, high-sulfur crude oil. Semi-refined liquid products from the SMF are sent by pipeline to the Rodeo Refinery for upgrading into finished petroleum products. Products leaving the SMF are: (1) semi-refined petroleum by pipeline; (2) solid petroleum coke by rail or haul truck; and (3) solid recovered sulfur by haul truck.

During recent years, the SMF has been changed, modified, and upgraded to modernize the process and comply with changing environmental regulations. Significant upgrades included installing emission control devices like the tail gas unit, low NOx burners, tank vapor recovery, and flare vapor recovery. The water treatment plant was upgraded by installing a reverse osmosis system that replaced a water softener unit, which reduced water demand from the Refinery well water system. Also, changing the water effluent to a tankage system eliminated storing water in onsite surface impounds. The most recent major change at the site involved the permanent shut down of the petroleum coke calciner in March 2007, to result in decreased criteria pollutants and hazardous air pollutants, and reduced water usage.

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Figure 2-1 Facility Location

Table 2-1 General Project Site Information

Item	Description
Assessor parcel numbers	091-141-062, 092-391-021, 034, 092-401-005, 011, 013, 092-411002, 005
Supervisorial district #	4
Planning area	South County Coastal
Land use category	IND - Industrial
Combining designation(s)	Flood Hazard Area Coastal Appealable Zone
Existing uses	ConocoPhillips Santa Maria Refinery
Topography	Coastal, dunes
Vegetation	Coastal, dune vegetation
Parcel size	2.5 square miles (~1,644 acres)
Surrounding Land Use Categories and Uses	
North	Industrial and Residential (IND and RS). Mobile home storage and residential uses.
East	Industrial, Agricultural, and Recreation (IND, AG, and REC). Vacant, farming, residential, and golf course.
South	Agricultural (AG). Farming.
West	Open Space and Recreational (OS and REC). Sensitive resource area and dune recreation.

Source: SLOC 2010

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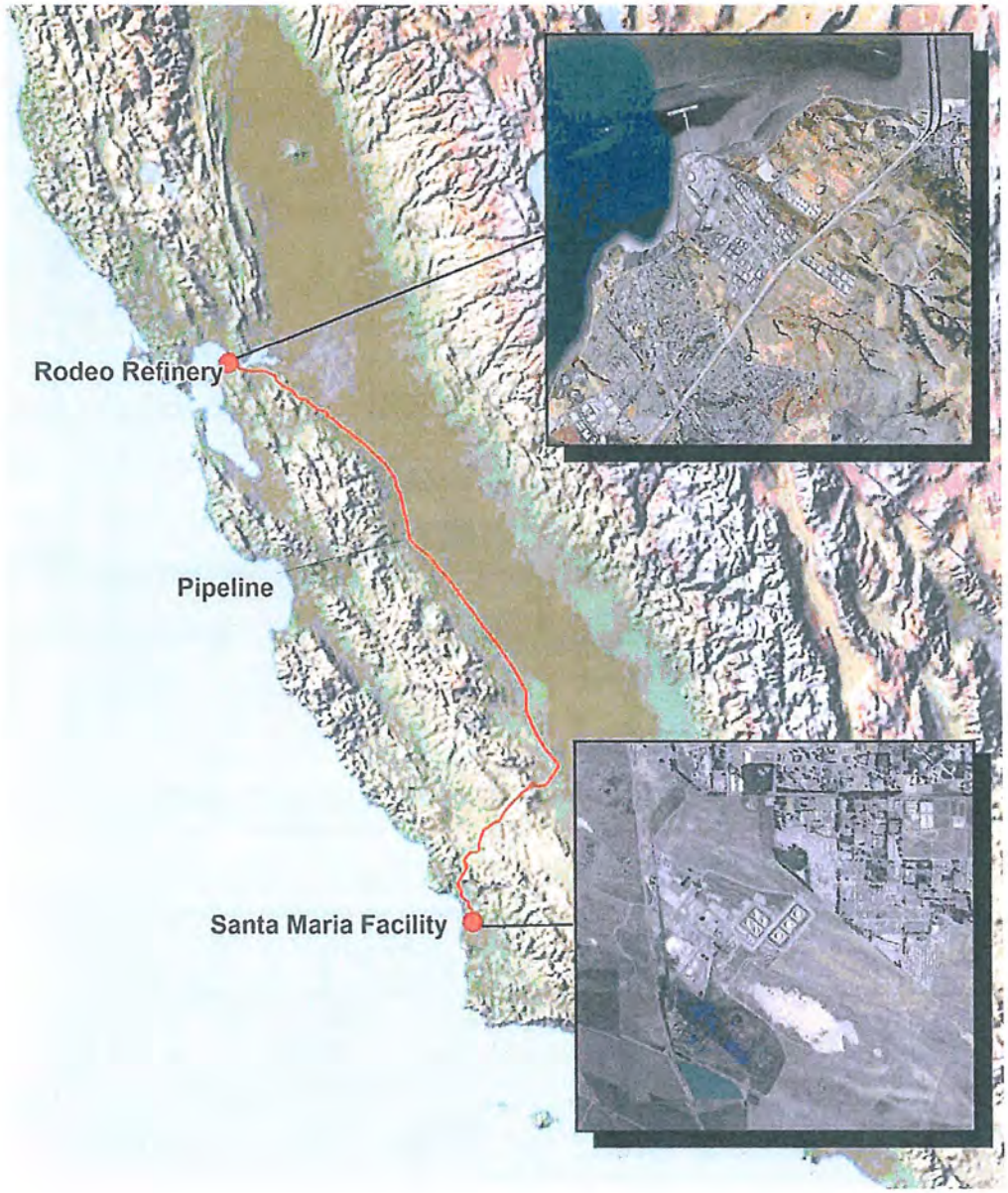
Figure 2-2 Facility Location and Pipeline Route to Rodeo Refinery



2.1.1 Current Operations

Currently the SMF processes crude oil into semi-refined liquid products, petroleum coke, elemental sulfur, and fuel gas used onsite. Primary processes at the SMF include:

- tankage for petroleum liquids;
- refining process equipment;
- petroleum coke storage and handling;
- electricity generation;
- process water treatment; and
- elemental sulfur handling.

These processes involve raw material storage, atmospheric pressure distillation, vacuum distillation, delayed coking, product storage, and product shipping. Secondary processes include a Refinery fuel gas system, a relief flare system, steam production, sulfur recovery, and oily water treatment. Additionally, Refinery fuel gas supplies a 5.8-megawatt electrical power generation system at the SMF. Figure 2-3 shows the plot plan of the SMF.

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The SMF currently processes less than the San Luis Obispo County Air Pollution Control District (APCD) permit limits of 48,000 barrels per any given day and 16,220,600 barrels per year (bpy) and close to, but less than, the current Department of Planning and Building permit limit of 44,500 barrels per day (bpd), maximum. The increased throughput proposal would rectify the differences for the permitted volumes by the Planning and Building permit and the APCD and would make both permit volumes the same. Table 2-2 lists historical annual crude oil throughputs.

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Table 2-2 Historical Crude Oil Production

Year	Throughput (bpy)	Average (bpd)
2003	13,813,748	37,851
2004	14,352,098	39,326
2005	15,489,149	42,442
2006	14,290,448	39,157
2007	15,810,183	43,321
2008	15,249,521	41,665
2009	13,080,967	35,838

Source: ConocoPhillips 2010

2.1.2 Crude Oil Classifications and Delivery to the Refinery

Crude oil is classified by weight, density, viscosity, and volatility. Thin and volatile oils are "light," whereas thick and viscous oils are "heavy." The American Petroleum Institute (API) rates light oils with a gravity of 30 to 40 degrees, which means the density is much less than that

of water, 1.0 grams per cubic centimeter, and therefore these oils easily float on water. In contrast, some heavy oils with an API gravity of less than 12 degrees are so dense that they sink in water. The API rates oil with the same density as water at 10 degrees. Table 2-3 shows the specifications of crude oil currently processed at the Santa Maria Refinery.

Figure 2-3 Santa Maria Facility Plot Plan

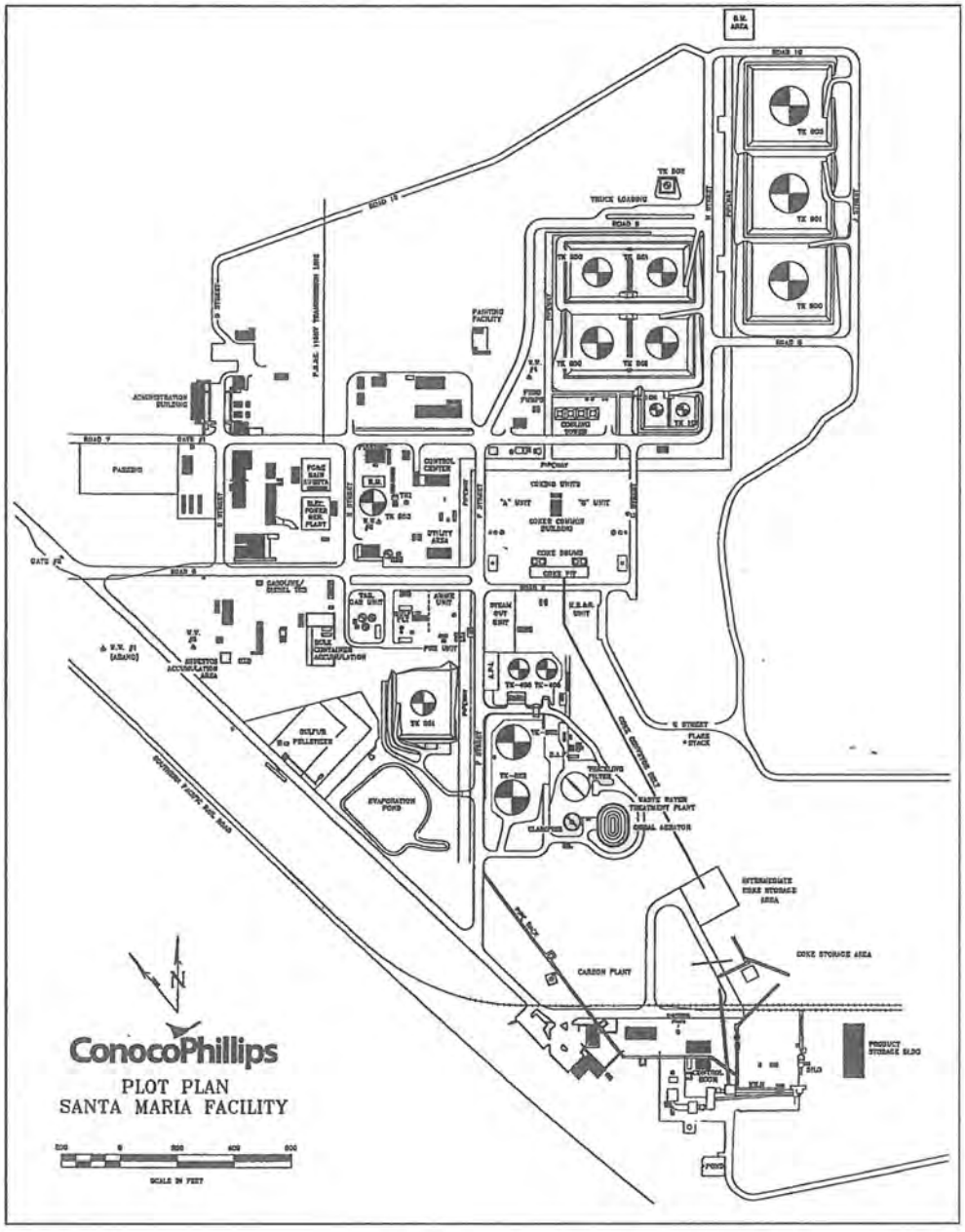


Table 2-3 Properties of Crude Oil Currently Received at the Santa Maria Facility

Characteristic	Value
Gravity, API	19
Specific Gravity at 60 degrees Fahrenheit	0.9377
Hydrogen Sulfide Concentration	< 1 parts per million by weight
Sulfur content	4.6 % by weight
Light ends (propane thru Hexanes)	Approximately 6 %
Vapor Pressure (dry equivalent, DVPE)	6.95 pounds per square inch
Kinematic Viscosity at 104 degrees Fahrenheit	245 centistokes

Source: ConocoPhillips (3/2008 sample) composite of Unit A and Unit B

The SMF receives all crude oil for processing by pipeline from various sources, including the Outer Continental Shelf (69%), Point Pedernales (18%), Orcutt Pump Station (6%), and truck deliveries to the Santa Maria Pump Station (7%). For the independent local oil producers, without pipeline access, the SMF offers a relatively close outlet to refine locally produced oil.

The bulk of the crude processed at the SMF is delivered via pipeline from offshore platforms in the Outer Continental Shelf of Santa Barbara County and from oil fields in the Santa Maria area. In addition, crude oil from some onshore areas, such as the Plains Exploration Arroyo Grande (Price Canyon) SLOC oil field, is delivered by truck to the Santa Maria Pump Station and then pumped into the dedicated pipeline, which carries crude oil to the SMF (see Figure 2-4).

2.1.2.1 Santa Maria Pump Station

Crude deliveries to the Santa Maria Pump Station totaled 6,556 truck trips in 2005; 4,582 in 2006; and 9,103 in 2007. Table 2-4 shows 2009 deliveries. Figure 2-5 shows the oil fields where the deliveries originate. Outer Continental Shelf crude oil is also delivered to the Santa Maria Pump Station from the Sisquoc Pipeline that in turn receives crude from the Plains All American Pipeline that collects crude from the PXP Point Arguello Project and the Exxon Las Flores Canyon Project (69%).

The Santa Maria Pump Station is in the northwest portion of Santa Barbara County near the City of Santa Maria. The pump station includes ConocoPhillips offices that are staffed during normal business hours. During off hours, the pump station is unstaffed and operated remotely from Bartlesville, Oklahoma.

Oil collected at the Santa Maria Pump Station is moved to the Suey Junction where it is commingled with oil traveling from the Lompoc Oil & Gas Plant (LOGP) and the Orcutt area. The oil then flows via a 10-inch and 12-inch pipeline (different sizes along route) to the Summit Pump Station and ultimately to the Santa Maria Facility.

Figure 2-4 Santa Maria Facility and Pipeline Facilities South of the SMF

Comment [F2]: Please provide North arrow and scale to provide additional information and content. 1

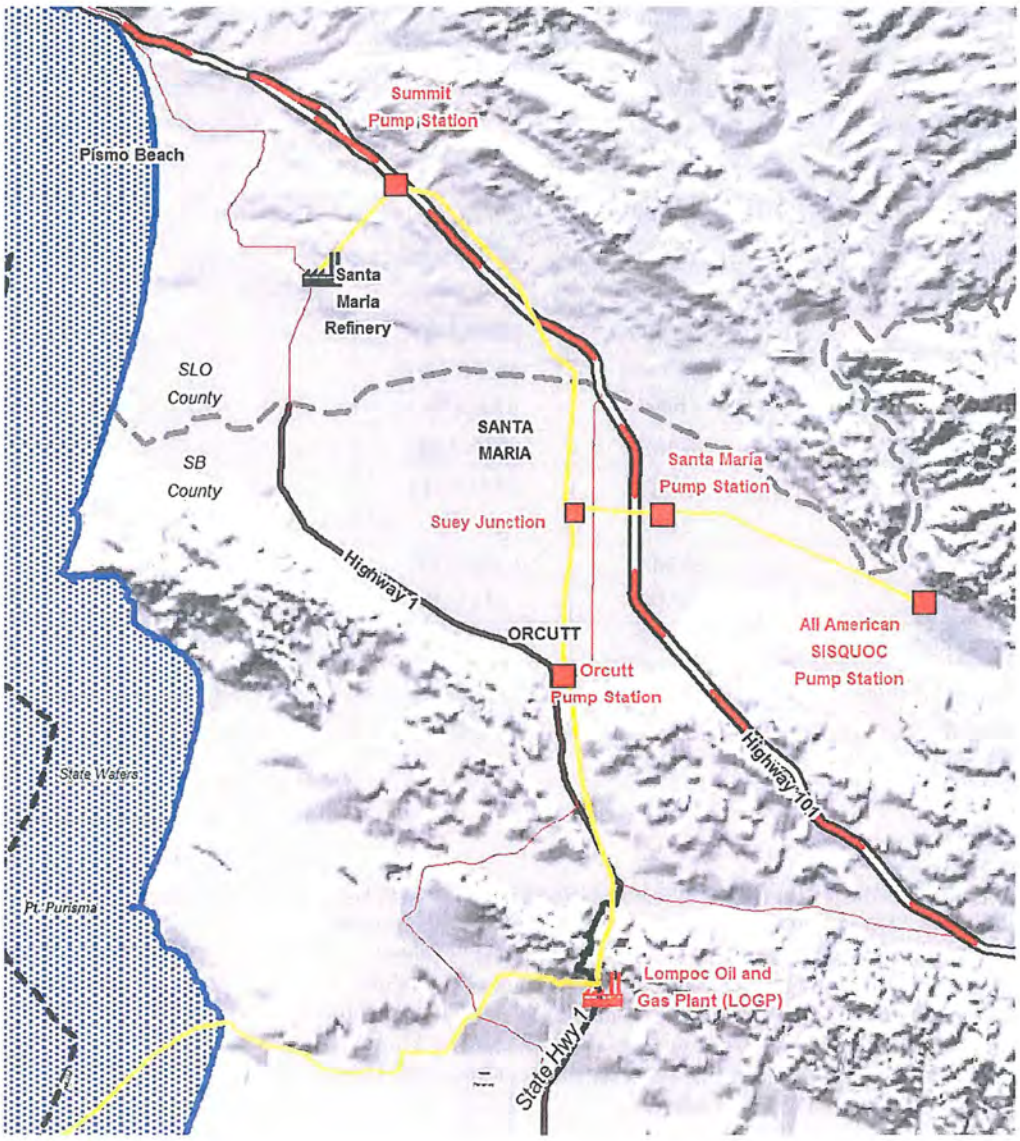


Table 2-4 Delivery Sources, Volumes, and Truck Trips to the Santa Maria Pump Station in 2009

Source	Oil Field	Volume (barrels)	Number of Trucks
Price Canyon	Arroyo Grande	314,963	1882 (27.9%)
Greka	Santa Maria Valley, Casmalia, Zaca, Cat Canyon	93,502	590 (8.7%)
Lombardi	San Ardo	106,492	673 (10%)
Tognazzini	Cat Canyon, Santa Maria	4,527	30 (0.4%)
Delaney/Tunnel	Cat Canyon	2,178	13 (0.2%)
Transition	San Ardo *	37,668	230 (3.4%)
San Ardo Rosenberg	San Ardo	460,146	2801 (41.5%)
Peshine	Casmalia	8,622	57 (0.8%)
San Ardo Ex/Mob	San Ardo	26,302	125 (1.9%)
Wickendon	Cat Canyon	12,503	84 (1.2%)
Brinan	San Ardo	246	2 (0%)
Cantin	Cat Canyon	26,247	170 (2.5%)
Thompkins	Casmalia	9,789	67 (1%)
McCool	McCool Ranch	4,845	30 (0.4%)
Total		**1,108,030**	**6,754**

* Based on conversation with DOGGR
Source: COP 2010

2.1.2.2 Orcutt Pump Station

As stated, approximately six percent of crude delivered to the Santa Maria Facility travels via pipeline from the Orcutt Pump Station. This station is a non-staffed facility that receives oil via pipeline from two sources: LOGP line 300 and the Gathering Line 353 from local onshore producers (6%). The crude from the LOGP is produced at Platform Irene as part of the Point Pedernales Project (18%). Crude oil travels from the Orcutt Pump Station via an 8-inch pipeline to the Suey Junction, where it is commingled with oil traveling from the Santa Maria Pump Station. The oil then flows via a 10-inch and 12-inch pipeline (different sizes along route) to the Summit Pump Station and ultimately to the Santa Maria Facility.

2.1.2.3 Summit Pump Station

APCD Permit to Operate Number 560-2 authorizes one 1,067-barrel fixed-roof crude oil storage tank (Union Oil Tank Number 161201) for buffering and storing pumped material. However, it has been out of service since 2001. Pumps at the station were removed in 2007. Crude oil from

Comment [F3]: Added as Pumps were removed. This is NOT consistently described in the rest of the document. 2

the All American Pipeline, Point Arguello, and Santa Maria Valley passes through the Summit Pump Station en route to the Santa Maria Facility. Section 2.1.7.1, Pump Stations, discusses pump stations along the pipeline route within San Luis Obispo County from the SMF to the Rodeo Refinery.

Figure 2-5 Local Oil Fields

2.1.3 Current SMF Operations

The SMF partially refines crude oil to extract intermediates and gasses, and uses the heavier crude oil components to produce petroleum coke. The SMF uses two identical coking units, Units A and B, to remove the heavier components from the crude oil. Units A and B are both Delayed Coking Units in which the crude oil is first processed through an atmospheric distillation unit, which produces gas oil, pressure distillate (naphtha), and some fuel gas. The remaining oil is sent to a vacuum distillation unit where additional gas oil is extracted. Residual oil is finally delivered to Coking Units A and B, where thermal decomposition makes it into green coke, higher-value liquid distillates, and fuel gas. Green coke produced by the Delayed Coking Units was historically further processed by a calcining operation that increased the value of the coke. The calcining unit was shut down in 2007. Therefore, only green coke is now produced at the SMF.

Gases produced in the Delayed Coking Units are sent to the Amine Units (Sulfinol) for the removal of hydrogen sulfide (H2S). After H2S is separated from gas, the gas can be used as fuel for the SMF and the H2S is converted into elemental sulfur through a Claus sulfur recovery process.

Gas oil and naphtha are shipped by pipeline to the San Francisco-area Rodeo Refinery for processing into gasoline, diesel fuel, and other petroleum end-use products.

The two naphtha storage tanks at the SMF were retrofitted with domed-roof vapor recovery systems in the early 1990s to reduce the significant odor impacts. As the fluid level in a dome-covered tank drops, natural gas is bled into the head space to maintain positive pressure. Conversely, as the fluid level rises, the blanket of natural gas, which may have odorous compounds, is vented to the SMF's make-gas system where Amine Units remove the odorous compounds to produce elemental sulfur.

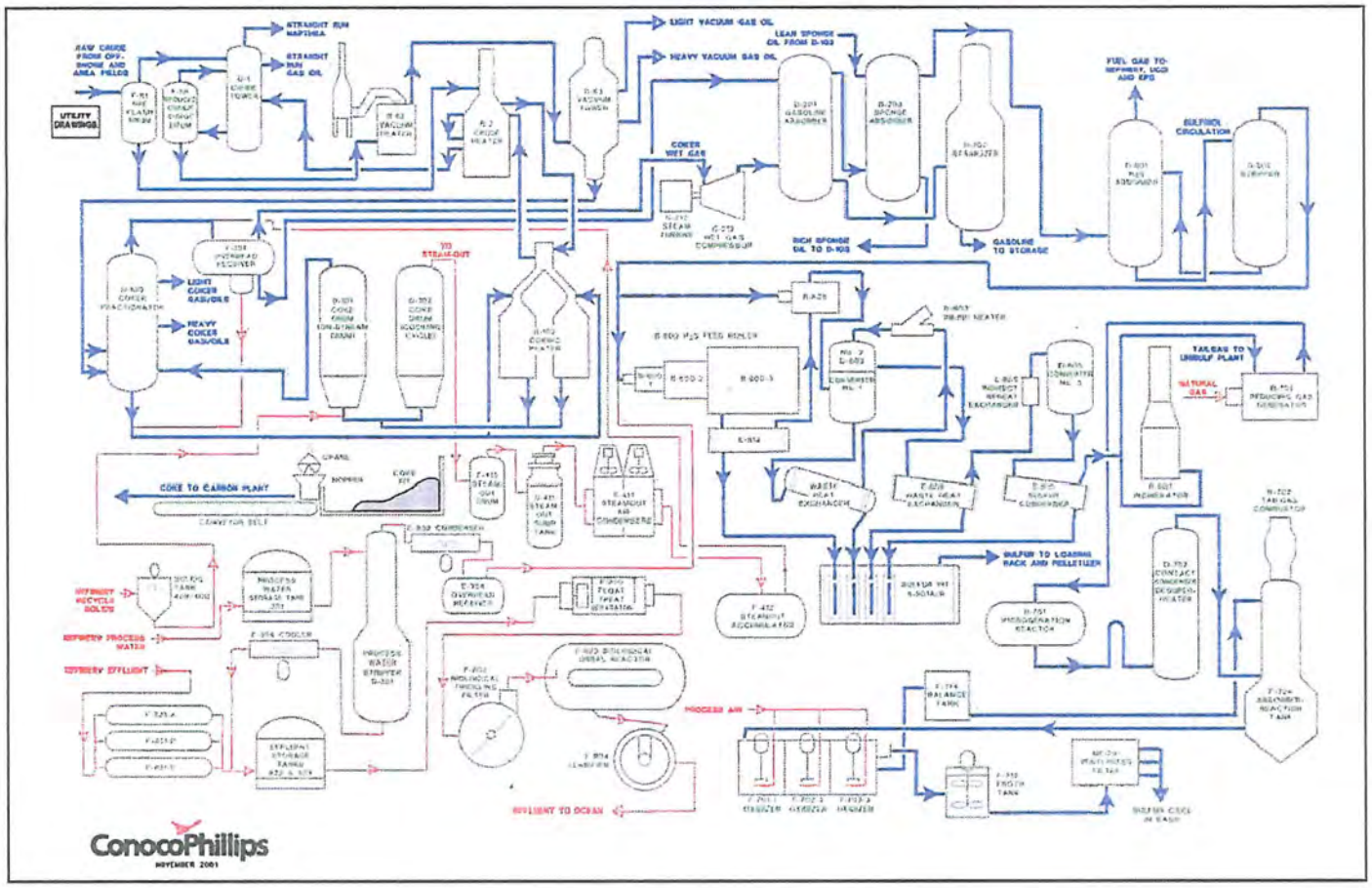
During process unit turnarounds when both process lines A and B are shut down and undergoing maintenance, a temporary flare system may incinerate off-gas from the tank farm vapor recovery system. A gas scrubbing system removes H2S prior to incineration to meet the regulatory limit.

The capacity of each coking unit is approximately 25,000 bpd of crude oil. However, the total SMF APCD-permitted throughput is 48,000 for any given day. The processes are interconnected (see the block flow diagram in Figure 2-6). The respective processing activity locations are shown in the plot plan in Figure 2-3.

2.1.4 Fuel Gas Processing and Handling

The fuel gas treatment system allows ConocoPhillips to use gas produced from refining processes, by removing sulfur to concentrations less than the regulatory limits. Gases are collected for fuel gas from the crude units, vapor recovery systems, and other processes at SMF for sulfur removal. Refinery fuel gas is then used to power process heaters, steam boilers, and electrical generation equipment. The sulfur-removal process utilizes a sulfinol-based amine system to treat the fuel gas and is combined with a three-stage Claus system

Figure 2-6 Current Operations – Santa Maria Facility Block Flow Diagram



and a tail-gas treating unit (TGU). This produces up to 91 long tons per day of molten sulfur. A pelletizer transforms the molten sulfur into sulfur pellets. The TGU is the final sulfur-removal stage before treated off-gas is emitted to the atmosphere. In the final step of this process some of the sulfur may also be converted into a sulfur–cake byproduct.

The fuel gas and tail gas are sampled in several ways, including: (1) continuous fuel gas monitoring for H2S content; (2) continuous sampling for total reduced sulfur; (3) weekly fuel gas sampling for total sulfur; and (4) continuous fuel gas monitoring for heat content (British thermal units) and carbon content. The fuel gas samples are taken from the main supply line to ensure the samples are representative of the gas supplied to each combustion device throughout the facility.

2.1.5 Coking Units and Coke Handling

Petroleum coke from the SMF coking units is transported to a stockpile on a conveyor belt. The stockpile is managed with front-end bucket loaders and bulldozers, which load the petroleum coke into trucks and railcars. In this process, the coke is maintained at a specific moisture content to reduce transfer and handling dust. In addition, the storage piles are frequently wetted to minimize dust emissions. Roadways (track in/out) are swept daily to further ensure minimal dust from coke handling operations.

Pursuant to an agreement with the APCD to address particulate emissions, ConocoPhillips adopted a Coke and Sulfur Storage and Handling Plan to reduce petroleum coke inventory stockpile volumes at the SMF. The Plan sets a goal for the reduction of[1] total petroleum coke material stored at SMF. It required the[2] volume at the SMF to not exceed 7,000,000 cubic feet by January 1, 2009, and to not exceed 4,000,000 cubic feet by January 1, 2010. The current permit[3] limit for coke storage is less than 4,000,000 cubic feet. As a result, the 539,649 tons of petroleum coke transported in 2006 and 2007 includes both petroleum coke inventory reduction and petroleum coke produced by the crude throughput. Table 2-5 shows historical coke inventories.

Comment [F4]: Coke pile inventory is irrelevant in this section. Can not find this value in Table 2-6? A Table reporting total Green coke Shipment????? [4]

Deleted: The coke pile inventory for 2010 is 723,163 cu ft and by July 2011 ConocoPhillips reported an inventory of 1,308,134 cu ft. [5]

Table 2-5 Historical Petroleum Coke Inventories at the SMF

Year	Coke Inventory	
	Cubic Feet	Short Tons
2007	6,292,000	151,000
2008	6,459,000	155,000
2009	5,042,000	121,000
2010	723,163	17,873

Source: Wallace physical surveys

Normal petroleum coke inventories fluctuate when market conditions change. Petroleum coke is sold to various end users, including California users who receive relatively steady deliveries by truck. Overseas users receive the petroleum coke by ships that are loaded at the Port of Los Angeles by rail cars. Multiple unit trains, typically 22 cars each carrying approximately 100 tons of green coke, transport a shipload of petroleum coke to the ports. The SMF must stockpile enough petroleum coke to fill a ship for an overseas shipment.

In 2007, the SMF transported a historically high volume of petroleum coke to reduce inventory pursuant to the APCD agreement. Shipments of more than 400,000 tons continued in 2008 and 2009 to continue to reduce the inventory.

To meet criteria pollutant requirements, rather than implementing control technology on the petroleum coke calciner, ConocoPhillips elected to permanently shut down the facility in March 2007. This shutdown reduced facility emissions of hazardous air pollutants to less than the major source level and also led to several equipment and operating condition changes in the permit. For example, the facility installed a new boiler in the utility plant to replace steam production from the calciner waste heat boiler.

The Coke and Sulfur Storage and Handling Plan, an agreement between ConocoPhillips and the APCD also outlines fugitive dust mitigation measures. The objective is to minimize particulate matter generated from the coke and sulfur handling, storage, and transport areas at the SMF. The plan includes measures for spill prevention and clean-up, minimum moisture content, and pavement improvement, as well as loading and trucking procedures. If emissions from the equipment or stockpiles covered by this permit cause excessive concentration of air contaminants anywhere beyond the SMF property line, corrective steps shall be taken to control the emissions.

In February 2010,[1] the APCD released the South County Phase 2 Particulate Study, which states as a major finding:

> The petroleum coke piles at the ConocoPhillips facility are not a significant source of ambient PM on the Nipomo Mesa. Elemental analysis did not detect significant amounts of the tracer elements for petroleum coke at the Mesa2 monitoring site.

The report also concludes:

> In summary, the measurements and analyses presented above support a definitive conclusion that the ConocoPhillips petroleum coke storage piles were not a significant source of PM10 aerosols during the study period, despite the occurrence of strong winds and several episodes of high PM concentrations.

Water also plays a role in the management and control of dust emissions during the petroleum coke handling process. Water is distributed by Rain Bird sprinklers that are mobile to provide ample coverage over the stockpiles, sprayed on roadways by a water truck, and used in a wash system to clean each truck before it leaves the facility. The estimated current water usage for the coke handling process is 20,000 gallons per day.

2.1.6 Water Processing

All water drainage, including storm run-off, is collected and treated onsite, and then discharged to the Pacific Ocean pursuant to waste discharge requirements stipulated in Regional Water Quality Control Board Order Number R3-2007-0002 (the Order), adopted on September 12, 2007. The Order serves as the permit under the National Pollutant Discharge Elimination System (NPDES). The SMF is currently in full compliance with the permit conditions. Accommodating the crude throughput increase would not require changes to permitted/design flow (0.575 MGD

dry weather) in the NPDES permit (ConocoPhillips 2010). Much of the information in this section is based on the Order.

Under the permit, the SMF can discharge up to 0.57 million gallons per day (MGD) of treated wastewater from the facility to the Pacific Ocean in dry weather conditions. The treatment system receives 279 gpm (gallons per minute) (0.40 MGD) of actual dry-weather process water. Flows of typical dry weather discharge from the treatment system to the outfall sump are 266 gpm (0.38 MGD) and flows of typical wet weather discharge from the treatment system to the outfall are approximately 406 gpm (0.58 MGD). Oil is recovered from the wastewater and contact stormwater during treatment.

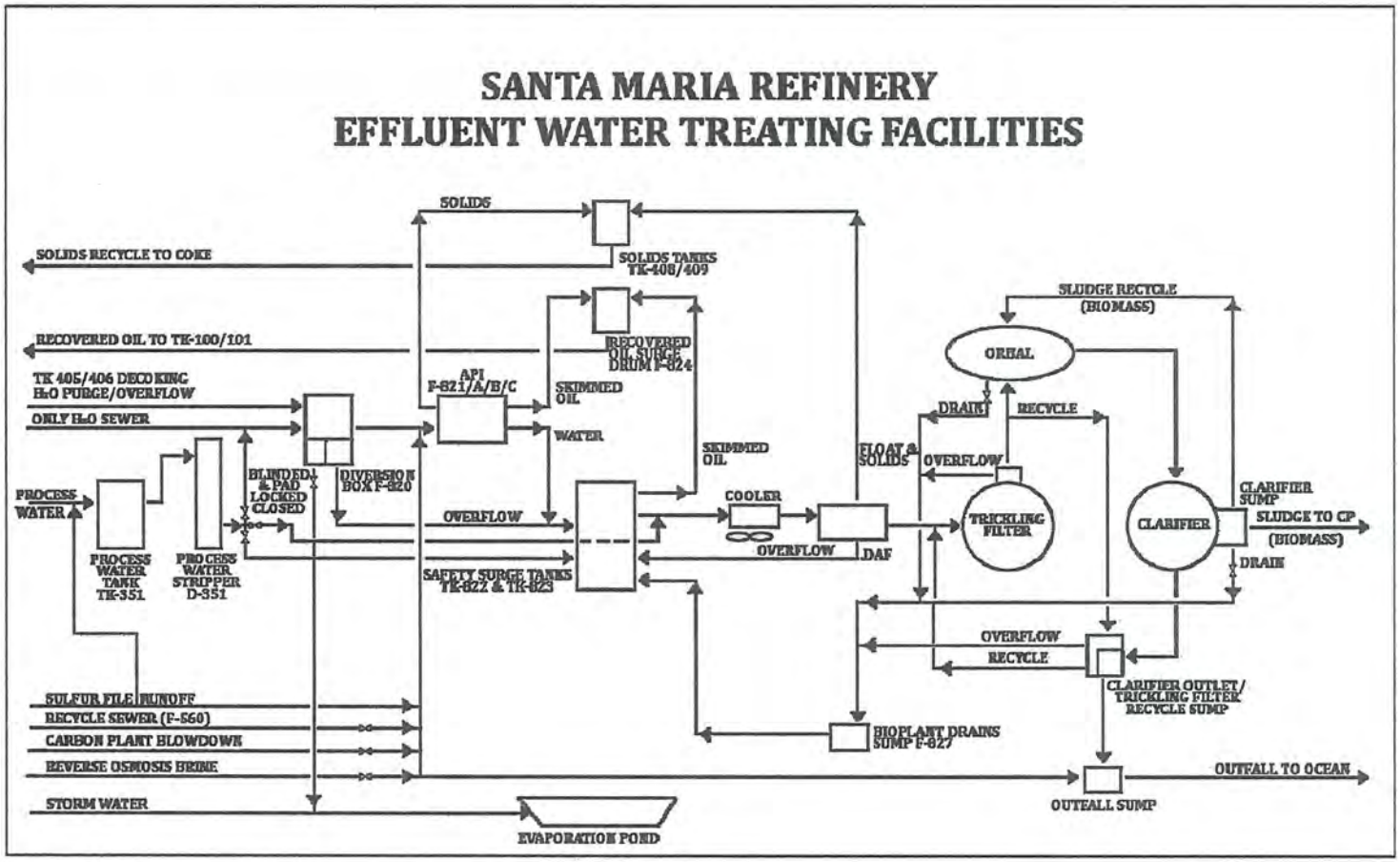
The facility maintains two separate collection systems: one for process water and contact stormwater and the other for non-contact stormwater. Contact stormwater is precipitation runoff from the oil storage tank dikes, the sulfur pile, and the operating units and it potentially contains oil. Process water and contact stormwater are collected in the process water system and then flow by gravity to the water treatment system. Site remediation water from offsite underground storage tanks and remediation water from offsite wells is also treated in the water treatment system.

Water is entrained in and produced with the naturally occurring crude oil. During most stages of the refining process, process water is separated from the products and collected in various vessels throughout the SMF. The process water then goes through a process water stripper that removes volatile organics, hydrogen sulfide, and ammonia. After leaving the process water stripper, the water is combined with other oily water and then processed through the oily water treatment system.

The oily water treatment system includes three oil and water separators, two surge tanks, dissolved air floatation, a trickling filter, an Orbal aeration system, and a secondary clarifier. The system uses equipment to first separate the oil from the water, which includes API oil water separators and a dissolved air flotation unit. Next, a biological treatment unit removes any remaining hydrocarbons and ammonia and then discharges the water to the Pacific Ocean according to the NPDES permit that sets water quality standards. As part of the permit, effluent is monitored for compliance with limitations and to determine the amount, if any, that the discharger is contributing to receiving water exceedances above water quality objectives.

Precipitation runoff from streets and unimproved areas not at risk for oil spills is collected in a non-contact stormwater sewer system and flows by gravity to an evaporation pond. This non-contact stormwater is not discharged to the receiving water. Bio-matter generated during the treatment processes is recycled at the adjacent green coke handling facility. Figure 2-7 is a flow schematic of the water treatment facility.

Figure 2-7 Effluent Water Block Flow Diagram



2.1.7 Transportation of Products

Products leave the SMF as semi-refined petroleum by pipeline, as solid petroleum coke by rail or haul truck, and as recovered sulfur by haul truck. The two semi-refined liquid products, gas-oil and naphtha or petroleum distillate, travel via pipeline to the ConocoPhillips Rodeo Refinery for processing into transportation fuels. Petroleum coke is shipped via truck or railcar to customers as fuel or onto ships for export. Sulfur is shipped via truck to customers in the agricultural industry or loaded on ships for export. All products are shipped outside of SLOC. All of the fuel gas produced is recovered and used for energy at the SMF.

Table 2-6 provides truck and rail shipping data for 2003 through 2009. Major petroleum coke destinations include Mojave, Victorville, Cupertino, Fontana, Lebec, and Gorman, and Long Beach for export. Sulfur truck destinations are in the San Joaquin Valley from Bakersfield to Fresno, as well as Long Beach for export.

Table 2-6 Truck and Rail Shipping

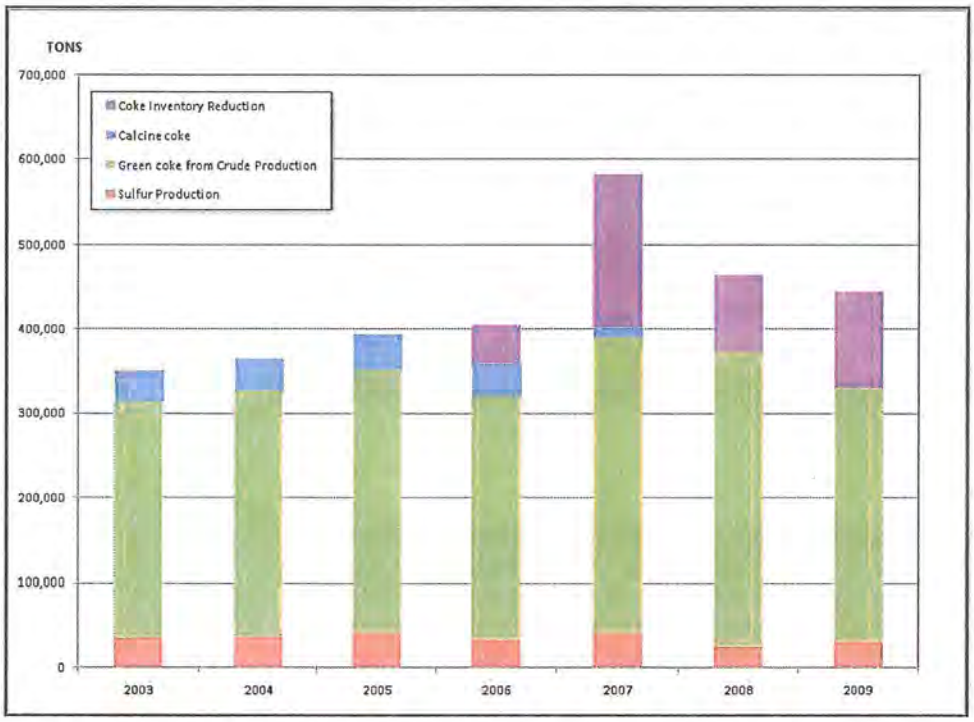
		2003*	2004*	2005*	2006	2007	2008	2009
Total Green Coke from Crude Production and Inventory Reduction	Trucks (tons)	183,024	190,157	205,222	219,202	320,439	303,396	334,562
	Trucks (quantity)	7,321	7,606	8,209	8,588	12,637	11,849	13,759
	Rail (tons)	96,076	99,820	107,729	115,067	209,166	135,000	78,347
	Total Tons	279,100	289,978	312,951	334,269	529,605	438,396	412,909
Estimated Green Coke Inventory Reduction*	Trucks (tons)	0	0	0	30,645	109,551	89,944*	114,009*
	Trucks (quantity)	0	0	0	1,226	4,382	3,598*	4,560*
	Rail (tons)	0	0	0	15,787	70,041	0	0
	Total Tons	0	0	0	46,432	179,592	89,944*	114,009*
Calcined Coke	Trucks (tons)	2,550	2,649	2,859	2,700	1,250	0	0
	Trucks (quantity)	102	106	114	110	50	0	0
	Rail (tons)	33,994	35,319	38,117	36,000	10,000	0	0
	Total Tons	36,544	37,968	40,976	38,700	11,250	0	0
Total Coke Transported	Tons (Calcine and Green)	315,644	327,945	353,927	372,969	540,855	438,396	412,909
Sulfur	Tons	34,539	35,885	38,728	31,783	39,531	24,665	30,645
	Trucks (quantity)	1,382	1,435	1,549	1,271	1,581	1,000	1,250
Total Trucks	Quantity	8,805	9,148	9,872	9,969	14,268	12,849	15,009

* Estimate based on crude throughput and coke to crude ratio of 22.85 tons/thousand barrels
Source: ConocoPhillips

Trucks making deliveries north of the SMF access U.S. Highway 101 via State Route 1 to Halcyon Road to Grand Avenue. Trucks heading south access U.S. Highway 101 by travelling through Nipomo or Guadalupe on State Route 1. State Route 166 East is accessed from U.S. Highway 101 near Santa Maria or from State Route 1 in Guadalupe.

Figure 2-8 shows the quantities of produced petroleum coke and sulfur, in tons. The figure also shows the amount of coke produced and subsequently moved from the SMF by rail or truck and the amount of coke moved from the SMF due to the coke inventory reduction program. Pursuant to the SLOC APCD agreement, the SMF has reduced coke inventory stockpile volumes to decrease particulate matter emissions. Accordingly, the SMF moved uncharacteristically large quantities of coke from 2006 through 2009 to reduce the stockpile size. In 2007, nearly 180,000 tons of coke were moved from the SMF coke storage piles to markets (see Figure 2-8).

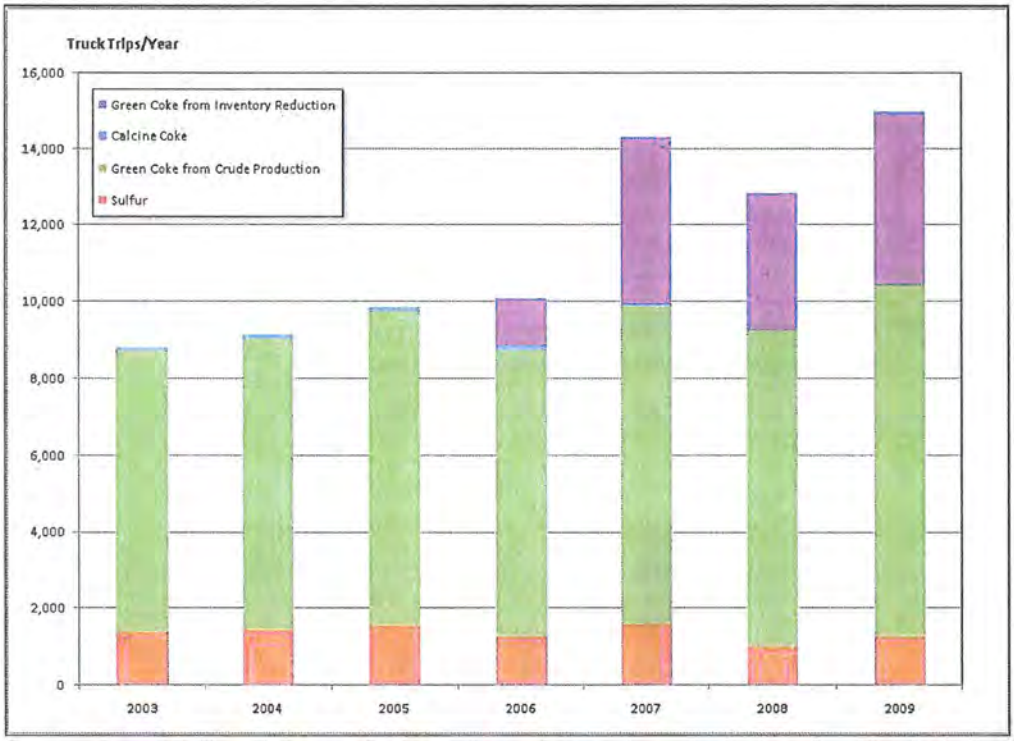
Figure 2-8 Historical Coke and Sulfur Production and Movement Levels (Tons)



Source: ConocoPhillips and estimates of coke production from crude throughput based on historical ratio of 22.85 tons green coke per thousand barrels crude oil.

Figure 2-9 shows the number of truck trips associated with coke and sulfur production. In 2007, coke trips increased substantially due to the coke inventory reduction program. Also, calcined coke historically was primarily moved by rail rather than by truck (and calcined coke is no longer produced at the SMF). In addition, in 2009, more coke was transported via truck than historical averages.

Figure 2-9 Historical Green Coke and Sulfur Movement Levels (Truck Trips)



Source: ConocoPhillips. Estimates of coke production from crude production based on historical ratio of 22.85 tons green coke per thousand barrels crude oil.

2.1.7.1 Pump Stations

The ConocoPhillips pipeline utilizes multiple pump stations along the pipeline route from the SMF to the Rodeo SMF (see Figure 2-2). The facilities located within San Luis Obispo County are Santa Margarita, Shandon, Creston, Summit, and Cuesta pump stations (see Figure 2-10). The Santa Margarita and Shandon pump stations each consist of pumps driven by natural gas combustion engines and related storage tanks. The Summit and Cuesta pump stations only include minimal equipment such as pumps and storage tanks that may or may not be in hydrocarbon service. The Creston Pump Station is currently inactive.

The APCD has issued four operating permits (Permits to Operate) for equipment at the pump stations. Each station has two permits that are reviewed and reissued annually. The following sections discuss each of these permits.

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Comment [F5]: This is not clear as there are 3 listed that follow for SMPS, 3 for Shandon and no permits listed for Creston or Cuesta…??? 6

Comment [F6]: Inconsistent with section that follows… 7

Santa Margarita Pump Station

- APCD Permit to Operate Number 556-5 authorizes the use of petroleum pipeline pump drivers consisting of four natural gas-fired engines, each with Johnson/Matthey 3-way catalysts and oxygen feedback controllers. Specifically, there are two 330-horsepower (hp) Caterpillar G-379NA engines, designated G-11 and G-12, and two 575-hp Enterprise GSG-6 engines, designated G-1 and G-2, with air-to-fuel ratio controllers, carburetors, and an integrated Continental Controls Corporation system and custom manifold.
- APCD Permit to Operate Number 404-7 authorizes one petroleum storage tank farm consisting of: (1) an external floating roof and welded shell storage tanks with double seals; (2) a fixed roof and riveted shell storage tanks; and (3) a carbon absorption vapor control system.
- APCD Permit to Operate Number 923-1 authorizes a backup generator and fire pump system for a petroleum pipeline station consisting of: (1) one 100-kilowatt generator driven by a 156-hp diesel-fueled engine; (2) one main fire pump driven by a 287-hp diesel-fueled turbo-charged engine; and (3) one fire pump driven by a 125-hp diesel-fueled engine.

Shandon Pump Station

- APCD Permit to Operate Number 583-3 authorizes the use of two natural gas-fired 330-hp Caterpillar G-379NA engines with Johnson-Matthey 3-way catalysts and Dynalco air-to-fuel ratio controllers.
- APCD Permit to Operate Number 565-2 authorizes one organic liquid storage tank consisting of a pontoon-floating roof, metallic shoe primary seal, zero gap secondary wiper seal, and associated valves, flanges, pumps, and lines.
- APCD Permit to Operate Number 921-1 authorizes a backup generator and fire pump system for a petroleum pipeline station consisting of: (1) one 100-kilowatt generator driven by a 156-hp diesel-fueled engine; and (2) one fire pump driven by a 176-hp diesel-fueled engine.

Creston Pump Station

There are no longer any pumps or active tanks at the Creston Pump Station.

Cuesta Pump Station

Two electric pumps at the Cuesta Pump Station pump semi-refined products from Cuesta County Park to the Santa Margarita Pump Station.

Comment [F7]: Is there a reason the APCD PTO number is not shown for these? It is for the two previous stations. If PTO number is important, it should be consistently provided...otherwise leave out of document for all. 1

Comment [F8]: See above. 2

Figure 2-10 San Luis Obispo County Pump Stations - Pipeline from SMF to Rodeo Refinery

2.1.8 Utilities and Ancillary Systems

The onsite 5.8-megawatt electrical power generation system creates electricity from excess fuel gas. The system was installed in the mid-1990s after the Battles Gas Plant and the Guadalupe Oilfield, which historically used excess refinery fuel gas, shut down. The power generation unit is a boiler (B-505), which burns the excess fuel gas to produce high quality steam, which turns a steam turbine and a generator.

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Steam generated from the B-505 boiler normally does not supply the utility plant with steam. However, during a process upset, the B-505 does have the capability to supply steam, if needed.

2.1.9 Utility and Water Usage

The SMF uses fuel gas produced from the refining operation as a fuel source, primarily to fire heaters and boilers for process heat and steam. When refinery fuel gas cannot produce the necessary levels of steam and electricity, surplus gas is purchased from the Southern California Gas Company. Electrical requirements at the SMF are similarly met by the power-generating unit and purchases from Pacific Gas and Electric Company. Table 2-7 summarizes utility usage at the SMF.

Table 2-7 Santa Maria Facility Utility Usage

		2005	2006	2007	2008	2009
Electrical	Pacific Gas and Energy (MWhr)	23,587	23,316	19,293	22,736	23,273
	Onsite Generation (MWhr)	-	-	29,333	24,041	20,732
Natural Gas	Southern California Gas (mmscf)	220	372	214	226	397
	Onsite Fuel Gas (mmscf)	-	-	2,747	2,550	2,185
	Flaring of coker and non-coker gas (mmscf)	-	-	2	0.79	4.4
Diesel Fuel	(Gallons)	-	-	8,911	5,449	4,591

Notes: MWhr = mega watt hours, mmscf = million standard cubic feet
Source: ConocoPhillips

The SMF obtains all of its water from onsite wells. Although the volume of water taken from the wells is not directly metered, usage is estimated by ConocoPhillips at approximately 681[1] gpm. Water is primarily used for cooling, boiler feed for steam production, and process use such as coke drum cutting. The SMF currently uses less water than it has historically because of two changes:

Comment [e9]: Current use = 358 mil gallons/yr (see below) 358000000/525600 min/yr = 681 gpm [2]

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- The SMF installation of a reverse osmosis water treatment unit, which requires less water than the water softener unit it replaced.
- The March 2007 shutdown of the Carbon Plant that used water for cooling coke from the calcine process and green coke screening.

Prior to the calciner shutdown, the facility used approximately 459 million gallons of groundwater per year. Currently, usage is estimated to be 358 million gallons of groundwater per

year. The proposed changes of increased crude feed and blending semi-refined crude oil into the crude feed would not increase water use above the 5-year baseline (ConocoPhillips 2010).

Comment [k10]: COP prefers this sentence included. It was inadvertently omitted from the final project description section, although it was included in the April and June version that COP was able to review. 1

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2.1.10 Employees and Scheduling

Current general facility operations involve 95 employees and 65 contractors during the week and 40 employees on weekends. Typically 10 employees work at the facility during nighttime. General facility employees include office staff, operators, supervisors, and maintenance technicians.

Current normal operations truck visits (not including green coke or sulfur truck trips) to and from the facility average 10 per day. These truck trips are associated with normal materials shipments and employee duties.

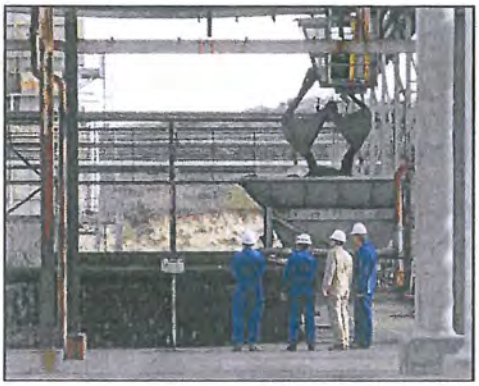
2.1.11 Chemical Usage and Waste

SMF procedures require cleaning any spilled petroleum material as soon as possible to minimize hydrocarbon emissions and odors. Cleanup materials are stored in closed containers in accordance with applicable regulations and disposed of as hazardous material in compliance with federal, state, and local regulations. The proposed change in crude throughput and semi-refined crude oil would not impact the baseline.

The SMF recovers and then processes oily waste onsite using the Mobil Oil Sludge Coking system. The Mobil Oil Company developed a process to dispose of refinery waste by injecting it into the coke bed during the quench cycle. During the delayed coking process, the solid waste and any organic liquids become dispersed throughout the coke mass. The combustible portion of the sludge becomes part of the coke. Oily wastes generated from equipment and cleaning activities are also sent off-site. These levels would not increase with the proposed throughput increase.

Figure 2-11 includes photographs of the SMF process.

Figure 2-11 SMF Operations Areas Photographs



Coke Transfer Area

Sulfur Pile

Petroleum Coke Piles and Loading Area

Santa Maria Pump Station Truck Unloading Rack

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2.2 Proposed Project Description

The two changes included in the Proposed Project are:

- Increasing the permitted volume of processed crude oil; and
- The ability to process previously refined gas/oil petroleum liquid under the definition of crude oil.

The first change, for the County permit, would increase the daily maximum limit of crude oil throughput by 10 percent, from 44,500 bpd to 48,950 bpd. Additionally, for the APCD permit, the 12-month rolling average of crude throughput would increase from 16,220,600 bpy to 17,866,750 bpy.

With the proposed increase in volume of crude oil, the increase in crude feed is expected to be derived from various sources depending on markets and availability.

The SMF wishes to bring in feed that includes previously refined gas/oil petroleum liquid in the same manner that it imports crude oil. The previously refined gas/oil petroleum liquid would be partially processed at another refinery, to remove coke and other heavier materials (similar to the ongoing process at the SMF). The previously refined gas/oil petroleum liquid would be trucked to the Santa Maria Pump Station and added to the pipeline in the same method currently used by several onshore oil fields with crude oil. Several different sources could potentially supply additional previously refined gas/oil petroleum liquid, including a refinery in Bakersfield and other unspecified locations.

The proposed increase in throughput would be independent of the proposed processing of previously refined gas/oil petroleum liquid. Crude oil processing could increase whether or not any previously refined gas/oil petroleum liquid would be delivered and processed at the SMF. Conversely, throughput volumes may not increase while some of the current throughput volumes would be replaced with previously refined gas/oil petroleum liquid. Regardless, no changes to the overall processing methods are proposed.

The Proposed Project would potentially cause changes at the SMF, including:

- an increase in volume of crude oil delivered to and shipped via pipeline from the Santa Maria Pump Station to the SMF;
- an increased volume of products leaving the SMF for the Rodeo Refinery via pipeline (including semi-refined crude oil or a combination of semi-refined crude oil and previously refined gas/oil petroleum);
- an increased volume of green coke and sulfur production; and
- an increase in shipments leaving the facility by either truck or railcar.

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Green coke production is proportional to the amount of crude throughput. Therefore, if previously refined gas/oil petroleum liquid was substituted for the crude oil, green coke production could decrease because previously refined gas/oil petroleum liquid has already been partially refined and most of the heavy coke-producing fraction from the previously refined gas/oil petroleum liquid has been removed. Green coke production is estimated at 22.85 short tons per thousand barrels of crude throughput. Typically, green coke has 10 to 12 percent moisture content with a required minimum material moisture content of eight percent under the Coke and Sulfur Storage and Handling Plan.

However, if crude oil volumes increase and minimal or no previously refined gas/oil petroleum liquid is used, green coke and sulfur production would increase.

In addition, the mix of rail versus truck transport affects the number of green coke truck trips, which could impact traffic and air quality in the vicinity. Under existing permits, the fraction of green coke transported by truck could increase while rail shipments could decrease, as there are no permit limits on the distribution of truck versus rail transportation levels. To assess potential

impacts under the worst-case scenario, it is assumed that the future production of green coke and sulfur would be transported by truck and rail at the historical highest levels of truck usage. Historic levels of coke transportation by rail range from 19 percent up to 39 percent between 2002 and 2009.

Table 2-8 shows defined baseline and future production levels. In Table 2-8, the baseline and Project assume that movements of petroleum coke associated with inventory reduction would remain the same as the previous 3-year average for the next few years before decreasing to zero.

Crude oil processed in 2009 was a historically low volume because of two planned maintenance shutdowns. However, coke shipments by rail were quite low in 2009, causing a historical high number of truck trips (when combined with the coke inventory reduction program).

Table 2-8 Baseline and Proposed Project Operations

Operational Parameter	Baseline/Current Operations	Proposed Project Operations	Notes
Crude Processing	• 16,242,500 bbl/year • 44,500 bpd peak	• 17,866,750 bbl/year • 48,950 bpd peak	Baseline is 44,500 bpd throughput. Proposed Project is the proposed allowable crude oil processing.
Coke Production and Transportation	• 498,990 tons total • 371,141 from crude production, 127,849 tons from inventory reduction • 10,994 truck trips/year associated with crude production • 5,110 truck trips associated with inventory reduction	• 536,104 tons total • 408,255 from crude production, 127,849 tons from inventory reduction • 12,261 truck trips/year associated with crude production • 5,110 truck trips associated with inventory reduction	Baseline is 44,500 bpd estimated total coke production from crude oil processing and inventory reduction. Proposed Project is based on an increase to the 17,866,750 bbl/year with all of the increased coke production transported by truck and including 3-year average of inventory reduction.
Sulfur Production	• 40,612 tons • 1,624 truck trips/year	• 44,673 tons • 1,787 truck trips/year	Baseline is the 44,500-bpd levels. Proposed Project is the 2009 sulfur/crude ratio applied to the 17,866,750 bbl/year.
Total Trucks	• 17,732 • 49 trucks/d/yr 1	• 19,162 • 53 trucks/d/yr 2	All trucks including inventory reduction

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Notes: bbl = barrels. Baseline coke transportation assumes 44,500 bpd throughput with 22.85 tons coke/kbbl crude and 19% of coke transported by rail (as in 2009). Proposed operations assume no calcine coke transportation, the same fraction of produced coke transported by rail as in 2009 and all increases in materials production transported by truck. Future sulfur production is based on the historical production levels of 2.5 tons sulfur/kbbl of crude and 25 tons per truck.

The current Department of Planning and Building permit limit of 44,500 bpd was evaluated in a CEQA document in a negative declaration in 1990. Therefore, all operations at the Refinery under the current Department of Planning and Building permit limit of 44,500 bpd would be covered by a CEQA analysis and the permit level of 44,500 bpd is considered the baseline for this analysis. To determine the operational parameters at these levels, historical operations related to rail/truck fraction, coke production per barrel of crude oil, and sulfur production per barrel of crude oil have been utilized to estimate the SMF operating parameters at the 44,500-bpd level.

The Proposed Project would not involve any construction or additions to the plot plan. Modifications to equipment and the facility would be made to comply with best available control technologies, if warranted, as determined by SLOAPCD. This would likely include modifications to:

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- combustion control equipment for nitrogen oxide emissions; and
- other refinery equipment for possible reductions in sulfur oxides and hydrocarbon emissions.

Refinery fuel gas would increase by a ratio similar to the increase in crude throughput. This would decrease electricity purchased from Pacific Gas and Electric Company and would decrease natural gas demand from Southern California Gas Company. Onsite SMF fuel gas production would increase to 3,171 million standard cubic feet per year. The increase in fuel gas would be used to fire the heaters and produce electricity with the electrical power-generating unit. The use of diesel fuel and flaring is not expected to increase with the throughput increase.

The use of water is not directly proportional to crude oil rates; ConocoPhillips estimates water use may increase by one percent.

SECTION 3.0

CUMULATIVE PROJECTS DESCRIPTION

NO REDLINE FOR THIS SECTION

4.0 Environmental Analysis

Introduction to Environmental Analysis

Chapter 4 examines the potential environmental impacts of the Proposed Project. This chapter includes analyses of these environmental issue areas:

4.1 Air Quality

4.2 Public Safety and Hazardous Materials

4.3 Noise and Vibration

4.4 Public Services

4.5 Land Use and Policy Consistency Analysis

4.6 Transportation and Circulation

4.7 Water Resources

4.8 Other Issue Areas

Each environmental issue area analyzed in this document provides background information and describes the environmental setting (baseline conditions) to help the reader understand the underlying conditions against which an impact would be evaluated. In addition, each section describes how an impact on those underlying conditions is determined "significant" or "less than significant." Finally, the individual sections recommend mitigation measures to reduce significant impacts. Throughout Section 4, both significant impacts and corresponding mitigation measures are identified with a bold letter-number designation (e.g., impact **AQ.1** and mitigation measure **AQ-1**).

Effects Not Found to be Significant

Based on an initial review and analysis, the Proposed Project would likely have a less than significant impact, or no impact, on these environmental issue areas:

- Aesthetics. No changes would be made to the Santa Maria Refinery that would change its appearance from public areas or would introduce additional use, glare, or night lighting or impact geological features of the area. Additionally, the sound wall proposed in mitigation measure N-1.1 for the Santa Margarita Pump Station would not have a significant visual impact on surrounding properties and, therefore, would not require additional analysis or mitigation. The sound wall was installed voluntarily by ConocoPhillips, following discussions in public workshops on this project.[1] Therefore, impacts would be less than significant.

- Agricultural Resources. The Proposed Project would not convert existing agricultural land to other uses, or impair agricultural use of nearby lands, or conflict with existing zoning. Impacts would, therefore, be considered less than significant.

- Cultural Resources. The Proposed Project would not disturb pre-historic, historic, or paleontological resources because no excavation or grading would be expected. Impacts would, therefore, be considered less than significant.

- Geology and Soils. The Proposed Project would not involve soil movement or grading, and, therefore, would not result in exposure to or production of unstable earth conditions, result in soil erosion, topographic changes, loss of topsoil, or unstable soil conditions. The Project would also not change rates of soil absorption, or the amount or direction of surface runoff or change the drainage patterns. The Santa Maria Refinery is not located in a flood hazard zone, according to County maps, and is not located in a California Department of Mines & Geology Earthquake Fault Zone. Impacts to geology and soils would, therefore, be less than significant.

- Population and Housing. The Proposed Project would not introduce any additional employees or substantial construction to the area and would, therefore, not induce substantial growth in an area either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure), would not displace existing housing or people, requiring construction of replacement housing elsewhere, or create the need for substantial new housing in the area. Impacts would, therefore, be considered less than significant.

- Recreation. The Proposed Project would not increase the demand for parks or trails or affect the access to recreational areas. Therefore, impacts would be considered less than significant.

- Biological Resources. The Proposed Project would not increase impacts to biological resources compared to the current operations at the Santa Maria Facility. Therefore, impacts of the Proposed Project would be less than significant.

Assessment Methodology

The analysis of each issue area begins with an examination of the existing physical setting (baseline conditions as determined pursuant to Section 15125(a) of the California Environmental Quality Act [CEQA] Guidelines) that may be affected by the Proposed Project. The effects of the Proposed Project are defined as changes to the environmental setting attributable to project components or operation.

Significance Criteria

Significance criteria are identified for each environmental issue area. The significance criteria serve as benchmarks for determining if a component action will result in a significant adverse environmental impact when evaluated against the baseline. According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means "a substantial, or potentially

substantial, adverse change in any of the physical conditions within the area affected by the project."

Impact Analysis

Impacts are classified as:

- **Class I** (significant adverse impact that remains significant after mitigation);
- **Class II** (significant adverse impact that can be eliminated or reduced below an issue's significance criteria);
- **Class III** (adverse impact that does not meet or exceed an issue's significance criteria); or
- **Class IV** (beneficial impact).

A determination will be made, based on the analysis of any impact within each affected environmental issue area and compliance with any recommended mitigation measure(s), of the level of impact remaining in comparison to the pertinent significance criteria. If the impact remains significant, at or above the significance criteria, it is deemed to be Class I. If a "significant adverse impact" is reduced, based on compliance with mitigation, to a level less than the pertinent significance criteria, it is determined to no longer have a significant effect on the environment, i.e., to be "less than significant" (Class II). If an action creates an adverse impact beyond the baseline condition, but such impact does not meet or exceed the pertinent significance criteria, it is determined to be adverse, but less than significant (Class III). An action that provides an improvement to an environmental issue area in comparison to the baseline information is recognized as a beneficial impact (Class IV).

Formulation of Mitigation Measures and Mitigation Monitoring Program

When significant impacts are identified, feasible mitigation measures are formulated to eliminate or reduce the intensity of the impacts and focus on the protection of sensitive resources. The effectiveness of a mitigation measure is subsequently determined by evaluating the impact remaining after its application. Those impacts meeting or exceeding the impact significance criteria after mitigation are considered residual impacts that remain significant (Class I). Implementation of more than one mitigation measure may be needed to reduce an impact below a level of significance. The mitigation measures recommended in this document are identified in the impact sections and presented in a Mitigation Monitoring Program, provided in Section 8.0. If any measures are incorporated as part of an applicant's project design, they are not considered mitigation measures under CEQA. If they eliminate or reduce a potentially significant impact to a level below the significance criteria, they eliminate the potential for that significant impact since the "measure" is a component of the action.

Impacts of Alternatives

Section 5.0, Alternatives, identifies alternatives to the Proposed Project. Each issue area in Chapter 4 presents the impact analysis for each alternative scenario. The Executive Summary outlines the collective impacts of each alternative in comparison with the impacts of the Proposed Project.

Cumulative Projects Impact Analysis

Each issue area in Chapter 4 presents the cumulative impact scenario, which identifies the potential impacts of the Project that might not be significant when considered alone, but that might contribute to a significant impact in conjunction with the other projects. The list and description of cumulative projects is included in Section 3.0, Cumulative Projects.

4.1 Air Quality

This section discusses operational emissions and odors that could result from the Proposed Project. The project does not involve any construction, so construction-related impacts are not considered. The section also discusses air toxic emissions as well as greenhouse gas emissions. Appendix I includes a list of acronyms.

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Emission rates were generated using standard emission factors and use rates contained within the Urban Emissions (URBEMIS) modeling program, as applicable. Emission calculations are included in Appendix B. As described in Section 2.0, Project Description, the Proposed Project would include increasing the permitted volume of processed crude oil and processing previously refined gas/oil petroleum liquid under the definition of crude oil. Some activities would occur daily, while others would occur sporadically. This analysis is intended to provide a reasonable worst-case scenario of potential air emissions resulting from the proposed activities and recommends mitigation to reduce any significant impacts to less than significant levels.

4.1.1 Environmental Setting

San Luis Obispo County (SLOC) is part of the South Central Coast Air Basin, which also includes Santa Barbara and Ventura counties. The climate of the region is strongly influenced by its proximity to the Pacific Ocean. Airflow around the County plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific high-pressure system and other global weather patterns, topographical factors, and circulation patterns that result from temperature differences between the land and the sea.

The land area of San Luis Obispo County is approximately 3,316 square miles, encompassing varied vegetation, topography, and climate. From a geographical and meteorological standpoint, the County can be divided into three general regions: the Coastal Plateau, the Upper Salinas River Valley, and the East County Plain. Air quality in each of these regions is characteristically different, although the physical features that divide them provide only limited barriers to the transport of pollutants between the regions.

The Proposed Project is within the Coastal Plateau. Approximately 75 percent of the County population, and a corresponding portion of the commercial and industrial facilities, are also within the Coastal Plateau. Due to higher population density and closer spacing of urban areas, emissions of air pollutants per unit area are generally higher in this region than in the other two regions of the county.

4.1.1.1 Air Quality Monitoring

Ten air-quality monitoring stations measure San Luis Obispo County's air quality (Grover Beach only monitors wind speed and direction, no air quality). The Air Pollution Control District (APCD) operates seven permanent stations at Nipomo Regional Park, Grover Beach, Morro Bay, Atascadero, Red Hills (near Shandon in eastern San Luis Obispo County), Arroyo Grande, and the Carrizo Plain. The California Air Resources Board (CARB) operates two additional stations

in the cities of San Luis Obispo and Paso Robles. One station on the Nipomo Mesa is operated by the APCD for the ConocoPhillips Refinery.

Although the Arroyo Grande station is the closest to the Proposed Project, it only monitors particulate matter (PM10 and PM2.5). Therefore, the closest APCD station to the Proposed Project area that monitors for Project-related pollutants is the Nipomo Regional Park monitoring station, approximately 5 miles east of the Proposed Project area. The Nipomo-Guadalupe monitoring station, approximately 1 mile southeast of the Proposed Project Site, is examined in this report for particulate matter, sulfur dioxide, and wind speed and direction information.

Air quality monitoring is rigorously controlled by federal and state quality assurance and control procedures to ensure data validity. Gaseous pollutant levels are measured continuously and averaged every hour, 24 hours per day. Particulate pollutants are generally sampled by filter techniques over averaging periods of 3 to 24 hours. PM10 and inhalable particulate matter that is 2.5 microns or less in size (PM2.5) are sampled for 24 hours every sixth day on the same schedule nationwide. Table 4.1-1 outlines the federal and state standards for ambient air quality.

Specific Air Pollutants

Carbon Monoxide (CO): CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs in the body. The ambient air quality standard for CO is intended to protect people whose medical condition already compromises their circulatory system's ability to deliver oxygen.

Nitrogen Dioxide (NO_2): NO_2 is a brownish gas formed in the atmosphere through a rapid reaction of the colorless gas nitric oxide (NO) with atmospheric oxygen. NO and NO_2 are collectively referred to as nitrogen oxides (NOx). NO_2 can cause respiratory irritation and constriction of the airways, making breathing more difficult.

Sulfur Dioxide (SO_2): SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms and breathing difficulty.

PM_{10}, the coarse fraction of suspended particulate matter measuring 10 microns or less in diameter, includes a complex mixture of man-made and natural substances including sulfates, nitrates, metals, elemental carbon, sea salt, soil, organics, and other materials. PM_{10} may have adverse health impacts because these microscopic particles can penetrate the respiratory system. In some cases, the particulates themselves may cause actual damage to the alveoli of the lungs or they may contain adsorbed substances that are injurious.

Ambient PM_{10} concentrations have been primarily a localized issue of concern in San Luis Obispo County, including Paso Robles, San Luis Obispo, Morro Bay, and Nipomo. Exceedances in these areas are the major impetus for the county's nonattainment designation for the state PM_{10} standard. The major sources for PM_{10} are mineral quarries, grading, demolition, agricultural tilling, road dust, and vehicle exhaust.

The $PM_{2.5}$ standard is a subset of the PM_{10} standard. In addition to the health effects of PM_{10}, exposure to $PM_{2.5}$ may result in increased respiratory symptoms, disease, and decreased lung function.

In addition to primary criteria pollutants, the APCD monitors ozone at various locations throughout the region. Unlike primary criteria pollutants emitted directly from an emissions source, ozone is a secondary pollutant. Ozone is formed in the atmosphere through the photochemical reaction of volatile organic compounds (VOC), NOx, oxygen, and other hydrocarbon materials with sunlight.

Ozone is a deep lung irritant, causing the passages to become inflamed and swollen. Exposure to ozone alters respiration, most characteristically with shallow, rapid breathing and a decrease in pulmonary performance. Ozone also reduces the respiratory system's ability to fight infection and remove foreign particles.

Ozone exists both at ground level, where it is considered a pollutant with harmful effects and at higher elevations in the lower portion of the stratosphere from approximately 13 to 40 kilometers above Earth, where it absorbs more than 95 percent of the sun's ultraviolet light providing a beneficial effect.

Combustion byproducts reacting with sunlight and ambient conditions primarily generate ground-level ambient ozone. Areas where ozone violations primarily occur are the northern and eastern portions of the county, where summer temperatures are high. Ozone levels exceeding the state standard have been measured in Paso Robles, the Carrizo Plain, and Atascadero in recent years. In addition, ozone is carried into San Luis Obispo County from upwind regions of the state.

Because concentrations of ozone and PM_{10} exceed state health-based standards, San Luis Obispo County has been designated as a non-attainment area for these two pollutants. Table 4.1-2 shows the last 3 years of monitoring data for ozone, NO_2, and PM_{10} for the Nipomo monitoring station, approximately 5 miles east of the Refinery site (at West Tefft Street and Pomeroy Road). Also shown are PM and SO_2 monitoring results for the Nipomo-Mesa and Nipomo-Guadalupe sites, which are within 1 mile of the Refinery to the east. The federal PM_{10} and ozone standards were not exceeded in any of these years. However, PM10 and ozone exceeded the state standard. San Luis Obispo County attainment status is pending EPA action and the new ozone standard is scheduled for release in the near future. Table 4.1-3 shows the attainment status of criteria pollutants throughout the entire South Central Coast Air Basin.

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Table 4.1-1 State and National Criteria Air Pollutant Standards, Effects, and Sources

Air Pollutant	State Standard (concentration, averaging time)	Federal Primary Standard (concentration, averaging time)	Most Relevant Effects
Ozone	0.09 ppm, 1-hour average 0.070 ppm, 8-hour	0.075 ppm, 8-hour average*	(a) Short-term exposures: (1) Pulmonary function decrements and localized lung edema in humans and animals (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage.
Carbon Monoxide	9.0 ppm, 8-hour average 20 ppm, 1-hour average	9 ppm, 8-hour average 35 ppm, 1-hour average	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses.
Nitrogen Dioxide	0.18 ppm, 1-hour average, 0.03 ppm, annual average	0.053 ppm 0.10 ppm 98th percentile, 3-year average	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration.
Sulfur Dioxide	0.04 ppm, 24-hour average 0.25 ppm, 1-hour average	0.075 ppm, 1-hour, 99th percentile 3-year average 0.14 ppm24-hour 0.03 ppm annual arithmetic mean	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM10)	20 µg/m3, annual arithmetic mean 50 µg/m3, 24-hour average	150 µg/m3 , 24-hour average	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children.
Suspended Particulate Matter (PM2.5)	12 µg/m3 , annual arithmetic mean	15 µg/m3, annual arithmetic mean 35 µg/m3, 24-hour average	Decreased lung function from exposures and exacerbation of symptoms in sensitive patients with respiratory disease, elderly, children.

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Table 4.1-1 State and National Criteria Air Pollutant Standards, Effects, and Sources

Air Pollutant	State Standard (concentration, averaging time)	Federal Primary Standard (concentration, averaging time)	Most Relevant Effects
Sulfates	25 µg/m3, 24-hour average	No federal standard	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage due to corrosion.
Visibility- Reducing Particles	In sufficient amount to give an extinction coefficient of 0.23 per kilometers (visual range of 10 miles or more) with relative humidity less than 70%, 8-hour average (10 a.m. to 6 p.m. PST)	No federal standard	Reduction of visibility, aesthetic impact and impacts due to particulates (see above)
Hydrogen Sulfide	0.03 ppm, 1-hour average	No federal standard	Odor annoyance.

Note: µg/m3 = micrograms per cubic meter.
* Effective May 27, 2008. Was 0.08 ppm prior
Source: SLOC APCD 2009 and CARB 9/8/2010

Comment [e1]: Lead is not emitted here. Why include it? 2

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Deleted: 1.5 µg/m3, 30-day average 4

Deleted: 0.15 µg/m3, roll 3-month average 1.5 µg/m3, calendar quarter 5

Deleted: (a) Increased body burden; (b) Impairment of blood formation and nerve conduction. 6

Comment [e2]: Vinyl Chloride is not emitted here. Why include it? 7

Deleted: Vinyl Chloride 8

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Table 4.1-2 Monitoring Results at the Nipomo Monitoring Station

Pollutant	Standard	2007	2008	2009
Ozone				
Maximum 1-hour concentration (ppm)		0.072	0.092	.071
Number days exceeded: State	> 0.09 ppm/1-hour	0	0	0
Max 8-hour concentration (ppm)		0.068	0.072	.067
Number days exceeded: State	> 0.07 ppm/8-hour	0	1	0
Number days exceeded: Federal	> 0.075 ppm/8-hour	0	0	0
Particulates (PM10)				
Maximum 24-hour concentration (µg/m3)		82	58	58
Number days exceeded: State	> 50 µg/m3/24-hour	12.2	6.1	17.9
Number days exceeded: Federal	> 150 µg/m3/24-hour	0	0	0
Maximum 24-hour concentration (µg/m3) – Nipomo-Guadalupe		133	91	120
Number days exceeded: State	> 50 µg/m3/24-hour	-	39.7	53.8
Number days exceeded: Federal	> 150 µg/m3/24-hour	-	0	0
Nitrogen Dioxide (NO_2)				
Daily Maximum NO_2 (ppm)		0.034	0.05	0.035
Number days exceeded: State	> 0.18 ppm/1-hour	0	0	0
Sulfur Dioxide (SO_2)				
Maximum 1-hour concentration, ppm – Nipomo-Guadalupe		-	.047	.017

Notes: The Nipomo Regional Park Station monitors NO2, ozone and PM10. Nipomo Guadalupe values used for SO2 and PM10 Source: CARB website Air Quality Data, SLOC APCD 2008/2009 Annual reports

The CARB meteorological data from the Nipomo-Guadalupe monitoring station, approximately 1 mile southeast of the Proposed Project Site, is the closest station to the Project Site that has detailed wind direction and speed information. This data was plotted into a wind rose (Figure 4.1-1) to demonstrate the predominant wind direction and speeds at the Project site. Figure 4.1-1 shows that the predominate wind blows from the west and northwest 36 percent of the time, and from the east (east and southeast) less than 20 percent of the time during 2009. Wind speeds averaged approximately 5 miles per hour, with periods of stronger winds above 20 miles per hour occurring less than one percent of the time.

Table 4.1-3 Attainment Status of Criteria Pollutants in the South Central Coast Air Basin

Pollutant	State	Federal
O3 – 1-hour	Non-attainment	Pending
O3 – 8-hour	Non-attainment	Attainment
PM_{10}	Non-attainment	Attainment
$PM_{2.5}$	Attainment	Attainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
All others	Attainment/Unclassified	Attainment/Unclassified

Note: The San Luis Obispo County attainment status is pending EPA action and the new ozone standard is scheduled for release in the near future. Source: CARB

4.1.1.2 Countywide Emissions Inventory

This section summarizes the countywide emission inventory.

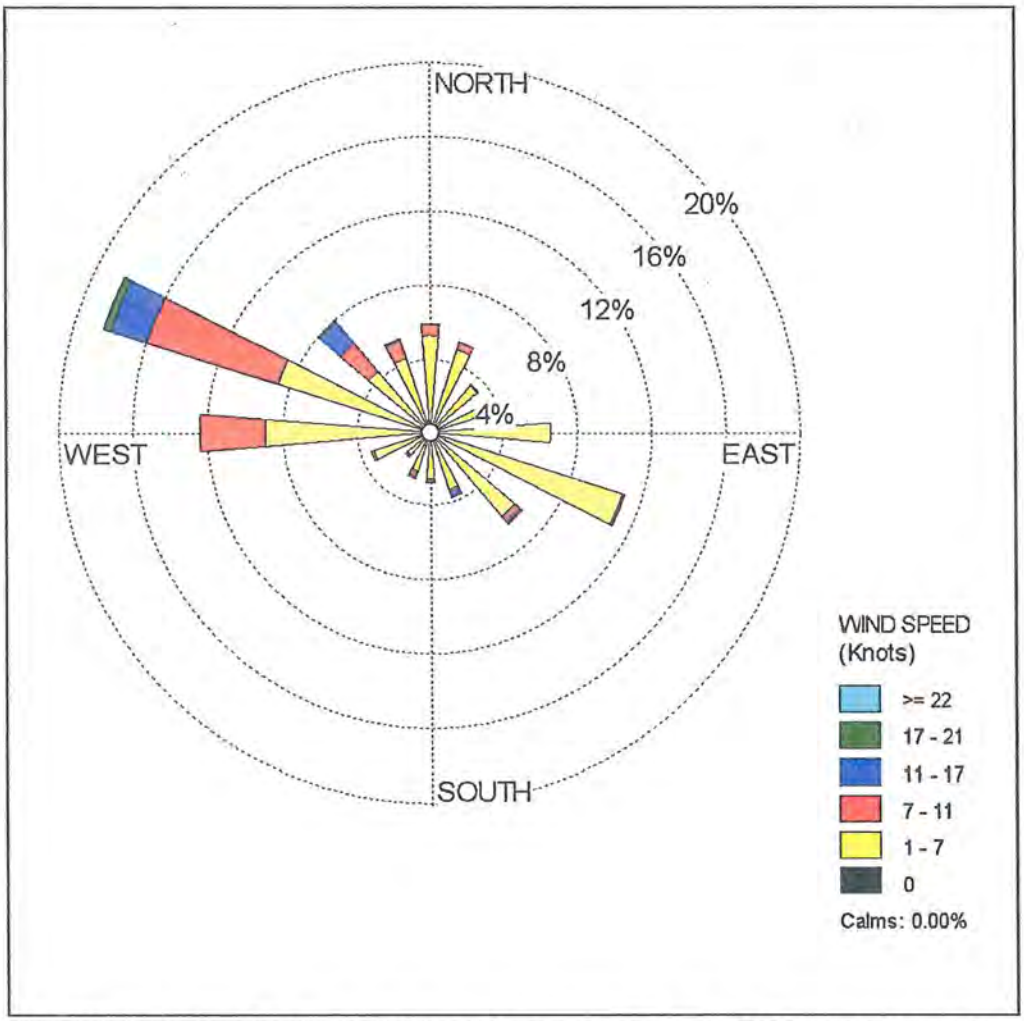
Countywide Criteria Pollutant Emission inventory

On a regional basis, ozone is the criteria pollutant of greatest concern in San Luis Obispo County, particularly within the Coastal Plateau. Ozone is a secondary pollutant, formed in the atmosphere by complex photochemical reactions involving the precursor pollutants of nitrogen oxides (NOx) and reactive organic gasses (ROG) and sunlight. According to County emission records, the primary contributors to ozone are categorized in Table 4.1-4 as "Other Mobile Sources" (ships/boats) followed by "On-road Motor Vehicles". Contributions from the "fuel combustion" category,[1] which we assume means refinery stationary sources,[2] are de minimis relative to the other ozone precursor sources in this county.[3]

The amount of ozone formed is dependent upon both the ambient concentration of the chemical precursors and the intensity and duration of sunlight. Consequently, ambient ozone concentration tends to vary seasonally with the weather.

NOx is emitted primarily from the combustion of fossil fuels; ROG emissions are also generated by fossil fuel combustion and through the evaporation of petroleum products. Emissions of ROG and NOx are fairly equally divided between mobile and stationary sources in the county. Motor vehicles and electrical generation produce the majority of NOx emissions. Local concentrations of inert (non-reactive) pollutants (carbon monoxide, ozone, PM_{10}) are primarily influenced by nearby sources of emissions and, thus, vary considerably between monitoring stations. SO_2 emissions are mainly concentrated around areas where large quantities of fossil fuels are either burned in electrical production or petroleum products are refined (i.e., SO_2 levels at the Nipomo Mesa and the Morro Bay power plant).

Figure 4.1-1 Nipomo-Guadalupe Meteorological Station Wind Rose – 2009



Note: Wind rose shows the direction that the wind is coming from. Source: CARB meteorological data, Nipomo-Guadalupe monitoring station 2009

Although large sources are surveyed and updated each year, the APCD performs an emissions inventory for the majority of permitted sources every 3 years. The last complete inventory was conducted for 2007 emissions; Table 4.1-4 shows these emissions for ozone precursors and particulate matter. As seen in the table, the largest sources of ozone precursors are other mobile sources, on-road vehicles, and wildfires. The largest sources of particulate matter are wildfires, road dust, construction and demolition, and residential fuel combustion. Of the fifteen categories

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recording PM emissions in the County, the Petroleum Refining category records the least emissions. 1

A study performed by the APCD, the South County Phase 2 Particulate Study, evaluated whether impacts from off-road vehicle activities at the Oceano Dunes State Vehicle Recreational Area (SVRA), the ConocoPhillips Refinery coke piles, and adjacent agricultural fields were contributing to the particulate problems on the Nipomo Mesa (SLOC APCD 2010). The SVRA is upwind of the Nipomo Mesa; the study data includes the SVRA in the area that is the major source of particulates on the Nipomo Mesa. Average weekend and weekday particulate measurements taken on the Nipomo Mesa over the past 12 years were analyzed to determine whether there were higher PM levels on the weekends, which would be relevant to the typically higher weekend off-road vehicle activity at the SVRA. The analysis found higher weekend concentrations at one monitoring station but the data were not conclusive. The Phase 2 portion of the study concluded that off-road vehicle activity in the SVRA is a major contributing factor to the PM concentrations observed on the Nipomo Mesa and that neither the petroleum coke piles at the ConocoPhillips facility nor agricultural fields or activities in and around the area are a significant source of ambient PM on the Nipomo Mesa.

The study indicates that off road vehicle activity on the dunes is known to cause de-vegetation, destabilization of dune structure, and destruction of the natural crust on the dune surface. All of these increase the ability of winds to entrain sand particles from the dunes and carry them to the Nipomo Mesa, representing an indirect emissions impact from the vehicles. The data strongly suggests this is the primary cause of the high PM levels measured on the Nipomo Mesa during episode days.

Regardless of whether human activities or natural sources are responsible, the study documents the frequent occurrence of unhealthful particulate levels on the Nipomo Mesa. Even though the composition of the particulates is predominately natural crustal particles, the health implications are not lessened. All fine airborne particulate matter, regardless of composition, can cause respiratory distress when inhaled, especially to the very young, the elderly, and those with compromised respiratory systems. In addition, sand particles from the Oceano Dunes 3 are high in crystalline silica, a known carcinogen with a high risk factor.

Comment [F3]: "Sand" is a particle size fraction. Sand particles may be of various composition and are not always high in crystalline silica. However, the sand particles from the Nipomo dunes are high in crystalline silica. I think that would make this a better statement. 2

Table 4.1-4 San Luis Obispo County Ozone Precursors and PM Emissions by Source

Emission Sources of Ozone Precursors	ROG (tpy)	ROG %	NOx (tpy)	NOx %
Fuel Combustion	64	1	586	4
Waste Disposal	8.1	0	1.3	0
Cleaning/Surface Coating	1,023	11	0.0	0
Petroleum Production and Marketing	372	4	13	0
Industrial Processes	101	1	37	0
Solvent Evaporation	604	6	0.0	0
Miscellaneous Processes	1,445	15	258	2
On-Road Motor Vehicles	2,623	27	4,448	33
Other Mobile Sources	1,837	19	7,563*	56
Wildfires	1,581	16	715	5
Total Ozone Precursor	9,657**		13,620	
Emission Sources of Particulate Matter	**PM_{10} (tpy)**	**PM_{10} %**	**$PM_{2.5}$ (tpy)**	**$PM_{2.5}$ %**
Wildfires	2,307	20	1,956	46
Ships & Commercial Boats	366	3	356	8
Cooking	123	1	74	2
Waste Burning & Disposal	34	0	32	1
Fugitive Wind Blown Dust	639	6	106	2
Unpaved Road Dust	3,226	28	321	7
Paved Road Dust	1,789	16	266	6
Construction & Demolition	1,486	13	150	3
Livestock	723	6	150	3
Residential Fuel Combustion	631	6	610	14
Mineral Processes	87	1	-	-
Farm Equipment	-	-	62	1
Off-Road Equipment	-	-	91	2
On-Road Motor Vehicle	-	-	114	3
Petroleum Refining	-	-	9	0
Total PM	11,410		4,298	

Notes: * 4,587 tons of this is ships and commercial boats – ARB area source offshore ** Excludes biogenic and geogenic sources Source: SLOC APCD 2007 Emission Inventory

Comment [F4]: We are unsure what "geogenic" means and could not locate a definition. 1

Comment [F5]: Please Also Note under the Table that PM2.5 is a subset of PM10. 2

Countywide Air Toxics

Air toxics are substances that may cause or contribute to an increase in cancer or serious illness, such as respiratory disease. The federal 1990 Clean Air Act Amendments (CAAA) set up a new nationwide air toxics control program. The federal program focuses on larger industrial sources that are of the highest national priority, such as chemical manufacturers. State and local air pollution control agencies adopt measures to minimize Californians' exposure to toxic air contaminants (TAC). The State of California regulates TAC in several ways. The Toxic Air Contaminant Identification and Control Act (AB1807-1983) created a program to reduce the health risks from air toxics. This law expanded CARB authority to evaluate and control air toxics. An additional state law, the Air Toxics "Hot Spots" Information and Assessment Act (AB2588-1987) supplements the original legislation by requiring a statewide air toxics inventory and notifying local residents of significant risks from nearby sources. A 1992 amendment to the law (SB1731) requires that risks be reduced from these sources.

The CARB has identified asbestos as a TAC. In its natural state, asbestos occurs throughout many areas. Serpentine is a very common rock type in California and was identified by the CARB as having the potential to contain naturally occurring asbestos. Under the CARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, a geologic analysis is necessary to determine if serpentine rock is present prior to any grading activities at a site[1]. Grading projects larger than 1 acre in serpentine rock would require prior APCD approval of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program.

Serpentine rock is found in many regions of San Luis Obispo County, including coastal areas, as far inland as Paso Robles, and the extreme eastern area along the San Andreas Fault. Figure 4.12 shows areas subject to the naturally occurring asbestos ATCM requirements. The Project Site is within one of these general areas that may include asbestos-containing rock. This project does not involve any construction and therefore will not disturb any of these naturally occurring deposits and, as a result will not produce TAC from such activity. [2]

4.1.1.3 Greenhouse Gasses

The California legislature concluded that global climate change poses significant adverse effects to the environment (Assembly Bill [AB] 32, the California Global Warming Solutions Act of 2006). Consequently, the following sections analyze potential for greenhouse gas (GHG) emissions from the Proposed Project to adversely affect the local, regional or global climate. [6]

Global climate change is a change in the average weather of the earth, measured by wind patterns, storms, precipitation, and temperature. Although historical records show that dramatic fluctuations in temperature have occurred in the past, such as during previous ice ages, some data indicate that the current temperature record differs from previous climate changes in both rate and magnitude (AEP 2007).

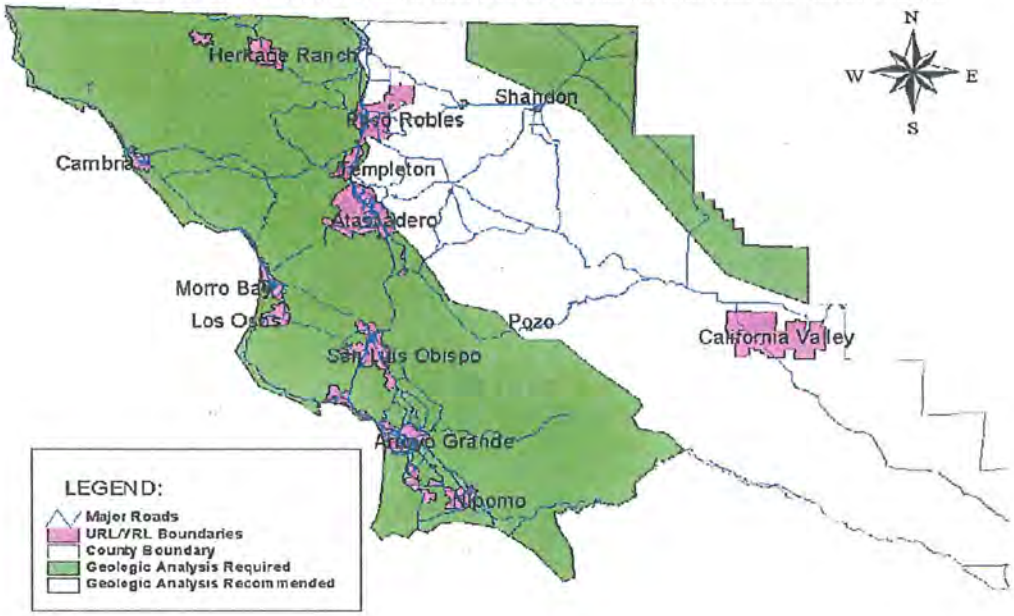
Deleted: In addition [3]

Deleted: , the global scientific community has expressed a high confidence that climate change is man-made (i.e., caused by humans) and that [4]

Deleted: climate change could lead to adverse changes around the globe (Intergovernmental Panel on Climate Change Climate, IPCC 2007a) [5]

Deleted: climate change emissions that may occur while implementing the Proposed Project. ¶ [7]

Figure 4.1-2 Areas Requiring Asbestos ATCM Geological Analysis and Requirements



Source: SLOC APCD Website

Global climate change caused by man-made GHG emission is currently one of the most widely debated scientific, economic, and political issues in the United States. Despite this debate, in terms of California Environmental Quality Act (CEQA) analysis, jurisdictions have developed significance criteria and directed CEQA documents to analyze emissions of GHG.

Deleted: greenhouse gasses (GHG)

Deleted: Although many groups agree with the conclusions of the Intergovernmental Panel on Climate Change and the CARB, many groups fee the work is lacking. However,

Climate Change Background

GHG include any gas that absorbs infrared radiation in the atmosphere. GHG include, but are not limited to, water vapor, carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), and fluorocarbons. The warming potential of different types of GHG varies. The global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere. Since GHG absorb different amounts of heat, a common reference gas, CO2, is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as CO2 equivalent, or CO2e. CO2e is the amount of GHG emitted multiplied by the global warming potential. The global warming potential of CO2 is therefore defined as one.

The increase of GHG emissions has lead to the trapping and buildup of heat in the atmosphere near the earth's surface, commonly known as the greenhouse effect. Put another way, the amount of GHG in the atmosphere regulates the earth's temperature. Without natural GHG, the earth's surface would be cooler (CARB 2006). Human activity, including the burning of fossil fuels, is

contributing to increased concentrations of greenhouse gases in the atmosphere that can lead to adverse changes in global climate. Unlike criteria air pollutants and TAC, which are pollutants of regional and local concern, GHG are globally mixed pollutants. As such, it is not possible to attribute any climate impact to a single source of emissions.

According to the CARB, potential climate change impacts in California may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (CARB 2006, 2007). Several recent studies have explored the possible negative consequences of climate change in California. These reports acknowledge that climate scientists' understanding of the complex global climate system and the interplay of the various internal and external factors that affect climate change remain too limited to yield scientifically valid conclusions on a localized scale. Substantial work at the national and international level has evaluated climatic impacts, but far less information is available on regional and local impacts. In addition, projecting regional impacts of climate change and variability relies on large-scale scenarios of changing climate parameters, using information that is typically at too coarse a scale to accurately assess regional impacts (Kiparsky 2003).

The following example illustrates the difficulty of analyzing climate change on a regional or local level. Climate change modeling consistently predicts increasing temperatures; however, the ways that increasing temperatures will affect precipitation is not well understood. Studies have found "considerable uncertainty about precise impacts of climate change on California hydrology and water resources will remain until we have more precise and consistent information about how precipitation patterns, timing, and intensity will change" (Kiparsky 2003).

Even assuming that climate change leads to long-term increases in precipitation, climate change impact analysis is further complicated because no studies have identified or quantified the runoff impacts in particular watersheds of an increase in precipitation. Also, little is known about the effects on groundwater recharge and water quality. Higher rainfall could lead to greater groundwater recharge, although reductions in spring runoff and higher evapotranspiration could reduce the amount of water available for recharge (Kiparsky 2003). The Department of Water Resources and the California Energy Commission have also noted the uncertain effect of climate change on water supply. In light of this dearth of accurate scientific information, analyzing the potential impacts a Project would have on the regional or local environment is inherently complicated and only limited conclusions can be drawn. Therefore, the analysis conducted in this report quantifies the GHG emissions levels but does not attempt to predict actual impacts associated with these emissions.

Types of Greenhouse Gasses

Water vapor is the most abundant and variable GHG in the atmosphere. It is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Evaporation from the oceans is the main source of water vapor (approximately 85 percent). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from ice and snow, and transpiration from plant leaves (AEP 2007).

Comment [w6]: This text is a quote from the COP climate change position. 1

Deleted: Emissions from human activities, such as electricity production and vehicle operation, have increased the emissions of these gases into the atmosphere. Emissions of GHG in excess of natural ambient concentrations are thought to be responsible for the enhancement of the greenhouse effect and acceleration of climate change 3

Deleted: global pollutants and climate change is a global issue. ¶ 5

Deleted: Climate changes could lead to various changes in weather and rainfall patterns over time. A 7

Deleted: such 8

Carbon dioxide is an odorless, colorless GHG with a GWP of 1. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanoes. Man-made sources of carbon dioxide include burning fuels, such as coal, oil, natural gas, and wood. The interaction of man-made sources and natural sources of GHG and how they contribute to the atmospheric levels of GHG is a complex issue. Current concentrations of CO2 in the atmosphere are approximately 379 parts per million (ppm); some say that concentrations may increase to 1,130 CO2e ppm by 2100 as a direct result of man-made sources (IPCC 2007). Some predict that this will result in an average global temperature rise of at least 7.2 degrees Fahrenheit by 2100 (IPCC 2007).

Methane, a gas, is the main component of natural gas used in homes and has a GWP of approximately 21. Decaying organic matter in forests and oceans is a natural source of methane. Man-made sources include landfills, fermentation of manure, and cattle. Geological deposits known as natural gas fields contain methane, which is extracted for fuel.

Nitrous oxide (N2O), also known as laughing gas, is a colorless gas with a GWP of approximately 310. Nitrous oxide is produced by microbial processes in soil and water, including reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (e.g., nylon production, nitric acid production) also emit N2O. Nitrous oxide is used in rocket engines, as an aerosol spray propellant, and in race cars. During combustion, NOx (NOx is a generic term for mono-nitrogen oxides, NO and NO2) is produced as a criteria pollutant and is not the same as N2O. Very small quantities of N2O may be formed during fuel combustion by the reaction of nitrogen and oxygen (API 2004).

Chlorofluorocarbons are synthetic gases formed by replacing all hydrogen atoms in methane or ethane with chlorine or fluorine atoms. Chlorofluorocarbons are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at the earth's surface). Chlorofluorocarbons were first synthesized in 1928 as refrigerants, aerosol propellants, and cleaning solvents. However, they destroy stratospheric ozone and the Montreal Protocol stopped their production in the 1990s. Fluorocarbons have a global warming potential between 140 and 11,700, with HFC-152a at the low end and HFC-23 at the higher end.

Sulfur hexafluoride (SF6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. Its global warming potential of 23,900 is the highest of any gas. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Table 4.1-5 shows a range of gasses that contribute to GHG warming with their associated global warming potential. The table also shows their estimated lifetime in the atmosphere and the range in global warming potential over 20, 100, and 500 years.

Table 4.1-5 Global Warming Potential of Various Gasses

Gas	Life in the Atmosphere (years)	20-year GWP (average)	100-year GWP (average)	500-year GWP (average)
Carbon Dioxide	50-200	1	1	1
Methane	12	21	56	6.5
Nitrous Oxide	120	310	280	170
HFC-23	264	11,700	9,100	9,800
HFC-125	32.6	2,800	4,600	920
HFC-134a	14.6	1,300	3,400	420
HFC-143a	48.3	3,800	5,000	1,400
HFC-152a	1.5	140	460	42
HFC-227ea	36.5	2,900	4,300	950
HFC-236fa	209	6,300	5,100	4,700
HFC-4310mee	17.1	1,300	3,000	400
CF4	50,000	6,500	4,400	10,000
C2F6	10,000	9,200	6,200	14,000
C4F10	2,600	7,000	4,800	10,100
C6F14	3,200	7,400	5,000	10,700
SF6	3,200	23,900	16,300	34,900

Note: GWP = global warming potential
Source: EPA 2007a

Although ozone is a GHG, unlike the other GHG, ozone in the troposphere is relatively short-lived and therefore is not global in nature. According to the CARB, it is difficult to determine accurately the contribution of ozone precursors (NOx and VOC) to global climate change (CARB 2006).

Calculation of Greenhouse Gas Emissions

The quantification of GHG emissions associated with a Project can be complex and relies on a number of assumptions. GHG emissions are global because emissions from one location could affect the entire planet, and they are not limited to local impacts. Therefore, offsite impacts, such as vehicle emissions and other associated transportation emissions, are included.

Emissions are generally classified as either direct or indirect. Direct emissions are associated with the production of GHG emissions at the Project Site. These include the combustion of natural gas in heaters or stoves, the combustion of fuel in engines and construction vehicles, and fugitive emissions from valves and connections, which include methane as a component.

Indirect emissions include the emissions from vehicles (both gasoline and diesel) delivering materials and equipment to the site and the use of electricity. Electricity also produces GHG emissions because fossil fuels generate some electricity.

This report utilizes the California Climate Action Registry General Reporting Protocol and the CARB Compendium of Emission Factors and Methods to Support Mandatory Reporting of Greenhouse Gas Emissions as methods to calculate GHG emissions (CCAR 2009, CARB 2007c).

To quantify the emissions associated with electrical generation, the resource mix for a particular area must be determined. The resource mix is the proportion of electricity generated from different sources. Electricity generated from coal or oil combustion produces greater GHG emissions than electricity generated from natural gas combustion because of the higher carbon content of coal and oil. Electricity generated from wind turbines, hydroelectric dams, or nuclear power is assigned zero greenhouse gas emissions. Although these sources have some GHG emissions associated with the manufacture of the wind generators, the mining and enrichment of uranium, and the displacement of forest areas for reservoirs, these emissions are not included in the lifecycle analysis because they are assumed to be relatively small compared to the electricity generated. For example, estimates of nuclear power GHG emissions associated with uranium mining and enrichment range up to approximately 60 pounds per megawatt hour (lbs/MWh), or approximately 5% of natural gas turbine GHG emissions (Canada 1998).

Detailed information on the power generation plants, their contribution to the area electricity resource mix, and their associated emissions have been developed by the Environmental Protection Agency (EPA) in the Emissions & Generation Resource Integrated Database (eGRID). This analysis used the most recent version of eGRID, released in April 2007 (EPA 2007b). eGRID is developed from a variety of data collected by the EPA, the Energy Information Administration, and the Federal Energy Regulatory Commission.

eGRID includes electricity generated from coal, gas, oil, biomass (e.g., wood, paper, agricultural byproducts, landfill gas, digester gas), nuclear, hydroelectric, geothermal, solar, wind, and other fossil fuels (e.g., solid waste, tire-derived fuel, hydrogen, methanol, coke gas). Each of these is assigned criteria, as well as GHG emission levels, based on facility specifics. Nuclear, hydroelectric, wind, geothermal, biomass, and solar are assigned zero GHG emissions. eGRID assigns zero CO2 emissions to generation from the combustion of all biomass because these organic materials would otherwise release CO2 (or other GHG) into the atmosphere through natural decomposition. The other fuels are assigned GHG emissions levels based on the fuel carbon content.

This report analyzed the eGRID database to assign a GHG emissions level to electricity generated for the operations. Table 4.1-6 shows the resource mix and estimated GHG emissions for a range of areas. Approximately half of the electricity in the US is generated from coal. Nationwide, GHG emissions from all electricity production sources are approximately 1,363 lbs/MWh. The emissions rate is lower in western states, primarily because of increased use of hydroelectric and gas. The California Independent Service Operator (CalISO) area (which includes some generation outside of California) has a low GHG emission rate of approximately 687 lbs/MWh due to the use of hydroelectric, nuclear, and renewable energy sources.

Table 4.1-6 Electricity Generation Resource Mix and Greenhouse Gas Emissions

Resource Mix[a]	United States	Western States (WECC)	CalISO Service Area[b]
Coal	50.2	34.2	1.2
Oil	3.0	0.5	1.2
Gas	17.4	26.3	51.1
Nuclear	20.0	9.9	16.8
Hydro	6.6	24.3	17.3
Biomass	1.4	1.3	3.2
Wind	0.3	0.9	2.4
Solar	0.0	0.1	0.3
Geo	0.3	2.0	5.5
Other Fossil	0.5	0.3	0.9
Other	0.1	0.0	0.0
Non-Renewables	91.3	71.3	71.3
Renewables	8.7	28.7	28.7
Non-Hydro Renewables	2.1	4.3	11.4
CO_2 Rate, lb/MWh	1363	1107	687

a. Resource Mix is the percentage of total mega-watt hours.
b. The Mohave Generating Station is not included in CalISO Service Areas because it shut down in 2005.
Source: eGRID database with modifications and updates

Since the Mohave Generating Station shut down in 2005, it was removed from the eGRID database and calculations.

The GHG emission rate from CalISO electricity is approximately 45 percent less than the rate associated with direct natural gas combustion due to the electricity resource mix including resources that do not create GHG emissions (e.g., hydroelectric, nuclear, and renewables).

Indirect GHG emissions are also associated with water use, since electricity would be necessary to pump and treat water used at the Proposed Project Site. Water used at the site comes from wells at the Refinery and, therefore, water-associated electrical use is included in total Refinery electricity requirements. Water treatment is incorporated through the electricity used to power the water treatment facility at the SMF.

Indirect GHG emissions associated with trash hauling and other services that might visit the Proposed Project Site are incorporated through the inclusion of the travel of diesel trucks that would visit and service the Project Site.

National Greenhouse Gas Emissions

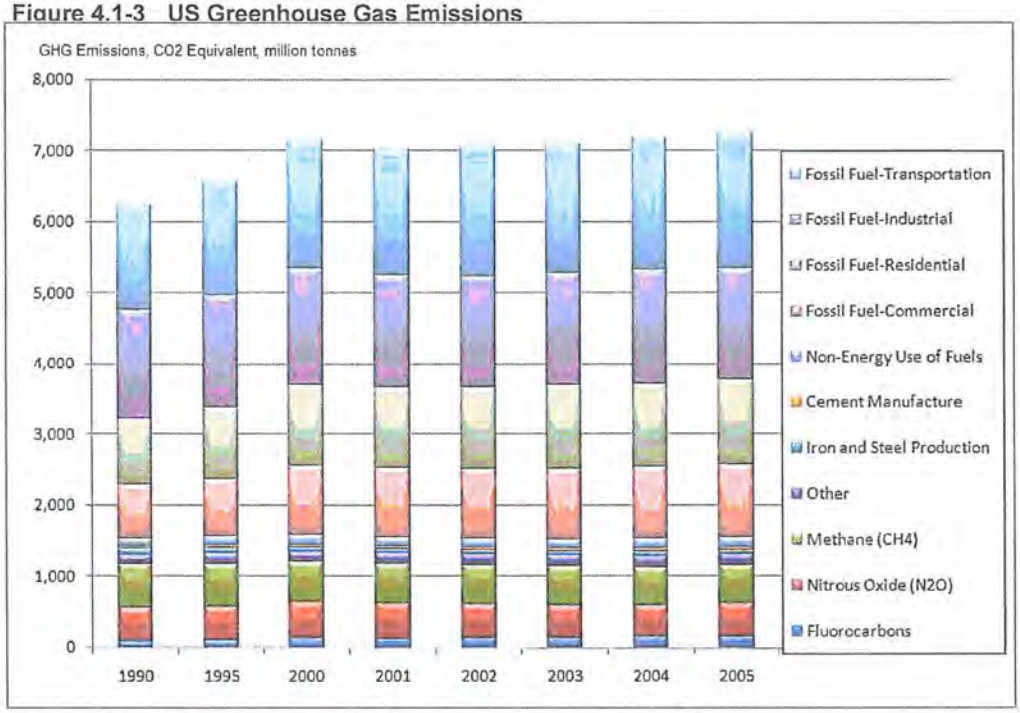
Fossil fuel combustion is responsible for the vast majority of the United State's GHG emissions, and CO2 is the primary GHG. In 2005, total US GHG emissions were 7,260 million metric tons of carbon equivalent (MMTCE); 84 percent of which were CO2 emissions (EPA 2007). Figure 4.1-3 shows the breakdown of US GHG emissions since 1990. In 2005, approximately 33

percent of GHG emissions were associated with transportation and approximately 41 percent were associated with electricity generation.

Statewide Greenhouse Gas Emissions

With a population of 33 million, California is the most populous state in the United States. In 2004, California produced 492 MMTCE of GHG emissions (CARB 2008b). Overall, 81 percent of California's emissions are CO2 from fossil fuel combustion (CARB 2008b). The transportation sector is the single largest contributor of California's GHG emissions, producing 41 percent of the State's total GHG emissions in 2004. In contrast, electrical generation produced more than half that, at 22 percent. Nonetheless, California ranks fourth lowest of the 50 states in CO2 emissions per capita.

Figure 4.1-3 US Greenhouse Gas Emissions



Notes: Fossil fuel use includes electricity generation Source: EPA 2007a

Local Greenhouse Gas Emissions

In July 2008, the County Board of Supervisors made a commitment to calculating San Luis Obispo County's contribution to global climate change through the development of a Energywise Plan (Climate Action Plan) currently in draft form. The GHG Inventory estimates that the unincorporated areas of San Luis Obispo County emitted approximately 917,953 metric tons of CO2-equivalent emissions in the baseline year 2006. The transportation sector was by far the largest contributor to emissions (40 percent). Emissions from the commercial/industrial and

residential sectors accounted for 24 and 15 percent of the total, respectively. Emissions from other sources, including livestock, select aircraft operations, and agricultural equipment, comprised the remaining 21 percent of the total.

4.1.1.4 Current Emissions from Refinery Operations

Emissions produce impacts associated with criteria pollutant emissions, emissions of GHG and emissions of toxic materials.

Current Criteria Pollutant Emissions

Current operations at the Refinery produced criteria emissions associated with a range of equipment types and operations, including:

- Combustion sources, including diesel pumps and compressors, heaters, boiler, generators, incinerators, flare (emergency use only)[1]
- Fugitive emissions from pumps, valves, and connections;
- Fugitive emissions from hydrocarbon tanks;
- Coke handling and storage; and
- Other miscellaneous sources, including solvent use, oily water treatment, cooling towers, and sulfur pit vents.

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The Refinery reports emissions from these sources to the APCD annually. Table 4.1-7 summarizes the emissions for these sources for 2009.

Comment [F7]: Particulate section is unclear: PM, PM10 and PM 2.5. Since PM 2.5 is a subset of PM10…sum should equal PM….Please clarify or remove as it is not a column found in later tables. 1

Replace with corrected spreadsheets from COP:

Santa Maria Refinery Emissions Baseline Summary, 2009 (COP Revised)

Annual Emissions, Tons/Year

Equipment Description	TOG	ROG	CO	NOx	SO2	PM	PM-10	PM-2.5
Diesel Pumps and Compressors	0.1	0.1	0.3	1.3	0.0	0.1	0.1	0.1
Crude Heaters B2A/B	2.9	1.5	0.0	12.9	26.8	2.0	1.9	1.9
Vacuum Heaters B62A/B	0.5	0.2	0.2	1.7	2.4	0.3	0.3	0.3
Coke Heaters B102A/B	3.1	1.6	0.0	14.8	31.8	2.2	2.1	2.0
Steam Superheaters B201A/B	0.2	0.1	0.0	1.5	1.6	0.1	0.1	0.1
Boilers B504/506/B507	4.6	2.3	1.7	14.9	26.6	3.2	3.2	3.2
Boiler Steam Generator B505	0.8	0.4	1.8	9.7	15.1	1.7	1.7	1.7
Sulfur Plant Incinerator B602A/B	0.2	0.1	1.3	1.5	22.7	0.1	0.1	0.1
Tail Gas Combustor B702	0.2	0.1	1.3	1.6	1.6	0.1	0.1	0.1
Flare Stack C451	0.3	0.1	0.8	0.1	0.0	0.0	0.0	0.0
Oily water treatment system	4.8	4.7	0.0	0.0	0.0	0.0	0.0	0.0
Cooling towers	2.8	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Sulfur pit vents	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fugitive Emissions: non-crude tank	6.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0
Fugitive Emissions: crude tank	7.2	6.6	0.0	0.0	0.0	0.0	0.0	0.0
Coke Storage - Carbon Plant	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0
Coke handling and conveying	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0
Misc Sources (solvent use, etc)	0.3	0.3	0.0	0.1	0.0	0.0	0.0	0.0
Total	***34.5***	***26.8***	***7.5***	***60.1***	***129***	***10.4***	***9.9***	***9.6***

Average Daily Emissions, lbs/day

Equipment Description	TOG	ROG	CO	NOx	SO2	PM	PM-10	PM-2.5
Diesel Pumps and Compressors	0.6	0.4	1.5	7.1	0.1	0.5	0.5	0.5
Crude Heaters B2A/B	16.0	8.0	0.0	70.5	146.7	11.0	10.5	10.3
Vacuum Heaters B62A/B	2.6	1.3	1.2	9.4	12.9	1.8	1.7	1.7
Coke Heaters B102A/B	17.2	8.6	0.3	80.9	174.2	11.9	11.3	11.0
Steam Superheaters B201A/B	0.8	0.4	0.0	8.1	8.6	0.6	0.6	0.5
Boilers B504/506/B507	25.5	12.7	9.5	81.8	145.5	17.6	17.6	17.6
Boiler Steam Generator B505	4.3	2.2	9.9	53.3	82.8	9.2	9.2	9.2
Sulfur Plant Incinerator B602A/B	0.9	0.5	6.9	8.2	124.4	0.6	0.6	0.6
Tail Gas Combustor B702	1.0	0.5	7.4	8.8	9.0	0.7	0.7	0.7
Flare Stack C451	1.6	0.6	4.2	0.8	0.1	0.0	0.0	0.0
Oily water treatment system	26.3	25.6	0.0	0.0	0.0	0.0	0.0	0.0
Cooling towers	15.5	15.5	0.0	0.0	0.0	0.0	0.0	0.0
Sulfur pit vents	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fugitive Emissions: non-crude tank	35.4	32.9	0.0	0.0	0.0	0.0	0.0	0.0
Fugitive Emissions: crude tank	39.7	36.2	0.0	0.0	0.0	0.0	0.0	0.0
Coke Storage - Carbon Plant	0.0	0.0	0.0	0.0	0.0	1.6	0.8	0.2
Coke handling and conveying	0.0	0.0	0.0	0.0	0.0	1.6	0.8	0.2
Misc Sources (solvent use, etc)	1.7	1.7	0.1	0.5	0.0	0.0	0.0	0.0
Total, lbs/day	***189.0***	***146.8***	***40.9***	***329.3***	***704***	***57.1***	***54.2***	***52.6***

Source: SLOC APCD Emissions Spreadsheets derived from data submitted by ConocoPhillips 3

Table 4.1-7 2009 Re

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Equipment Descrip
Diesel Pumps and Co
Crude Heaters B2A/B
Vacuum Heaters B62A/B
Coke Heaters B102A/B
Steam Superheaters B20
Boilers B504/506
Generators B505/B507
Sulfur Plant Incinerator B
Tail Gas Combustor B70
Flare Stack C451
Kilns (Rotary and Cold St
Oily water treatment syst
Cooling towers
Sulfur pit vents
Fugitive Emissions: non-c
Fugitive Emissions: crude
Coke Storage - Carbon P
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Cooler Stack to Wet Scr
Misc Sources (turnaroun
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Equipment Description
Diesel Pumps and Compr
Crude Heaters B2A/B
Vacuum Heaters B62A/B
Coke Heaters B102A/B
Steam Superheaters B20
Boilers B504/506
Generators B505/B5
Sulfur Plant Incinerator B
Tail Gas Combustor B70
Flare Stack C451
Kilns (Rotary and Cold St
Oily water treatment syst
Cooling towers
Sulfur pit vents
Fugitive Emissions: non-c
Fugitive Emissions: crude
Coke Storage - Carbon P
Rail car loading, baghous
Coke handling and conve
Cooler Stack to Wet Scr
Misc Sources (turnaroun
Total, lbs/day

Comment [F8]: Equipment out of service (kiln, RR loading baghouse, Wet Scrubber) should not be included. B507 is a steam generating boiler, not a generator 2

Offsite criteria emissions include the emissions from vehicles used to transport employees and from vehicles used to transport coke, sulfur, and other materials delivered to or exported by the Refinery. These emissions include:

- Emissions from trucks used to transport coke;
- Emissions from trucks used to transport sulfur;
- Emissions associated with transport of crude oil to the Santa Maria Pump Station to be delivered by pipeline to the Refinery;
- Emissions from trucks associated with normal materials shipments and employee duties; and
- Emissions from employee vehicles.

Table 4.1-8 shows emissions from offsite vehicle trips. Trucks delivering crude oil from several locations to the Santa Maria Pump Station create emissions (see Section 2.0, Project Description). The weighted-average distance of these deliveries is 66 miles one way, from as far north as the San Ardo fields in Monterey County (83 miles) and south to Casmalia.

Comment [F9]: Please refer to comments in cover letter dated Oct. 31, 2011 as it pertains to emissions associated with transportation of crude oil.
In addition please change title to define as "Offsite Vehicle Emissions-2009-Operated to support SMF operations"

Please also see comments contained in Cover Letter dated Oct. 31, 2011 pertaining to Transportation 1

Table 4.1-8 Offsite Vehicle Emissions Year 2009– Within and Outside of San Luis Obispo County

Source	Peak Day Emissions, lbs/day						Total Emissions, Tons or Tons/yr								
	ROG	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	ROG	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	N2O	CH4	CO2
Within SLO County															
Workers/Visitors weekdays	1.45	41.72	4.65	0.05	0.48	0.23	0.19	5.42	0.60	0.01	0.06	0.03	0.03	0.05	617
Workers/Visitors weekends	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.01	0.00	0.00	0.00	0.00	0.00	15
LDT trucks - misc refinery deliveries	0.17	4.72	0.60	0.00	0.03	0.02	0.03	0.86	0.11	0.00	0.01	0.00	0.01	0.01	63
HHDT Trucks - coke export	7.02	35.15	148.48	0.20	5.56	4.65	1.28	6.42	27.10	0.04	1.01	0.85	0.06	0.06	3870
HHDT Trucks - sulfur export	0.64	3.19	13.49	0.02	0.51	0.42	0.12	0.58	2.46	0.00	0.09	0.08	0.01	0.01	352
HHDT Trucks - crude deliveries to SM	1.84	9.19	38.83	0.05	1.45	1.22	0.33	1.68	7.09	0.01	0.27	0.22	0.01	0.02	1012
Locomotives to Long Beach- SLOC	0.72	2.10	12.86	0.00	0.44	0.40	0.01	0.04	0.22	0.00	0.01	0.01	0.00	0.00	13
Total	***11.83***	***96.08***	***218.91***	***0.32***	***8.47***	***6.94***	***1.97***	***15.12***	***37.59***	***0.06***	***1.45***	***1.19***	***0.11***	***0.14***	***5941***
Kern County															
HHDT Trucks - sulfur export	0.51	2.55	10.79	0.01	0.40	0.34	0.09	0.47	1.97	0.00	0.07	0.06	0.00	0.00	281
HHDT Trucks - coke export	9.36	46.87	197.97	0.27	7.41	6.20	1.71	8.55	36.13	0.05	1.35	1.13	0.07	0.08	5160
Total	***9.87***	***49.43***	***208.76***	***0.28***	***7.82***	***6.54***	***1.80***	***9.02***	***38.10***	***0.05***	***1.43***	***1.19***	***0.08***	***0.08***	***5441***
Santa Barbara County															
HHDT Trucks - crude deliveries to SM	0.41	2.07	8.75	0.01	0.33	0.27	0.08	0.38	1.60	0.00	0.06	0.05	0.00	0.00	228
Locomotives to Long Beach- SBC	16.13	47.32	290.04	0.01	10.04	9.03	0.27	0.81	4.94	0.00	0.17	0.15	0.02	0.01	297
Total	***16.55***	***49.39***	***298.78***	***0.02***	***10.37***	***9.31***	***0.35***	***1.18***	***6.54***	***0.00***	***0.23***	***0.20***	***0.03***	***0.01***	***525***
Monterey County															
HHDT Trucks - crude deliveries to SM	0.55	2.76	11.67	0.02	0.44	0.37	0.10	0.50	2.13	0.00	0.08	0.07	0.00	0.00	304
Ventura County															
Locomotives to Long Beach- VC	8.65	25.37	155.48	0.00	5.38	4.84	0.15	0.43	2.65	0.00	0.09	0.08	0.01	0.00	159
Los Angeles County															
Locomotives to Long Beach- LAC	8.32	24.39	149.50	0.00	5.17	4.66	0.14	0.42	2.55	0.00	0.09	0.08	0.01	0.00	153
Total Emissions All Counties	55.76	247.43	1043.11	0.65	37.65	32.65	4.51	26.68	89.55	0.11	3.37	2.81	0.25	0.24	12,524

Source: Data derived by SLOC APCD from ConocoPhillips permit application submissions and subsequent calculations

Comment [F10]: Please state correctly that COP data is used to produce data in this table. (IT is not COP data). 4

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Current Operations Greenhouse Gas Emissions

Operations at the Refinery in the baseline year produced GHG emissions associated with a range of equipment types and operations, as shown in Table 4.1-7. Table 4.1-9 summarizes Refinery GHG emissions, which the Refinery voluntarily submits to the APCD.

GHG emissions associated with employees commuting and offsite movement of sulfur, coke, and miscellaneous materials are not included in the inventories submitted to the APCD. These emissions levels, also shown in Table 4.1-9, are calculated separately.

Table 4.1-9 Greenhouse Gas Emissions - Refinery Operations 2007, metric tonnes

Source Type	CO_2	N_2O	CH_4	SF_6	Total CO_2 Equivalent Emissions
Refinery					
Stationary Combustion	233,432	0.4	3.9	0	233,650
Mobile Combustion	751	0.0	0.0	0	759
Refrigerant Usage	0	0.0	0.0	0	20
Sulfur Recovery	8,511	0.0	0.0	0	8,511
Water Processes	0	0.2	1.5	0	105
VOC Fugitives	0	0.0	0.5	0	11
SF6 Usage	0	0.0	0.0	0	0
Purchased Electricity	7,690	0.0	0.1	0	7,701
TOTAL REFINERY	250,384	0.7	6.0	0	250,757
2009 Offsite Mobile Data					
Workers commuting	568	0.0	0.0	0	577
LDT trucks - misc Refinery deliveries	57	0.0	0.0	0	60
HHDT Trucks - coke export	8,127	0.1	0.1	0	8,165
HHDT Trucks - sulfur export	570	0.0	0.0	0	572
HHDT Trucks - crude deliveries to SMPS	1,390	0.0	0.0	0	1,396
Locomotives to Long Beach	561	0.0	0.0	0	576
TOTAL MOBILE	11,272	0.2	0.2	0	11,346
TOTAL					262,103

Notes: Mobile combustion is emission strictly related to Refinery operations, not employees or equipment or materials delivery or transport. Data is derived from 2009 Offsite Mobile data for this part of the table.
Source: SLOC APCD spreadsheets, with data derived from ConocoPhillips submittals.

Comment [F11]: This category was used originally by COP, however, it represents emissions from calciner operation. The calciner operation was shut down in first quarter of 2007 and this year should not be included in this report.

Suggest using same emissions year that corresponds to that for GHG emissions. For ease of comparison, likely the 2009 annual emission inventory and the 2009 GHG calculations would be appropriate.

Comment [F12]: There will be a net decrease in electricity over the baseline for this project

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Toxic Emissions

Toxic emissions are associated with operations at the Refinery as well as emissions from diesel truck operating along area roadways. Refinery emissions of toxic materials are estimated by the Refinery and submitted to the APCD along with modeling of cancer, acute, and chronic impacts at locations near the Refinery. These estimates are required by regulation, particularly the

AB2588 requirements. The results from the emission inventory and the 2007 modeling analysis (based on the 2004 emissions year), indicate that toxic emissions from the Refinery create impacts outside of the plant boundaries to a cancer case level of 15 in one million (ConocoPhillips 2007). This value is only 2.1-in-one-million for the proposed throughput increase from a similarly modeled recent analysis using 2010 emissions year data (ConocoPhillips, 2011). The 10-in-one-million contours are confined within plant boundaries, and extend beyond the plant boundaries to the west, toward an area that does not include any residential areas or businesses. The 2007 modeling indicated acute and chronic impacts at 0.77 health impact (AHI) and 0.21 CHI. The proposed throughput increase, however, results in reduced impacts of 0.38 AHI and 0.02 CHI, values well below the hazard index of 1.0 at the property boundaries. The 2007 acute impacts were determined to be primarily associated with the calciner operations (85% of the acute impacts were attributable to the calciner), which has since been removed. Table 4.1-10 summarizes the 2010 emissions of toxic materials.

Cancer risks from the Refinery in 2007 were attributable primarily to the diesel cooling water pump at the coke processing facility and other diesel engine operations, which the report estimates makes up over 90 percent of the cancer health risk. The diesel cooling water pump was replaced in early 2011 by ConocoPhillips with a natural gas-fired engine. In addition, other diesel engines have been taken out of service and thereby reduce risk.

Table 4.1-10 Toxic Emissions From Santa Maria Refinery Increased Thruput Project

Pollutant	Annual Emissions, pounds/year	Pollutant	Annual Emissions, pounds/year
1,3-Butadiene	1.17	H2S	29.7
Acetaldehyde	13.4	H2SO4	0
Acrolein	7.3	HCl	0.91
Ammonia	258	Hex. Chrome	4.87E-4
Antimony	2.16E-3	Hexane	11.99
Arsenic	7.8 E-3	HF	0
Benz(a)anthracene	7.64E-3	Indeno(1,2,3-cd)pyrene	6.77E-3
Benzene	168.8	Lead	4.04E-2
Benzo(a)pyrene	2.9E-2	Manganese	1.73E-2
Benzo(b)fluoranthene	6.58E-3	Mercury	9.74E-3
Benzo(k)fluouranthene	6.62E-3	Naphthalene	2.39
Beryllium	2.16E-3	Nickel	8.82E-1
Cadmium	9.47E-3	Propylene	1095
Carbon Monoxide	305,380	Selenium	1.07e-2
Chlorine	24.8	Sulfates	12.8
Chromium	1.16E-2	Sulfur Dioxide	49,707
Chrysene	6.75E-3	Toluene	740.9
Copper	2.01E-2		
Dibenzo(a,h)anthracene	4.73E-3	Total PCB	0
Diesel Particulate	51	Vanadium	7.12

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Ethyl Benzene	104 1	Xylenes	882.6 2
Formaldehyde	92.0 3	Zinc	1.09E-1 4

Notes: Since the initial 2004 TAC inventory, sulfur dioxide emissions have been reduced by 97% as a result of the calciner unit closure. Also, the H2SO4 and HCL emissions have been eliminated as a result of the calciner unit closure.

Source: 2011 Health Risk Assessment as updated by COP from 2007 HRA analysis.

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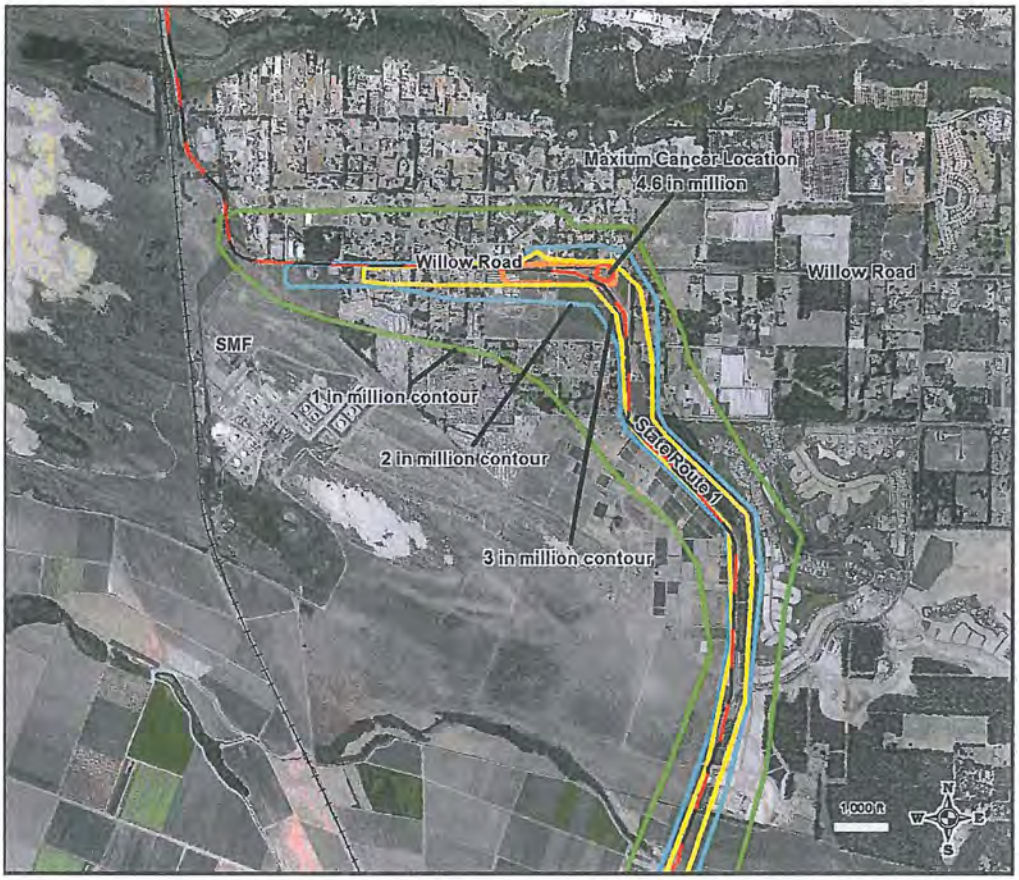
Deleted: APCD emission inventories and APCD 7/22/2011 letter 9

Emissions from mobile sources are not included in the AB2588 reporting requirements. Therefore, additional modeling was conducted to estimate the impacts of diesel trucks operating along area roadways. The analysis included routes to and from U.S. Highway 101 and State Highway 166, including a route to and from the Refinery and Highway 101 north, utilizing Highway 1, Halcyon Road, and the Grand Avenue ramps; a route to Highway 101 south utilizing State Highway 1 and west Main Street; and a route to State Highway 166 utilizing Willow Road and Tefft Street. Modeling was conducted using the Aermod system with a grid of receptors spaced every 100 meters. The truck sources were configured as elevated area sources 100 meters long, placed end-to-end along each route. Emission rates were based on EMFAC2007 for heavy-duty diesel trucks and truck traffic data included in Section 2.0, Project Description. Meteorological data utilized was from Vandenberg Air Force Base (station 00093214 for the year 1990) for upper air data and from the Santa Maria station (station 23272 for the year 1990) for surface air data.

The results of the modeling indicate that the maximum risk levels for cancer along the proposed routes would be a maximum of 4.6 cancer cases per million. The location of the maximum cancer risk would be along State Highway 1 immediately south of the Refinery, since this route would have the greatest amount of traffic. Figure 4.1-4 shows risk contours. Risk levels are greater than one in one million along the southern route to Highway 101 since most traffic between Highway 101 and the SMF is anticipated to utilize the southern route to transport sulfur and coke. The risk contours along the route to Highway 166 and the route to Highway 101 north would create risk levels less than one in one million primarily due to the lower traffic levels along these routes to and from the SMF. The peak cancer risk would be near the intersection of Willow Road and Highway 1 and is approximately 4.6 in one million (SLOC APCD significance threshold is 10-in–one- million). 10 11

Figure 4.1-4 Transportation Route Diesel Exhaust Health Risk Contours - Cancer



Notes: See Appendix A for details of the Aermod modeling

Odor Emissions

Several activities at the SMF, including sulfur handling, combustion of sulfurous upset gasses, and fugitive emissions from leaking components could produce odors in the surrounding residential and industrial areas. Leaks and upsets occur infrequently compared to routine operation and are repaired in a timely manner to minimize emissions. The SMF was under a SLOC APCD Abatement Order from 1989 to 1993 the result of odor nuisance complaints. As a result of that Order, plant and process modifications were made to significantly reduce emissions and odors. Steps to reduce odors and offsite emissions include an enhanced fugitive emissions program, implemented in 2007, that substantially reduced calculated VOC emissions from leaking components. The 2007 shutdown of the Calciner Plant also substantially reduced the combustion and emissions of sulfurous gasses.

Comment [F15]: Normal combustion gases are limited in sulfur content by permit.

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The APCD investigates and compiles odor complaints for the SMF. Over the past 12 years, the APCD recorded approximately 7.5 complaints per year on average, and APCD staff verified 3.3 per year were attributable to the SMF. Complaints peaked at 20 in 2008, and the APCD verified 11 complaints. In addition, the SMF has received, on average, 2.8 APCD notices of violation per year over the past 17 years, for issues ranging from failure to submit appropriate plans to emissions levels that exceed permit values. This is a relatively low number considering that the site Permit-to-Operate includes over 70 pages of specific line item conditions, the violation of any of which could result in a notice of violation and that the site must self-report deviations from that permit. However, violations are recorded infrequently for/against the site. In addition, during the past 17 years, only one notice of violation was issued for odor nuisance from an event that occurred over 17 years ago, in 1994.

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4.1.2 Regulatory Setting

Federal, state, and local agencies have established standards and regulations that govern the Proposed Project. The following sections summarize the regulatory setting for air quality that apply to new development within the local air basin and the historic and most recent efforts on addressing GHG emissions.

4.1.2.1 Air Quality

Federal Regulations

The Clean Air Act of 1970 directs attainment and maintenance of the National Ambient Air Quality Standards (NAAQS). The 1990 Amendments to this Act included new provisions that address air pollutant emissions that affect local, regional, and global air quality. The EPA is responsible for implementing the Clean Air Act and establishing the NAAQS for criteria pollutants. In 1997, the EPA adopted revisions to the Ozone and Particulate Matter Standards in the Clean Air Act. These revisions included 8-hour ozone standards and particulate matter standards for PM2.5. However, in May of 1999 the US Court of Appeals for the District of Columbia remanded the ozone standards. In January 2001, the EPA issued a "Proposed Response to Remand" that declared the revised ozone standard should remain at 0.08 ppm, as established with the 1997 revisions. In March 2001, the US Supreme Court upheld the constitutionality of the Clean Air Act as the EPA interpreted it, setting health-protective air quality standards for ground-level ozone and particulate matter. In April 2004, the EPA issued its Final Nonattainment Area Designations for Eight-Hour Ozone Standard.

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Air Quality Management Plan

Under the provisions of the Clean Air Act, the EPA requires each state that has not attained the NAAQS to prepare an Air Quality Management Plan, which is a separate local plan detailing how to meet the federal standards. The governor of each state designates a local agency to prepare these plans, which are then incorporated into a State Implementation Plan.

Emission Standards for Non-Road Diesel Engines

To reduce emissions from non-road diesel equipment, the EPA established a series of increasingly strict emission standards for new non-road diesel engines. Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category. Tier 2 standards were phased in from 2001 to 2006. Tier 3 standards were phased in from 2006 to 2008. Tier 4 standards, which likely will require add-on emission control equipment, will be phased in from 2008 until 2015. These standards will apply to construction equipment.

Project-Specific Rules

Federal rules applicable to the Proposed Project are outlined in the Refinery Title 5 permit, pages iii-iv PTO 44-50.

State Regulations

California Air Resources Board

The CARB has jurisdiction over all air pollutant sources in the state; it delegated responsibility for stationary sources to local air districts and retained authority over emissions from mobile sources. The County's local air district is the San Luis Obispo Air Pollution Control District (APCD). The California Air Resources Board (CARB) established the California Ambient Air Quality Standards (CAAQS). Comparing the criteria pollutant concentrations in ambient air to the CAAQS determines state attainment status for criteria pollutants in a given region. The CARB, in partnership with local California air quality management districts, developed a pollutant-monitoring network to aid attainment of CAAQS. The network consists of numerous monitoring stations throughout California that monitor and report various pollutants' concentrations in ambient air.

California Clean Air Act

The California Clear Air Act (CCAA) went into effect in January 1, 1989, and was amended in 1992 (California Health and Safety Code, Division 26). The CCAA mandates achieving the health-based CAAQS at the earliest practical date.

Air Toxics "Hot Spots" Information and Assessment Act of 1987

The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB2588) requires an inventory of air toxics emissions from individual facilities, an assessment of health risk, and notification of potential significant health risk (California Health & Safety Code, Division 26, Part 6).

California Diesel Fuel Regulations

With the California Diesel Fuel Regulations, the CARB set sulfur limitations for diesel fuel sold in California for use in on-road and off-road motor vehicles. The rule initially excluded harbor craft and intrastate locomotives, but it later included them with a 2004 rule amendment. Under this rule, diesel fuel used in motor vehicles, except harbor craft and intrastate locomotives, has

been limited to 500-ppm sulfur since 1993. This sulfur limit was later reduced to 15-ppm, effective September 1, 2006.

4.1.2.2 Local

In 1967, California passed legislation that placed the primary responsibility for controlling air pollution at the local level. In April 1970, the San Luis Obispo County Board of Supervisors formed the Air Pollution Control District (APCD), which included a decision-making body known as the APCD Board of Directors. Over the past 30 years, the District has adopted and implemented nearly 100 rules and currently has nearly 1,070 individual permits and agricultural registrations, and it operates 850 facilities. In 1994, revisions to state law changed the composition of the Board of Directors to include all five County supervisors plus one city council member from each of the seven incorporated cities.

As part of the California Clean Air Act, the APCD is required to develop a plan to achieve and maintain the state ozone standard by the earliest practicable date. To this end, the APCD developed the Clean Air Plan (CAP). The latest CAP is dated 2001 CAP, adopted by the APCD at a hearing on March 26, 2002, which addresses state requirements by updating the 1991 CAP (SLOC APCD 2001). The 1991 CAP, adopted by the APCD in 1992, contained a comprehensive set of control measures designed to reduce ozone precursor emissions from a wide variety of stationary and mobile sources. The 2001 CAP, similar to the 1998 CAP, is mainly a continuation of the 1995 CAP and proposed no new control measures.

Control measures proposed in the CAP include vapor recovery, solvent content reduction, improved fuel combustion, fuel switching or electrification, chemical or catalytic reduction, reduced vehicle use, and new source reviews.

The SLOC APCD also issues annual reports that address issues such as air quality summaries for each year as well as air quality trends.

The SLOC APCD developed a number of rules that are potentially applicable to this Project, including:

- Rule 204 – Requirements (new source review);
- Rule 219 – Toxics new source review;
- Rule 401 – Visible emissions;
- Rule 402 – Nuisance;
- Rule 403 – Particulate matter emission standards;
- Rule 405 – Nitrogen oxides emission standards, limitations, and prohibitions;
- Rule 406 – Carbon monoxide emission standards and limitations;
- Rule 407 – Organic material emission standards;
- Rule 412 – Airborne toxic control measures;
- Rule 417 – Control of fugitive emissions of volatile organic compounds;

- Rule 419 – Petroleum pits, ponds, sumps, well cellars and wastewater separators;
- Rule 420 – Cutback asphalt paving materials;
- Rule 425 – Storage of volatile organic compounds;
- Rule 430 – Control of oxides of nitrogen from industrial, institutional, commercial boilers, steam generators, and process heaters;
- Rule 431 – Stationary internal combustion engines; and
- Rule 433 – Architectural coatings.

The SLOC APCD currently has no adopted, formal guidance concerning CEQA evaluation of GHG emissions associated with projects and no regulatory requirements. However, the SCAQMD interim threshold of 10,000 metric tonnes CO2e (for industrial sources only) has been utilized in various environmental impact reports, including the California Valley Solar Ranch Project Final Environmental Impact Report (SLOC 2011). Nonetheless, any increase in emissions from the Proposed Project would be subject to New Source Review requirements.

4.1.2.3 Greenhouse Gas Emissions Regulations

International Regulations

Kyoto Protocol

The Kyoto Protocol is a treaty made under the United Nations Framework Convention on Climate Change, which was signed on March 21, 1994. The Convention was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions would be reduced by an estimated 5 percent from 1990 levels during the first commitment period from 2008 until 2012. However, while the US is a signatory to the Kyoto Protocol, Congress has not ratified it; therefore, the US is not bound by the Protocol's commitments.

Climate Change Technology Program

In lieu of the Kyoto Protocol's mandatory framework, the US has opted for a voluntary and incentive-based approach toward emissions reductions. This approach, the Climate Change Technology Program, is a multi-agency research and development coordination effort, led by the Secretaries of Energy and Commerce, who are charged with carrying out the President's National Climate Change Technology Initiative.

Federal Regulations

Clean Air Act

In the past, the US EPA has not regulated GHG under the Clean Air Act. However, the US Supreme Court recently held that the EPA can, and should, consider regulating motor-vehicle GHG emissions. In Massachusetts v. Environmental Protection Agency, 12 states and cities,

including California, in conjunction with several environmental organizations sued to force the EPA to regulate GHG as a pollutant pursuant to the Clean Air Act (US Supreme Court No. 05-1120; 127 S.Ct. 1438 (2007)). The Court ruled that GHG fit within the Clean Air Act's definition of a pollutant and that the EPA's reason for not regulating GHG was insufficiently grounded.

40 CFR Section 98 specifies mandatory reporting requirements for a number of industries. The final 40 CFR part 98 applies to certain downstream facilities that emit GHG, and to certain upstream suppliers of fossil fuels and industrial GHG. For suppliers, the GHG emissions reported are the emissions that would result from combustion or use of the products supplied. The rule also includes provisions to ensure the accuracy of emissions data through monitoring, recordkeeping and verification requirements. The mandatory reporting requirements generally apply to facilities that produce more than 25,000 metric tonnes of CO2 equivalent per year.

State Regulations and Programs

Executive Order S-3-05

The 2005 California Executive Order S-3-05 established the following GHG emission-reduction targets for California:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The Secretary of the California Environmental Protection Agency (CalEPA) is charged with coordinating oversight of efforts to meet these targets and formed the Climate Action Team to carry out the Order. Emission reduction strategies or programs developed by the Climate Action Team to meet the emission targets are outlined in a March 2006 report (CalEPA 2006). The Climate Action Team also provided strategies and input to the CARB Scoping Plan.

Assembly Bill 1493

In 2002, the legislature declared in AB 1493 (the Pavley regulations) that global warming was a matter of increasing concern for public health and the environment in the state. It cited several risks that California faces from climate change, including reduction in the state's water supply, increased air pollution due to higher temperatures, harm to agriculture, and increase in wildfires, damage to the coastline, and economic losses caused by higher food, water, energy, and insurance prices. Furthermore, the legislature stated that technological solutions for reducing GHG emissions would stimulate California's economy and provide jobs. Accordingly, AB 1493 required the CARB to develop and adopt the nation's first GHG emission standards for automobiles. The CARB responded by adopting CO2-equivalent fleet average emission standards. The standards will be phased in from 2009 to 2016, reducing emissions by 22 percent in the "near term" (2009 to 2012) and 30 percent in the "mid-term" (2013 to 2016), as compared to 2002 fleets.

The legislature passed amendments to AB 1493 in September 2009. Implementation of AB 1493 requires a waiver from the EPA, which was granted in June 2009.

Assembly Bill 32

AB 32 codifies California's GHG emissions target and requires the state to reduce global warming emissions to 1990 levels by 2020. It further directs the CARB to enforce the statewide cap that would begin phasing in by 2012. AB 32 was signed and passed into law by Governor Arnold Schwarzenegger on September 27, 2006. Key milestones of AB 32 include:

- June 20, 2007 - Identification of "discrete early action GHG emission-reduction measures."
- January 1, 2008 - Identification of the 1990 baseline GHG emissions levels and approval of a statewide limit equivalent to that level. Adoption of reporting and verification requirements concerning GHG emissions.
- January 1, 2009 - Adoption of a scoping plan for achieving GHG emission reductions.
- January 1, 2010 - Adoption and enforcement of regulations to implement the actions.
- January 1, 2011 - Regulatory adoption of GHG emission limits and reduction measures.
- January 1, 2012 - GHG emission limits and reduction measures become enforceable.

Since the passage of AB 32, the CARB published Proposed Early Actions to Mitigate Climate Change in California. This publication indicated that the issue of GHG emissions in CEQA and General Plans was being deferred for later action, so the publication did not discuss any early action measures generally related to CEQA or to land use decisions.

California Senate Bill 1368

In 2006, the California legislature passed SB 1368, which requires the Public Utilities Commission (PUC) to develop and adopt a "greenhouse gases emission performance standard" by March 1, 2007, for private electric utilities under its regulation. The PUC adopted an interim standard on January 25, 2007, requiring that all new long-term commitments for base load generation involve power plants that have emissions no greater than a combined cycle gas turbine plant. That level is established at 1,100 lbs/MWh of CO2. The California Energy Commission has also adopted similar rules.

Senate Bill 97 – CEQA: Greenhouse Gas Emissions

In August 2007, Governor Schwarzenegger signed into law SB 97 – CEQA: Greenhouse Gas Emissions stating, "This bill advances a coordinated policy for reducing greenhouse gas emissions by directing the Office of Planning and Research and the Resources Agency to develop CEQA guidelines on how state and local agencies should analyze, and when necessary, mitigate greenhouse gas emissions." Specifically, SB 97 requires the Office of Planning and Research (OPR), by July 1, 2009, to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, including, but not limited to, effects associated with transportation or energy

consumption. The Resources Agency would be required to certify and adopt those guidelines by January 1, 2010. OPR would be required to periodically update the guidelines to incorporate new information or criteria established by the CARB pursuant to the California Global Warming Solutions Act of 2006. SB 97 also identifies a limited number of types of projects that would be exempt under CEQA from analyzing GHG emissions.

On January 7, 2009, OPR issued its draft CEQA guidelines revisions pursuant to SB 97. On March 16, 2010, the Office of Administrative Law approved the Amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The Amendments became effective on March 18, 2010.

Office of Planning and Research Technical Advisory and Preliminary Draft CEQA Guidelines Amendments for Greenhouse Gas Emissions

Consistent with SB 97, on March 18, 2010, the CEQA Guidelines were amended to include references to GHG emissions. The amendments offer guidance regarding the steps lead agencies should take to address climate change in their CEQA documents.

According to OPR, lead agencies should determine whether GHG may be generated by a Proposed Project, and if so, quantify or estimate the GHG emissions by type and source. Second, the lead agency must assess whether those emissions are individually or cumulatively significant. When assessing whether a Project's effects on climate change are cumulatively considerable, even though its GHG contribution may be individually limited, the lead agency must consider the impact of the Project when viewed in connection with the effects of past, current, and probable future projects. Finally, if the lead agency determines that the GHG emissions from the Proposed Project are potentially significant, it must investigate and implement ways to avoid, reduce, or otherwise mitigate the impacts of those emissions.

The Amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The Preliminary Amendments maintain CEQA discretion for lead agencies to establish thresholds of significance based on individual circumstances.

The guidelines developed by OPR provide the lead agency with discretion in determining what methodology is used in assessing the impacts of greenhouse gas emissions in the context of a particular Project. This guidance is provided because the methodology for assessing GHG emissions is expected to evolve over time. The OPR guidance also states that the lead agency can rely on qualitative or other performance based standards for estimating the significance of GHG emissions.

California Air Resources Board: Scoping Plan

On December 11, 2008, the CARB adopted the Scoping Plan as directed by AB 32 (CARB 2008a). The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California. The measures in the Scoping Plan approved by the Board will be in place by 2012, with further implementation details and regulations to be developed, followed by the rulemaking

process to meet the 2012 deadline. Measures include a cap-and-trade system, car standards, low carbon fuel standards, landfill gas control methods, energy efficiency, green buildings, renewable electricity standards, and refrigerant management programs. The cap-and-trade system was implemented as recently as October 28, 2011. [1]

California businesses are required to report their annual GHG emissions. This requirement is contained within sections 95100-95133 of Title 17, California Code of Regulations. It establishes who must report GHG emissions to the CARB and sets forth the requirements for measuring, calculating, reporting and verifying those emissions. The rule specifies a reporting threshold of 25,000 metric tonnes of CO2.

California Climate Action Registry General Reporting Protocol

The California Climate Action Registry is a program of the Climate Action Reserve and serves as a voluntary GHG registry. The California Climate Action Registry was formed in 2001 when a group of chief executive officers, who were investing in energy efficiency projects that reduced their organizations' GHG emissions, asked the state to create a place to accurately report their emissions history. The California Climate Action Registry publishes a General Reporting Protocol, which provides the principles, approach, methodology, and procedures to estimate such emissions. ConocoPhillips voluntarily participated in this registry. [2]

California Air Resource Board Proposed Mandatory Reporting Regulation

The Air Resources Board approved a mandatory reporting regulation in December 2007, which became effective January 2009 (which appears at sections 95100-95133 of title 17, California Code of Regulations), which requires the mandatory reporting of GHG emissions for specific industries emitting more than 25,000 metric tonnes of CO2 equivalent per year. [3]

California Air Resource Board Proposed Cap-and-Trade Regulation

Local Regulations and Programs

County Climate Action Plan

The County Department of Planning and Building expects to complete a Climate Action Plan (CAP) in 2011, as a blueprint for reducing greenhouse gas emissions. Additionally, the Department aims to establish a Green Building Ordinance to improve energy efficiency in new and existing development. The CAP will focus on local actions to reduce GHG emissions through energy efficiencies, including: retrofitting existing buildings; reversing rural sprawl; and increasing use of non-fossil fuels such as solar and wind energy (SLOC 2011).

County General Plan, Conservation, and Open Space Element

The County Board of Supervisors in 2010 adopted a comprehensive Conservation and Open Space Element with a focus on reducing GHG emissions, increasing energy efficiency, and using local renewable energy.

4.1.3 Significance Criteria

According to the December 2009 SLOC APCD CEQA Air Quality Handbook, project impacts may be considered significant if one or more of the following special conditions apply:

The California Air Resource Board has recently proposed a rule to develop a cap-and-trade type system applicable to specific industries that emit more than 25,000 metric tonnes of CO2 equivalent per year. This rule is currently undergoing review and is not yet adopted.

- If any of the thresholds are exceeded;
- If the Project has the ability to emit hazardous or toxic air pollutants in the close proximity of sensitive receptors such that an increased cancer risk affects the population;
- If the Project has the potential to emit diesel particulate matter in an area of human exposure, even if overall emissions are low;
- Remodeling or demolition operations where asbestos-containing materials will be encountered;
- If naturally occurring asbestos has been identified in the Project area;
- If the Project has the ability to emit hazardous or toxic air pollutants in the close proximity of sensitive receptors such as schools, churches, and hospitals;
- • If the Project results in a nuisance odor problem to sensitive receptors; and
- If more than 4 acres are graded at any given time.

The CEQA Air Quality Handbook defines thresholds for long-term operational emissions and short-term construction related emissions. Depending on the level of exceedance of a defined threshold, the SLOC APCD has established varying levels of mitigation.

4.1.3.1 Operational Thresholds

Table 4.1-11 shows the threshold criteria established by the SLOC APCD to determine a Project's significance and appropriate mitigation level for long-term operational emissions (i.e., vehicular and area source emissions). Emissions that equal or exceed the designated threshold levels are considered potentially significant and shall be mitigated. For projects requiring air quality mitigation, the SLOC APCD has developed a list of both standard and discretionary mitigation strategies tailored to the type of Project proposed: residential, commercial, or industrial.

Comment [F16]: In some cases this is referred to as "interim" thresholds. Should be consistent in this reference. 1

Table 4.1-11 SLOC APCD Thresholds of Significance for Operational Emissions Impacts

Pollutant	Daily	Annual
ROG + NOx	25 pounds	25 tons
Diesel Particulate Matter	1.25 pounds	-
Fugitive Dust Particulate Matter (PM_{10})	25 pounds	25 tons

CO	550 pounds	-

Source: SLOC APCD 2009

Construction Thresholds

Use of heavy equipment and earth-moving operations during Project construction generates fugitive dust and combustion emissions that may have substantial temporary impacts on local air quality. Fugitive dust emissions would result from land clearing, demolition, ground excavation, cut and fill operations, and equipment traffic over temporary roads. Combustion emissions, such as NOx and ROG, are most significant when using diesel-fueled equipment, such as loaders, dozers, haul trucks, compressors, and generators. Table 4.1-12 lists construction thresholds.

Table 4.1-12 SLOC APCD Thresholds of Significance for Construction Emissions Impacts

Pollutant	Daily	Quarterly Tier 1	Quarterly Tier 2
ROG + NOx	137 pounds	2.5 tons	6.3 tons
Diesel Particulate Matter	7 pounds	0.13 tons	0.32 tons
Fugitive Dust Particulate Matter (PM_{10})		2.5 tons	-

Source: SLOC APCD 2009

Exceeding Tier 1 emissions thresholds requires the implementation of a listing of standard mitigation measures and best available control technologies (BACT). Tier 2 requires the implementation of a construction activity management plan in addition to Tier 1 requirements. If emission levels cannot be decreased to less than the Tier thresholds, then offsite mitigation may be necessary.
There are no construction activities involved in this project.1

Greenhouse Gases Thresholds

At the time of writing, only a few air districts in California have drafted adopted thresholds for GHG emissions. Table 4.1-13 lists these districts and summarizes the adopted threshold level. The CEQA Guidelines must be amended to address climate change by 2010 (according to SB 97 in 2007). The California Governor's OPR recently developed amendments to the CEQA guidelines, which state that an Environmental Impact Report must:

- Describe, calculate, or estimate the amount of GHG emissions resulting from a project;
- Use a model or methodology to quantify GHG emissions resulting from a project;
- Rely on a qualitative analysis or performance-based standards;
- Consider the extent to which the project may increase or reduce GHG emissions in comparison to the existing environmental setting;
- Consider whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

- Consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan.

Table 4.1-13 Current Draft or Proposed GHG Thresholds in California

District/Area	Threshold Level MTCO2e	Notes
Bay Area AQMD	1,100 /year non-stationary land use development projects 10,000/year stationary sources	Adopted 12/2009
City of Orange	10,000 /year (industrial) 3,000 / year (residential, commercial & mixed-use)	Interim guidance 4/2010
San Joaquin APCD Kern County	Reduce from business as usual by 29% by 2020 combined with performance standards	
South Coast AQMD	10,000 for stationary/industrial sources 3,000 for residential developments	Adopted by board 12/2008 Residential is in draft form
Title 17 reporting requirements	25,000 and above for non-listed sources, 20,000 after 3 years for listed sources	

Note: AQMD = Air Quality Management District, CAPCOA = California Air Pollution Control Officers Association
Sources: Environmental Monitor 2009, BAAQMD 2009, CARB 2008, SJVAPCD 2009, City of Orange 2008, SCAQMD 2008

Based on other jurisdictions' draft and adopted thresholds (see Table 4.1-13) for industrial development, the following thresholds are proposed for this Environmental Impact Report. The Proposed Project would be less than significant if it meets this criterion:

> Industrial/commercial development Project below 10,000 MTCO2e per year, including transportation with amortized construction emissions (SCAQMD 2008).

Air Toxic Health Risk Thresholds

SLOC APCD Rule 219, Toxics New Source Review, defines acceptable levels of health risk for regulated sources. Rule 219 identifies significance thresholds as follows:

> The facility-wide risk from any source shall not exceed ten (10.0) in a million for cancer or a health hazard index (HHI) of one (1.0) for either chronic non-cancer or acute health impacts, unless that facility is included in the Air Toxics Hot Spots program by the District, and the source simultaneously develops and implements an APCO-approved airborne toxic risk reduction audit and plan, as codified in Chapter 6, Facility Toxic Air Contaminant Risk Reduction Audit and Plan, of the California Health and Safety Code.

These thresholds were utilized to evaluate facility-wide risk following the implementation of BACT, which could include the use of cleaner diesel engines and implementing California verified diesel emission control strategies, such as the installation of catalysts.

4.1.4 Project Impacts

Project operations could increase emissions of criteria pollutants from Refinery equipment and from offsite mobile emissions; could increase GHG emissions; and could increase health risk impacts. Potential increases in emissions would occur both from Refinery operations and from offsite, mobile sources.

Deleted: could increase odor events; 1

Impact #	Impact Description	Residual Impact
AQ.1	Operational activities at the Refinery and offsite would generate emissions that exceed SLOC APCD thresholds.	Class II

Refinery Operations

The Proposed Project would generate an increase in air emissions due to the following activities:

- Increased use of facility equipment, including heaters in the crude, vacuum, and coking sections, boilers and cooling towers;
- Increased fugitive emissions from crude oil tanks;
- Increased fugitive dust emissions from increased quantities of coke handling;
- Increased indirect emissions from the transportation of crude oil to the Refinery; and
- Increased indirect emissions from the transportation of materials away from the Refinery.

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Deleted: coke heaters 5

Some equipment and operations would not experience an increase in emissions with an increase in crude oil throughout, including the following:

- Emissions from emergency diesel engines;
- Flare stack emissions;
- Fugitive emissions from Refinery pumps, compressors, valves; and connectors
- Emissions associated with solvent use and other miscellaneous sources.

Deleted: fired firewater pumps 8

Emissions associated with an increase in crude oil processed would be a linear increase in emissions in relation to the level of crude oil processed for most equipment. The amount of gas used to heat the crude oil would increase by the same level as the increased throughput of crude oil. This is true for most of the combustion processes at the facility (except emergency standby combustion devices). Therefore, an estimate of facility emissions associated with the Proposed Project crude oil throughput increase was produced by increasing the 2009 emissions by the ratio of the Proposed Project crude oil throughput level to the crude oil throughput level in 2009. Table 4.114 shows the equipment categories, whether they would be affected by a crude oil throughput increase, and the resulting emissions.

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The increase beyond the baseline listed in Table 4.1-14 is the increase in addition to the emissions from the Refinery operating at the current permitted level of 44,500 bpd (see Section 2.0, Project Description). These increased emissions levels would be greater than 2009 levels

since the crude oil throughput in 2009 was less than the permitted level, and the permitted level was determined to be the baseline based on past CEQA documents prepared for the facility.

REPLACE Table with corrected Table 4.1-14 for project emissions (Exhibit 2 of the cover letter dated Oct.31, 2011):

Annual Emissions, Tons/Year

Equipment Description	Affected?	TOG	ROG	CO	NOx	SO2	PM	PM-10	PM-2.5
Diesel Pumps and Compressors	N	0.1	0.1	0.3	1.3	0.0	0.1	0.1	0.1
Crude Heaters B2A/B	Y	4.0	2.0	0.0	17.6	36.6	2.8	2.6	2.6
Vacuum Heaters B62A/B	Y	0.7	0.3	0.3	2.3	3.2	0.5	0.4	0.4
Coke Heaters B102A/B	Y	4.3	2.1	0.1	20.2	43.4	3.0	2.8	2.8
Steam Superheaters B201A/B	Y	0.2	0.1	0.0	2.0	2.1	0.1	0.1	0.1
Boilers B504/506	Y	6.3	3.2	2.4	20.4	36.3	4.4	4.4	4.4
Generators B505/B507	Y	1.1	0.5	2.5	13.3	20.6	2.3	2.3	2.3
Sulfur Plant Incinerator B602A/B	N	0.2	0.1	1.3	1.5	22.7	0.1	0.1	0.1
Tail Gas Combustor B702	N	0.2	0.1	1.3	1.6	1.6	0.1	0.1	0.1
Flare Stack C451	N	0.3	0.1	0.8	0.1	0.0	0.0	0.0	0.0
Oily water treatment system	N	4.8	4.7	0.0	0.0	0.0	0.0	0.0	0.0
Cooling towers	N	2.8	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Sulfur pit vents	Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fugitive Emissions: non-crude tank	N	6.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0
Fugitive Emissions: crude tank	Y	9.9	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Coke Storage - Carbon Plant	N	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0
Coke handling and conveying	Y	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.1
Misc Sources (solvent use, etc)	N	0.3	0.3	0.0	0.1	0.0	0.0	0.0	0.0
Total, tons/yr		***41.6***	***31.4***	***8.9***	***80.4***	***167***	***14.0***	***13.3***	***13.0***
Increase over 44,500 permit, tons/yr		***2.4***	***1.6***	***0.5***	***6.9***	***12.9***	***1.2***	***1.2***	***1.1***

Average Daily Emissions, lbs/day

Equipment Description	Affected?	TOG	ROG	CO	NOx	SO2	PM	PM-10	PM-2.5
Diesel Pumps and Compressors	N	0.6	0.4	1.5	7.1	0.1	0.5	0.5	0.5
Crude Heaters B2A/B	Y	21.8	10.9	0.0	96.2	200.3	15.1	14.3	14.0
Vacuum Heaters B62A/B	Y	3.6	1.8	1.6	12.8	17.7	2.5	2.4	2.3
Coke Heaters B102A/B	Y	23.5	11.7	0.4	110.5	237.9	16.2	15.4	15.1
Steam Superheaters B201A/B	Y	1.2	0.6	0.0	11.0	11.7	0.8	0.8	0.7
Boilers B504/506	Y	34.8	17.4	12.9	111.7	198.8	24.0	24.0	24.0
Generators B505/B507	Y	5.9	3.0	13.5	72.8	113.0	12.5	12.5	12.5
Sulfur Plant Incinerator B602A/B	N	0.9	0.5	6.9	8.2	124.4	0.6	0.6	0.6
Tail Gas Combustor B702	N	1.0	0.5	7.4	8.8	9.0	0.7	0.7	0.7
Flare Stack C451	N	1.6	0.6	4.2	0.8	0.1	0.0	0.0	0.0
Oily water treatment system	N	26.3	25.6	0.0	0.0	0.0	0.0	0.0	0.0
Cooling towers	N	15.5	15.5	0.0	0.0	0.0	0.0	0.0	0.0
Sulfur pit vents	Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fugitive Emissions: non-crude tank	N	35.4	32.9	0.0	0.0	0.0	0.0	0.0	0.0
Fugitive Emissions: crude tank	Y	54.2	49.5	0.0	0.0	0.0	0.0	0.0	0.0
Coke Storage - Carbon Plant	N	0.0	0.0	0.0	0.0	0.0	1.6	0.8	0.2
Coke handling and conveying	Y	0.0	0.0	0.0	0.0	0.0	2.2	1.1	0.3

Comment [e17]: The calculation for the Increase over Baseline, found in the datasheet in attached CD, is incorrect and needs to be changed. The assumptions as to what is affected is incorrect. The Affected designation for diesel pumps, compressors Sulfur Plant Incinerator, Tail Gas Combustor, Oily water treatment, and Cooling Tower should be "N".
IF affected column is changed to "N" for each device, the result would be negative emissions for the refinery, which is not possible.
Increase over Baseline 2009 was incorrect, and has been corrected appropriately.

We welcome the opportunity to meet with you to discuss this comment. 3

Comment [F18]: Just to clarify potential to potential and not actual 4

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Note: "Affected" means that the equipment would experience emissions increase if crude oil throughput is increased. The increase over baseline is the amount of emissions that would occur above a crude throughput value of 44,500 bpd and are not compared in this table to actual emissions shown in Table 4.1-7.. Although diesel equipment is primarily backup generators, which would not experience an increase, some diesel powered equipment m increase usage with an increase in throughput. ¶
Source: SLOC APCD derived data in this table from data 5

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Misc Sources (solvent use, etc)	N	1.7	1.7	0.1	0.5	0.0	0.0	0.0	0.0
Total, lbs/day		***227.8***	***172.2***	***48.5***	***440.5***	***913***	***76.7***	***73.1***	***71.0***
Increase over 44,500 permit, lbs/day		***13.2***	***8.6***	***2.6***	***37.7***	***70.9***	***6.7***	***6.4***	***6.3***

Note: "Affected" means that the equipment would experience emissions increase if crude oil throughput is increased. The increase over baseline is the amount of emissions that would occur above a crude throughput value of 44,500 bpd and are not compared in this table to actual emissions shown in Table 4.1-7.. Although diesel equipment is primarily backup generators, which would not experience an increase, some diesel powered equipment may increase usage with an increase in throughput. Source: SLOC APCD derived Table from data submitted by ConocoPhillips.

Comment [F19]: Just to clarify potential to potential and not actual 1

An increase in emissions of criteria pollutants (CO, ROG, NOx, SO2, and PM) during operations would occur due to the increased intensity of operations of the Refinery equipment needed to process the additional crude oil. The ROG+NOx emissions associated with the daily emissions would increase by more than the APCD thresholds. Daily emissions of diesel particulate matter, fugitive dust or CO would be below the thresholds. The annual emissions of ROG+NOx and fugitive dust would also be less than the thresholds. Increases in emissions would be subject to New Source Review requirements.

Offsite Mobile Emissions

Air emissions of criteria pollutants (CO, ROG, NOx, SO2, and PM) during operations would also increase as a result of increased transportation of materials associated with the Refinery operations. Increased transportation would occur from the following activities:

- Increased generation of sulfur due to an increase in crude oil processing;
- Increased generation of coke due to an increase in crude oil processing; and
- Increased movements of crude oil to supply the Refinery increase in crude oil throughput.

Each of these increased activities would generate additional emissions. The level of increase in emissions associated with the transportation of crude oil would be a function of the crude oil origin and the transportation methods. At this time, it is not known where the additional crude oil would come from that would allow the Refinery to operate at a higher throughput level. Increased throughput could be produced from onshore fields or from offshore fields. It could be transported by pipeline or it could be transported by truck to the Santa Maria Pump Station. Since the mode and source of the transportation are not known, a reasonable worst-case scenario is defined where the additional crude oil would come from onshore sources and would be transported by truck to the Santa Maria Pump Station. This scenario would produce the highest emissions associated with an increase in crude deliveries to the Refinery.

The Proposed Project would not increase the emissions associated with employees or miscellaneous Refinery deliveries since an increase in the crude oil throughput would not increase employee travel or miscellaneous deliveries.

Emissions associated with offsite mobile emissions from 2009 are compared to emissions for the Proposed Project in Table 4.1-15. Daily emissions of ROG+NOx and diesel particulate matter would increase more than the APCD thresholds. Annual thresholds would not be exceeded.

Comment [F20]: Please see cover letter dated Oct. 31, 2001 for comments concerning mobile emission calculations 5

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Table 4.1-15 Offsite Mobile Emissions – Proposed Project Operations

Source	Peak Day Emissions, lbs/day						Total Emissions, Tons or Tons/yr								
	ROG	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	ROG	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$	N2O	CH4	CO2
Within SLO County															
Workers/Visitors weekdays	1.45	41.72	4.65	0.05	0.48	0.23	0.19	5.42	0.60	0.01	0.06	0.03	0.03	0.05	617
Workers/Visitors weekends	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.01	0.00	0.00	0.00	0.00	0.00	15
LDT trucks - misc refinery deliveries	0.17	4.72	0.60	0.00	0.03	0.02	0.03	0.86	0.11	0.00	0.01	0.00	0.01	0.01	63
HHDT Trucks - coke export	8.86	44.39	187.50	0.25	7.02	5.87	1.62	8.10	34.22	0.05	1.28	1.07	0.07	0.07	4887
HHDT Trucks - sulfur export	0.91	4.57	19.28	0.03	0.72	0.60	0.17	0.83	3.52	0.00	0.13	0.11	0.01	0.01	503
HHDT Trucks - crude deliveries to SM	5.00	25.04	105.77	0.14	3.96	3.31	0.91	4.57	19.30	0.03	0.72	0.60	0.04	0.04	2757
Locomotives to Long Beach- SLOC	0.72	2.10	12.86	0.00	0.44	0.40	0.02	0.05	0.28	0.00	0.01	0.01	0.00	0.00	17
Total	***17.11***	***122.54***	***330.67***	***0.47***	***12.66***	***10.44***	***2.94***	***19.96***	***58.05***	***0.08***	***2.22***	***1.83***	***0.16***	***0.18***	***8358***
Increase over Baseline	***3.44***	***17.21***	***72.70***	***0.10***	***2.72***	***2.28***	***0.63***	***3.14***	***13.29***	***0.02***	***0.50***	***0.42***	***0.03***	***0.03***	***1896***
Kern County															
HHDT Trucks - sulfur export	0.63	3.17	13.40	0.02	0.50	0.42	0.12	0.58	2.45	0.00	0.09	0.08	0.01	0.01	***349***
HHDT Trucks - coke export	11.82	59.19	250.00	0.34	9.36	7.83	2.16	10.80	45.63	0.06	1.71	1.43	0.09	0.10	***6516***
Total	***12.45***	***62.36***	***263.40***	***0.35***	***9.86***	***8.25***	***2.27***	***11.38***	***48.07***	***0.06***	***1.80***	***1.51***	***0.10***	***0.10***	***6865***
Increase over Baseline	***0.86***	***4.32***	***18.23***	***0.02***	***0.68***	***0.57***	***0.16***	***0.79***	***3.33***	***0.00***	***0.12***	***0.10***	***0.01***	***0.01***	***475***
Santa Barbara County															
HHDT Trucks - crude deliveries to SM	1.12	5.61	23.69	0.03	0.89	0.74	0.20	1.02	4.32	0.01	0.16	0.14	0.01	0.01	***617***
Locomotives to Long Beach- SBC	16.13	47.32	290.04	0.01	10.04	9.03	0.36	1.05	6.41	0.00	0.22	0.20	0.03	0.01	***386***
Total	***17.25***	***52.93***	***313.73***	***0.04***	***10.93***	***9.78***	***0.56***	***2.07***	***10.74***	***0.01***	***0.38***	***0.34***	***0.04***	***0.02***	***1004***
Increase over Baseline	***0.61***	***3.04***	***12.83***	***0.02***	***0.48***	***0.40***	***0.14***	***0.63***	***2.78***	***0.00***	***0.10***	***0.09***	***0.01***	***0.01***	***361***
Monterey County															
HHDT Trucks - crude deliveries to SM	1.50	7.51	31.71	0.04	1.19	0.99	0.27	1.37	5.79	0.01	0.22	0.18	0.01	0.01	***827***
Increase over Baseline	***0.31***	***4.06***	***17.17***	***0.02***	***0.64***	***0.54***	***0.15***	***0.74***	***3.13***	***0.00***	***0.12***	***0.10***	***0.01***	***0.01***	***447***
Ventura County															
Locomotives to Long Beach- VC	8.65	25.37	155.48	0.00	5.38	4.84	0.19	0.56	3.44	0.00	0.12	0.11	0.02	0.01	***207***
Increase over Baseline	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.01***	***0.04***	***0.24***	***0.00***	***0.01***	***0.01***	***0.00***	***0.00***	***14***
Los Angeles County															
Locomotives to Long Beach- LAC	8.32	24.39	149.50	0.00	5.17	4.66	0.18	0.54	3.31	0.00	0.11	0.10	0.02	0.01	***199***
Increase over Baseline	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.01***	***0.04***	***0.23***	***0.00***	***0.01***	***0.01***	***0.00***	***0.00***	***14***
Total All Counties Increase Over Baseline	***5.72***	***28.63***	***120.92***	***0.16***	***4.53***	***3.79***	***1.09***	***5.38***	***23.00***	***0.03***	***0.86***	***0.72***	***0.05***	***0.05***	***3208***

Notes: Increase over baseline operations is the potential[1] increase under the new permit level[2] over the potential[3] emissions from the permitted operations at 44,500 bpd and are not compared in this table to actual emissions shown in Table 4.1-8.[4] [5]Santa Barbara APCD Significance Threshold for mobile sources is 25 lbs NOx/day. Monterrey APCD Significance Threshold for is 137 lbs NOx or VOC/day. San Joaquin (Kern County) APCD Significance Threshold for is 10 tons NOx or VOC/year. SCAQMD threshold is 100 trucks per day.[8]

Data source??[9]

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Comment [F21]: Please clarify existing permit potential emissions compared to proposed project permitted potential emission rate (is not same as actual, measured emissions) [7]

Comment [F22]: Data source is included for other tables. For consistency, should be shown in Notes. Data source is not clear. [10]

Table 4.1-16 shows offsite potential emissions and SMF emissions and the APCD thresholds .

Table 4.1-16 Permit Potential Emissions Increases and APCD Thresholds – SMF and Offsite Mobile Sources

Thresholds	Permit Potential Daily Emissions, pounds		Permit Potential Annual Emissions, tons	
	Thresholds	Project	Thresholds	Project
ROG + NOx	25	122.5	25	22.4
Diesel Particulate Matter	1.25	2.7	-	-
Fugitive Dust Particulate Matter (PM_{10})	25	0.6	25	0.7
CO	550	19.8	-	-

Emissions associated with Refinery operations could increase to the new permit potential emission rate due to the increased use of equipment associated with crude oil processing. Emissions associated with the transportation of sulfur and coke and the delivery of crude oil to the Santa Maria Pump Station would also increase. The increase in potential permitted emissions would be more than the APCD thresholds and would therefore be a significant impact.

Mitigation Measures

AQ-1.1 Prior to issuance of the updated permit and increase in Refinery throughput, the Applicant shall apply BACT on the crude heaters, coker heater and boilers B504/506, and/or utilize an equivalent method onsite with other equipment, to reduce the NOx emissions to less than the APCD thresholds.

AQ-1.2 To the extent feasible, all trucks under contract to the SMF shall meet EPA 2010 or 2007 model year NOx and PM emission requirements and a preference for the use of rail over trucks for the transportation of coke shall be implemented to the extent feasible in order to reduce offsite emissions. Annual truck trips associated with refinery operations and their associated model year and emissions shall be submitted to the APCD annually.

AQ-1.3 Prior to issuance of the updated permit, if emissions cannot be mitigated below significance thresholds through implementation of mitigation measures AQ-1.1 and AQ-1.2, then offsite mitigation will be required as per APCD guidance in the CEQA Handbook.

Residual Impacts

Implementing the recommended mitigation measure, for example, to use the low-NOx burners on the crude heater, the coke heater and the boilers B504/506 to reduce the NOx emissions to 21 ppm from 30 ppm could reduce the potential to emit NOx emissions from this equipment by almost 84 pounds NOx per day. Boiler B507 is a relatively new boiler designed with forced draft and flue gas recirculation to achieve the NOx limit of 21 ppm. Implementing this technology at other boilers would reduce boiler NOx emissions. The Refinery could also implement other

Comment [F23]: Please see comment letter dated Oct. 31, 2011 for comments on Offsite Emission calculations.

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Comment [F24]: Please see our comment letter dated October 31, 2011 for our comments regarding Mitigation Measures AQ1.1, AQ 1.2 and AQ 1.3.

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emission controlling techniques on heaters, as safe design practices allow, to reduce heater NOx emissions, if a significant increase warrants the mitigation. The mitigated emissions increases with lower NOx emissions are listed in Table 4.1-17.

Table 4.1-17 Refinery and Mobile Emissions
Permit Potential Emisson Increases and APCD Thresholds - Mitigated

Thresholds	Daily Emissions, pounds		Annual Emissions, tons	
	Thresholds	Project	Thresholds	Project
ROG + NOx	25	38.2	25	7.0
Diesel Particulate Matter	1.25	2.9	-	-
Fugitive Dust Particulate Matter (PM_{10})	25	1.2	25	0.8
CO	550	20.7	-	-

Notes: Fugitive dust is calculated from coke handling operations only

Emissions of ROG+NOx and emissions of diesel particulate matter would remain greater than the APCD thresholds primarily due to offsite use of four additional diesel trucks per day. Mitigation measures to reduce offsite, mobile emissions are more difficult to address since locomotive emissions are outside the control of the Refinery and oil and gas companies that supply the crude oil to the Santa Maria Pump Station deliver the oil on their own, independent of ConocoPhillips control or oversight. However, some reduction in emissions could be realized by requiring companies that contract with the Refinery to utilize newer, cleaner trucks for the four truck increase. This would reduce emissions substantially. The EPA NOx and PM limit on heavy duty truck(HDT) diesel engines for model year 2010 produces close to a 90 percent reduction over earlier models. However, the feasibility of implementing this measure for the wide range of companies and truck types associated with the offsite Refinery operations is not clear. For the remaining emissions, offsite emission reductions shall be secured if available to offset the amount of emissions exceeding APCD's thresholds and reduce the Project emissions to a level of *less than significant with mitigation* (Class II).

Impact #	Impact Description	Residual Impact
AQ.2	Operational activities will not increase the frequency or duration of odor events. .	Class II

The release of material that contains even small amounts of sulfur compounds (H2S) or hydrocarbons produces an odor. Several compounds associated with the oil and gas industry can produce nuisance odors. Sulfur compounds, found in oil and gas, have very low odor threshold levels.

Odor thresholds are defined as the point at which a person can detect the substance. Below the odor threshold, a person would not smell anything. According to the American Industrial Hygiene Association, the odor detection threshold is the lowest concentration of odorant that will elicit a sensory response in the olfactory receptors of a specified percentage of a given population (AIHA 1989). The annoyance level would be a higher concentration.

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Comment [e25]: The B-507 was designed with flue gas recirculation (FGR) for low NOx. Burner design for heaters are completely differentthan designs for boilers and do not have FGR. Also the air supplied to the heaters are natural draft were as the B-507 Boiler has a blower or forced drafted. 7

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Comment [F26]: Please see comments in cover letter dated Oct. 31, 2011 for mobile emissions. 11

Comment [F27]: The discussion of air quality impacts in our October 31, 2011 cover letter addresses the sections highlighted in yellow.13

Comment [F28]: Please refer to October 31, 2011 cover letter for comments highlighted in yellow. 18

For instance, H2S can be detected by humans at concentrations from 0.5 parts per billion (ppb) (detected by 2 percent of the population) to 40 ppb, qualified as annoying by 50 percent of the population. Above these levels, H2S would be detected by most people. The Occupational Safety and Health Administration limits occupational exposure to H2S at 20 ppm with a 50 ppm peak over 10 minutes (29 CFR 1910.1000 Z-2 Table). Inhaling 100 ppm can be lethal according to the Emergency Response Planning Guideline (AIHA 2008).

Many volatile compounds found in oil and gas (e.g., pentane, n-pentane, hexane, ethane, and longer chain hydrocarbons) typically have petroleum or gasoline odors with varying odor thresholds. The most odiferous of these compounds are pentane, which has an odor threshold of 2 ppm and hexane, which has an odor threshold between 68 and 248 ppm (New Jersey 2004).

Deleted: , and pentane, which has an odor threshold of 2 ppm [2]

Odor events could occur from many different situations associated with Refinery equipment operations. The equipment components could leak and cause odors. Tanks are equipped with hatches to protect them from overpressure. These hatches could lift, leading to odor events. However, the project does not require any change in this equipment. [3]

The storage of sulfur at the Refinery could also be a source of odors to nearby residences. Sulfur inventory, however, is limited in the existing permit. [4] The combustion of refinery gasses that contain sulfur produces SO2 which could travel downwind after combustion and produce odors. Although Total Sulfur in the refinery make gas is limited in the existing APCD permit to 797 ppm, it generally ranges from 250 to 300 ppm. The make gas is further treated in the process to levels of less than 5 ppm to meet existing limit of 160 ppm for refinery fuel gas. These limits and the recorded ranges of sulfur in the fuel gas will not change due to this project.

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Released materials that cause odors can travel a substantial distance since the odor thresholds for materials can be as low as parts per billion. Odor impacts associated with accidental releases or from normal operations at the Refinery could impact surrounding areas. Increased processing of crude oil, leading to increased movements of sulfur and increased emissions, could lead to increased frequency and/or duration of odor events. This would be considered a significant impact. [15]

Comment [F29]: Please refer to October 31, 2011 cover letter for comments highlighted in yellow. [14]

Mitigation Measure

AQ-2 *The Applicant shall prepare and submit an Odor Control Plan, which shall be approved by the APCD prior to the issuance of a revised permit. The Odor Control Plan shall identify all potential sources of odors at the Refinery. The plan shall detail how odors will be controlled at each odor source and the mechanism in place in the event of an upset or breakdown, as well as design methods to reduce odors, including redundancy of equipment (e.g., pumps and VRU compressors) or reductions in fuel gas sulfur content. Area monitoring shall be discussed. The Plan shall also include a complaint monitoring and reporting section and include a hotline number for individuals to call in case of a complaint.*

Comment [F30]: Please see comments in October 31, 2011 cover letter. The number of odor complaints at 3 per year do not support an onerous task as this. [16]

Comment [F31]: COP has an existing robust odor complaint monitoring and reporting system in place. [17]

Residual Impacts

Implementing these mitigation measures could reduce odor events that have resulted in odor complaints and notices of violation due to Refinery operations in the past.

Comment [F32]: Please see comments in October 31, 2011 cover letter. 1

These mitigation measures for odor impacts associated with normal operations would reduce odors to a level less than the current operations (less frequency and or shorter duration) and, although odors could still impact nearby residences, impacts are considered *less than significant with mitigation* (Class II).

Impact #	Impact Description	Residual Impact
AQ.3	Operational activities could increase GHG emissions.	Class II

Comment [F33]: Please see comments concerning GHG emissions and sections highlighted in yellow in cover letter dated Oct. 31, 2011 2

The majority of the GHG emissions come from the combustion of fossil fuels such as natural or Refinery fuel gas at the Refinery. Stationary combustion equipment at the Refinery creates the largest percentage of Refinery GHG emissions.

GHG associated with operations include emissions from combustion sources (e.g., flare, heaters, boilers, and electrical generators), offsite vehicles, and fugitive emissions that contain CO2 and methane. The largest source of GHG emissions are the heaters and the electrical generators. Table 4.1-19 shows the potential 5 GHG emissions for operations under the Proposed Project. Table 4.1-19 includes a comparison to the baseline operational emissions that would occur if the Refinery were operating at the permitted throughput level of 44,500 bpd.

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Comment [F34]: ConocoPhillips was unable to locate Table 4.1-19 in the Draft EIR, and therefore, is unable to evaluate and comment upon the accuracy of the information presented in the table. 4

Refinery operations account for more than 90 percent of the GHG emissions, with onsite stationary sources creating the vast majority of emissions and offsite mobile emissions accounting for the remaining percentage.

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The potential 11 GHG emissions estimated for this proposed project 12 utilizes the same approach as the criteria emissions estimate, whereby potential 13 emissions from equipment are assumed to increase proportional to the increase in crude throughput. Since the majority of emissions are associated with Refinery combustion from the crude oil heaters, the coke heaters, and boilers, which would have an increase in heating requirements as a function of the increase in crude oil throughput, this estimate is considered to be an accurate assessment of the Proposed Project 15 Potential GHG emissions.

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Potential 17 Emissions of GHG would be greater than the interim significance threshold of 10,000 metric tonnes CO2e. This increase will be captured under cap and trade program. 18

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Table 4.1-18 Refinery GHG Potential Emissions and Increase over the Baseline

Source Type	CO_2	N_2O	CH_4	SF_6	Total CO_2 Equivalent Emissions
Refinery					
Stationary Combustion	259,563	0.5	4.4	0	259,806
Mobile Combustion	751	0.0	0.0	0	780
Refrigerant Usage	0	0.0	0.0	0	20
Sulfur Recovery	9,617	0.0	0.0	0	9,617
Water Processes	0	0.2	1.5	0	105
VOC Fugitives	0	0.0	0.5	0	11
SF6 Usage	0	0.0	0.0	0	0
Purchased Electricity	2279	0.0	0.1	0	2282
TOTAL REFINERY	272,210	1.0	6	0	272,621
Offsite Mobile					
Workers commuting	568	0.0	0.0	0	577
LDT trucks - misc Refinery deliveries	57	0.0	0.0	0	60
HHDT Trucks -coke export	10,262	0.1	0.2	0	10,311
HHDT Trucks - sulfur export	767	0.0	0.0	0	770
HHDT Trucks - crude deliveries to SMPS	3,780	0.1	0.1	0	3,799
Locomotives to Long Beach	728	0.1	0.0	0	747
TOTAL MOBILE	16,163	0.3	0.3	0	16,264
TOTAL					288885
Increase Over Baseline Operations					20,470

Source: Data submitted to SLOC APCD by ConocoPhillips (see also Exhibit 5 of Oct. 31, 2011 cover letter) Refinery emission data increased by the ratio of crude throughput from 2007 GHG year to Proposed Project operations. Data from 2009 offsite mobile sources submitted by ConocoPhillips used to derive Offsite Mobile project data.

Mitigation Measure

AQ-3 *The Applicant shall implement a program to increase efficiency of the Refinery stationary combustion devices to maintain Potential permitted GHG emissions to less than the APCD interim thresholds (10,000 metric tonnes per year) over the emissions associated with the current permitted throughput. In addition to increasing stationary equipment efficiency, additional measures may include the use of more efficient model year trucks or alternative fueled vehicles for hauling vehicles. If after all applicable measures have been implemented, emissions are still over the thresholds, then off-site mitigation will be required. The off-site mitigation measures shall be approved by the APCD prior to permit issuance.*

Comment [e35]: This table is incorrect. The coke process emissions were related to the Calciner which was in operation in 2007. It is no longer in service. Mobile combustion does not change with crude throughput. Purchased electricity is an indirect source and with the increase of crude throughput there will be more electricity produced and less purchased. Therefore this value should decrease. Also: Units should be shown.

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Comment [F36]: A more consistent comparison would be 2009. The emission inventory uses 2009 baseline. This year may include the calciner.

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Comment [F37]: See Cover Letter dated Oct. 31, 2011 for comment on GHG emissions. Correct as appropriate.

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Residual Impacts

A substantial majority of GHG emissions are produced from combustion of produced gas at the Refinery. By increasing the efficiency of the use of this gas, more electricity and heat could be generated for each unit of gas and GHG emissions could be reduced. However, at high crude oil throughput rates, the Refinery will continue to control surplus gas to prevent flaring, a permit-prohibited event. The use of newer, more efficient trucks as well as the availability of alternative-fueled trucks is uncertain. Emissions reductions within the community shall be obtained to further reduce emissions to below the significance thresholds, as per APCD requirements. A combination of these mitigation measures could reduce the GHG emissions to below the interim threshold of 10,000 tons per year which would reduce the emissions to less than significant with mitigation. (Class II).

Comment [F38]: Please see comment in cover letter dated Oct. 31, 2011. [2]

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Impact #	Impact Description	Residual Impact
AQ.4	Potential increased operations at the refinery would emit air-borne toxic materials.	Class III

The increase in throughput associated with the Proposed Project would increase potential [12] emissions at the Refinery and along transportation routes between the Refinery and area highways. Some of these emissions would be toxic materials that could increase health risks for populations near to the Refinery.

A toxic emission inventory was developed for the Refinery in 2004, which included only stationary sources at the SMF. The 2004 inventory was used in the 2004 health risk assessment which utilized the California Air Resources Board's Hotspots Analysis and Reporting Program model to assess the cancer, chronic, and acute health risk impacts. This is the most recent assessment of toxic emissions and health risk. The primary cause of health risk impacts at the Refinery in 2004 was determined to be the diesel-driven cooling water pump. In 2005, a diesel oxidation catalyst (DOC) was installed on the diesel cooling water pump to reduce diesel particulate emissions by 30 percent. The installation of the DOC and shutdown of calcining operations in early 2007 resulted in a reduction in health risk levels to 15 cancer cases per one million at the Refinery boundary (ConocoPhillips, 2007).

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Since 2004, several additional changes at the Refinery have reduced toxic emissions, including shutting down the calciner, installation of various DOC and diesel particulate filters (DPF) on several diesel engines and reductions in fugitive emission estimates with a more rigorous fugitive emissions control program. Additionally, in 2011 the refinery replaced the diesel-driven cooling water circulation pump with a natural gas engine and catalyst filter, which has further reduced risk levels by at least 80 percent. This would reduce health risk levels to approximately 5 cases per one million.

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An increase in toxic emissions associated with the Proposed Project would increase health risks. With increased emissions, the health risk from the facility would also increase. However, since diesel-driven uncontrolled water pumps in the coke processing area contributed the majority of the risk in the 2004 HRA Analysis, the increase in health risk from a 10 percent increase in

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emissions at the Refinery would be equal to 5.5 cases per million. HI associated with acute and chronic impacts would be estimated at 0.13 HI and 0.23 HI, respectively. The acute impacts were reduced when calciner operations were shutdown, in 2007. These levels are less than the health risk thresholds of 10 in one million (for cancer) and 1.0 HI for acute and chronic impacts and would be less than significant.

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Diesel-powered trucks traveling along area roadways could also increase health risks associated with emissions. Modeling was conducted using Aeromod to assess the impacts of truck traffic along area roadways between the Refinery and U.S. Highway 101. The cancer risks associated with truck traffic as a result are calculated to increase over the baseline to a level of 5.9 cancer cases per million immediately south of the Refinery along area roadways. This would be less than the thresholds and would be a less than significant impact.

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Mitigation Measure

None required

Residual Impacts

Health risks associated with the mitigated Project operations would be less than all applicable health risk criteria and impacts would be considered *less than significant* (Class III).

4.1.5 Other Issue Area Mitigation Measure Impacts

No other issue area mitigation measures are anticipated to produce additional air quality and greenhouse gas impacts. Therefore, the mitigation measures would not result in additional significant impacts, and additional analysis or mitigation is not required.

4.1.6 Cumulative Impacts

With one exception, none of the proposed developments in the cumulative projects list (see Section 3.0, Cumulative Projects) would be constructed near the Proposed Project area so there would be no localized impacts associated with cumulative projects. The Sheridan Properties development project would construct 21 industrial units on approximately 13 acres east of the SMF. Impacts of the development project would be a function of the type of industrial development proposed for the site. Any substantial emission sources at the proposed Sheridan Properties site could increase impacts associated with health risk between the Sheridan site and the SMF. Since the Sheridan Properties industrial uses have not been defined at this point, the impacts could be potentially cumulatively significant.

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Regional impacts could be realized since multiple projects would emit into the South Central Coast Air Basin at the same time. Most of these projects are within the South County planning area. All residential projects within the South County planning area are subject to the cumulative air quality impact program which collects a fee per proposed residence (SLOC 2009). These fees contribute to several identified improvements that will help reduce some of the cumulative air quality impacts within the South County (e.g., clean-fuel bus replacement, park-and-ride lots).

Projects are preceded by an update of the South County Area Plan that conducted a cumulative assessment and projection of build-out, where air quality impacts where considered. Individual projects (previously planned or not) may also be required to undergo CEQA analysis, and mitigation measures applied, where appropriate. Further, projects must comply with APCD rules and regulations that include air emission reduction strategies for the basin. These, in concert with individual project mitigation measures, will help reduce air quality impacts. However, until San Luis Obispo as a whole attains all federal and state standards, it is likely that the air emissions from the cumulative projects would be significant.

The development of additional oil resources in SLOC, such as at the Excelaron Project approximately 25 miles from the Santa Maria Pump Station in Huasna Valley, could supply crude oil to the Refinery. Since this distance is less than the crude volume-weighted distance associated with the current onshore crude sources supplied by truck (the current distance weighted by the amount of crude oil supplied to the Refinery is 66 miles), using crude oil from the Excelaron site could reduce mobile emissions associated with delivering crude oil to the Santa Maria Pump Station.

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Comment [F39]: Please see comment letter dated Oct. 31, 2011 regarding section highlighted in yellow concerning crude truck trip emissions. 2

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Since one of the cumulative projects would be constructed near the Proposed Project area, the cumulative impacts associated with odors or toxic emissions could be significant.

4.1.7 Mitigation Monitoring Plan

Comment [F40]: Please refer to comments in October 31, 2011 Cover Letter concerning Mitigation sections highlighted in yellow. 4

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
AQ-1.1	Prior to issuance of the updated permit and increase in Refinery throughput, the Applicant shall install BACT on the crude heater, coker heater and boilers B504/506 and/or utilize an equivalent method onsite with other equipment, to reduce the NOx emissions to less than the APCD thresholds.	Inspection of equipment	During operations	San Luis Obispo County Planning and Building Department, APCD
AQ-1.2	To the extent feasible, all trucks under contract to the SMF shall meet EPA 2010 model year NOx emission requirements and a preference for the use of rail over trucks for the transportation of coke shall be implemented to the extent feasible in order to reduce offsite emissions. Annual truck trips associated with Refinery operations and their associated model year and emissions shall be submitted to the APCD annually.	Inspection of equipment	During operations	San Luis Obispo County Planning and Building Department, APCD

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Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
AQ-1.3	Prior to issuance of the updated permit, if emissions cannot be mitigated below significance thresholds through implementation of mitigation measures AQ-1.1 and AQ-1.2, then offsite mitigation will be required as per APCD guidance in the CEQA Handbook.	Inspection of off-site mitigation	During operations	APCD
AQ-2	The Applicant shall prepare and submit an Odor Control Plan, which shall be approved by the APCD prior to the issuance of a revised permit. The Odor Control Plan shall identify all potential sources of odors at the Refinery. The plan shall detail how odors will be controlled at each odor source and the mechanism in place in the event of an upset or breakdown, as well as design methods to reduce odors, including redundancy of equipment (e.g., pumps and VRU compressors) or reductions in fuel gas sulfur content. Area monitoring shall be discussed. The Plan shall also include a complaint monitoring and reporting section and include a hotline number for individuals to call in case of a complaint.	Inspection of plan	During operations	San Luis Obispo County APCD
AQ-3	The Applicant shall implement a program to increase efficiency of the Refinery stationary combustion devices to maintain GHG emissions to less than the APCD interim thresholds (10,000 metric tonnes per year) over the emissions associated with the current permitted throughput. In addition to increasing stationary equipment efficiency, additional measures may include the use of more efficient model year trucks or alternative fueled vehicles for hauling vehicles. If, after all applicable measures have been implemented, emissions are still over the thresholds, then offsite mitigation will be required. The off-site mitigation measures shall be approved by the APCD prior to permit issuance.	Inspection of program	During Operations	San Luis Obispo County APCD

Comment [F41]: Please refer to comments in October 31, 2011 Cover Letter concerning Mitigation sections highlighted in yellow. 1

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Comment [F43]: Please see comments in October 31, 2011 cover letter concerning Mitigation. 11

4.2 Public Safety and Hazardous Materials

This section discusses potential public safety and hazardous materials impacts associated with the Proposed Project. Potential impacts include fires, explosions, and releases of hazardous materials from activities associated with the operation of the project facilities. Potential soil and groundwater contamination issues are also addressed. The information in this section outlines the environmental setting, regulatory setting, significance criteria, potential risk scenarios and their significance, and the levels of risk to the public or environment associated with these scenarios. A quantitative risk assessment (QRA) was used to evaluate the hazard impacts of the Proposed Project.

In addition, this section presents an analysis of the estimated frequency and volume of oil spills for the Proposed Project. For a discussion of odor impacts and health risk impacts, please see Section 4.1, Air Quality.

4.2.1 Environmental Setting

For the Proposed Project, environmental setting or baseline conditions reflect the baseline risks of upset associated with the existing pipeline system and facilities. Once these baseline risks are quantified, the significance criteria can be used to determine if there is an increased level of risk associated with the project or alternative, and if the proposed change in the system introduces a significant increase in the risk of upset or an increase in the severity of an already significant impact.

In general, oil and gas refinery facilities present hazards to employees and the public due to:

- The presence of flammable and toxic gasses
- The storage and transport of crude oil, natural gas, and
- Crude oil spills.

Comment [e1]: These gases are not present here. 1

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The impact section discusses these hazards and their potential impacts, as well as their estimated frequency of occurrence based on industry-wide experience.

4.2.1.1 Study Area and Scope

For the public safety analysis, the study area includes the existing facilities and pipelines associated with the Proposed Project, its alternatives, and the areas in the immediate vicinity of the Proposed Project that could be affected by an upset at the facilities. The area that could be impacted by a release also includes any routes associated with proposed trucking of crude oil or associated project hazardous materials.

An upset condition at the listed facilities or along transportation routes could have an adverse impact to the public and environmental resources in the study area. Impacts to air, water, and biological resources are discussed in the appropriate sections of this Environmental Impact Report. The study area that would be affected in terms of public safety by an upset condition includes:

- Residences and businesses near the Project Site;
- Residences and businesses located along the transportation routes; and
- Any population located along the pipeline routes, including those between the Santa Maria Pump Station and the Refinery, and north to the Rodeo Refinery (in the San Francisco Bay Area).

Oil spill volumes that would be released in the event of a pipeline spill are identified, with the assumption that the Supervisor Control and Data Acquisition (SCADA) system responds appropriately and activates isolation valves. Closing of the automatic isolation valves within the appropriate response time would considerably reduce spill volumes from the pipeline segment. Evaluation of spill volumes for the worst-case scenario when the SCADA system malfunctions, or is overridden by an operator, is also addressed.

4.2.1.2 Characteristics of Crude Oil and Natural Gas

This section discusses the properties of crude oil and produced gas as they relate to safety impacts, such as oil spills, toxic exposure, and fires.

A spill of crude oil from the pipeline could damage the environment if oil spilled on land, or in rivers, creeks, or the ocean, and could produce public safety concerns from fires that may arise if the oil burns. Flammable vapors (propane, butane, and pentane) may also emanate from the crude oil, and there may be safety hazards arising from toxic vapors in the crude oil (primarily benzene and hydrogen sulfide).

Crude oil, as it emerges from the wellhead, is a heterogeneous mixture of solids, liquids, and gases. This mixture includes sediments, water and water vapor, salts, and acid gases, including carbon dioxide and, sometimes, hydrogen sulfide. Flammable vapors that may emanate from crude oil include methane, propane, butane, and pentane.

Crude oil comes in a variety of forms and is characterized in several different ways. For example, oils are frequently classified by their American Petroleum Institute (API) gravity, which is a measure of how heavy or light they are compared to water. Oils with an API gravity greater than 10 will float on water, while those with an API gravity less than 10 will sink. Thin and volatile oils are "light," whereas thick and viscous ones are "heavy." Light oils have an API gravity of 30 to 40 degrees, whereas heavy oils may have an API gravity of less than 12 degrees. Some of heaviest crude oils even have API gravities that are less than 10 degrees and will therefore sink in water.

In addition to API gravity, crude oils are also characterized by Reid vapor pressure. Reid vapor pressure (ASTM Method D 323) is the absolute vapor pressure exerted by a liquid at 100 degrees Fahrenheit (°F). The higher the Reid vapor pressure, the more volatile the oil and the more readily it will evaporate.

Oils are typically mixtures of many different compounds, most of which are hydrocarbons. There are a series of main hydrocarbon groups in petroleum. Saturates are hydrocarbons with straight chains of carbon atoms, while aromatics are hydrocarbons consisting of rings of carbon.

Asphaltenes are complex polycyclic hydrocarbons that contain many complicated carbon rings and nitrogen-, sulfur-, and oxygen-containing compounds.

Sulfur in crude oil occurs in many natural compounds including hydrogen sulfide (H2S), a toxic gas that can cause injuries or fatalities if released to the atmosphere and subsequently inhaled. Total sulfur ranges from approximately one to four percent by weight in crude oils, while H2S concentrations can reach 100 parts per million (ppm) in "sour" crudes. Fortunately, its strong, pungent odor is detectable at a level substantially below that which causes adverse health effects. However, H2S also causes paralysis of the olfactory functions at levels below health effects. Other constituents of crude oil include nitrogen and oxygen compounds, as well as water- and metal-containing compounds, such as iron, vanadium, and nickel.

The processed gas at the Refinery is used in various [1] processes at the Refinery. It is treated to reduce the sulfur content before it can be used as fuel gas. [2] The majority of the gas is methane with some smaller amounts of ethane and butane and inert compounds (such as CO2). Produced gas is similar to purchased natural gas in that it [3] presents hazards due to its flammability in the form of vapor cloud fires and explosions, and thermal radiation impacts due to flame jet fires emanating from a gas leak or rupture. The site has comprehensive leak detection and repair programs that are demonstrated over time to identify and control potential hazardous events of this nature. [4]

4.2.1.3 Risk Assessment Methodology

Risk assessment involves evaluating risks presented to the public by the facility in the form of hazardous materials releases resulting in explosions, flammable vapors, or toxic material impacts.

Facility Quantitative Risk Assessment Approach

The QRA analyzes the risks of immediate human safety impacts presented by industrial operations on nearby populations. The assessment follows commonly accepted industry standards including the recommendations of the Center for Chemical Process Safety (CCPS), the Health and Safety Executive of the United Kingdom, and the County of Santa Barbara Environmental Threshold and Guidelines for Public Safety.

The main objective of the QRA is to assess the facility's risk of generating serious injuries or fatalities to members of the public, to assess the risks of spill events, and to develop mitigation measures that could reduce these risks. The development of the serious injury and fatality aspects of the QRA involves five major tasks:

- Identifying release scenarios;
- Developing frequencies of occurrence for each release scenario;
- Determining consequences of each release scenario;
- Developing estimates of risk, including risk profiles; and
- Developing risk-reducing mitigation measures.

Figure 4.2-1 shows the steps in developing a QRA.

A QRA computer model, developed by Marine Research Specialists, is used to calculate the risk profiles and, in conjunction with Geographic Information System software, to manage the data in accordance with CCPS guidelines for hazard assessments (CCPS 1989). The model is based on a polar coordinate grid of cells. The grid extends at least 0.5 miles from the facility in all directions and has varying cell sizes depending on the populations and ignition sources. Hazard zones are then laid over the grid to determine populations impacted. The following sections discuss information developed as inputs to the model.

Meteorological conditions at the site are represented by two stability classes: F stability/2 meters per second (m/s) and D stability/4 m/s. Wind conditions are divided into 16 directions and the probability of wind in each direction, at each stability class and speed, is entered.

Fatality and serious injury probabilities are entered for each type of scenario (i.e., flame jets, fires, vapor clouds, including flammable and toxic clouds, explosions, and boiling liquid expanding vapor explosions), indicating the percentage of persons who are exposed to a scenario that would suffer serious injuries or fatalities.

Population density information developed for each receptor includes the number of persons present at each location, the area over which the persons are distributed, and the maximum number of persons that could be exposed. If a cloud covers only a portion of the area, the population density is used to determine the number of persons exposed.

A use factor is applied to each receptor based on the hours per day that persons are at the location. For example, a receptor that has persons at it 12 hours per day would have a use factor of 0.5. This factor reduces the frequency of a release scenario impacting persons.

An ignition probability at each receptor is applied, which defines the probability that a flammable cloud would reach the receptor and ignite and affect the receptor location. For example, if there are no ignition sources between the receptor and the release point and there is an ignition point at the receptor, such as a campfire, which has a high probability of igniting the cloud, then the ignition probability would be 1.0 at the receptor.

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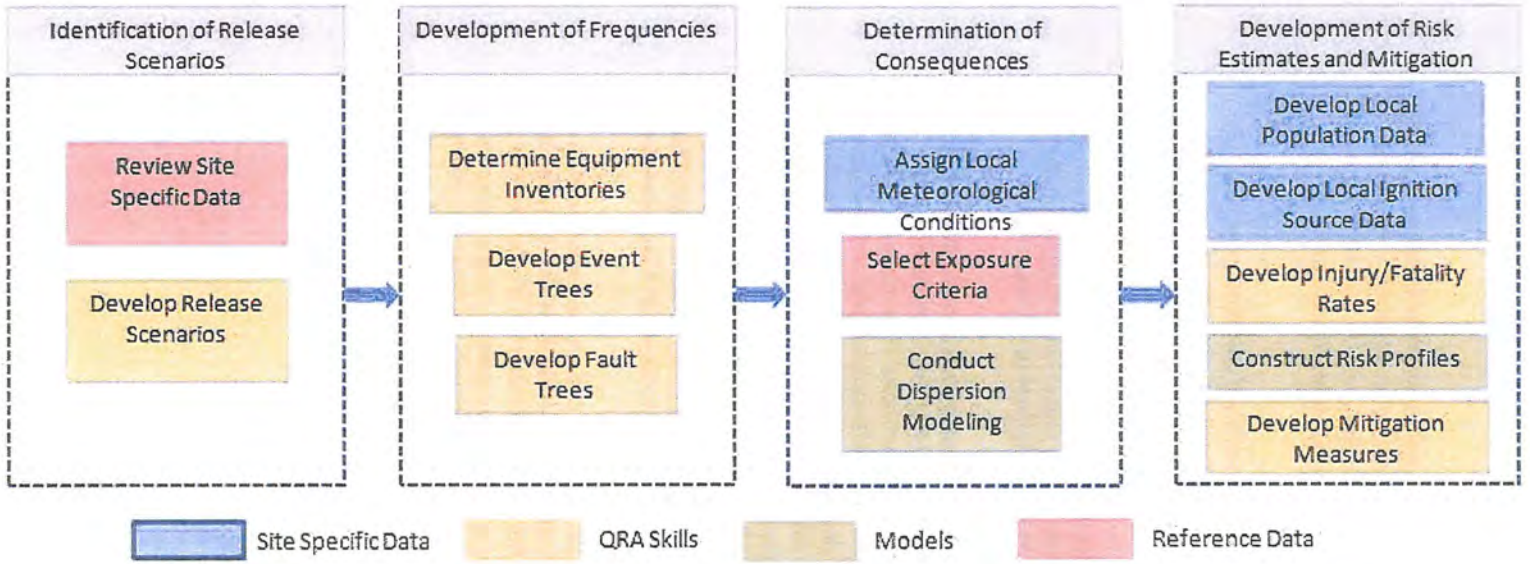
Figure 4.2-1 Steps Involved in Developing a Quantitative Risk Assessment



This would mean that any receptor farther from the release point would not be impacted. If there are ignition sources at the release location (such as flares or heaters), the ignition probability would be less than 1.0, meaning that part of the time the flammable cloud would not reach the receptors at all. The sum of ignition probabilities along any one path is equal to or less than 1.0.

A shielding factor is also applied to receptor locations. The shield factor is applicable to thermal scenarios only, such as flame jets, fires, or boiling liquid expanding vapor explosions. Thermal scenarios only produce impacts if the receptor is directly exposed to the flame and has a "line of sight." Buildings, vegetation, terrain, and other types of obstructions would prevent persons exposed to the fire from experiencing the full effects, and would reduce the probability that the person would suffer a serious injury or fatality.

Release scenario frequencies are determined though failure rate analysis and fault trees, which detail the general conditions and equipment-specific frequencies that could lead to a release. Event trees evaluate post-release behavior of the released material, such as whether it forms a flammable cloud, flame jet, toxic cloud, explosion, or a boiling liquid expanding vapor explosion.

The end products for the serious injury and fatality analysis are "risk profile" curves, one for fatalities and one for serious injuries, developed from the scenario frequencies and effected populations for each scenario. The risk profile curves estimate the risk that any existing population would suffer fatalities or serious injuries.

In general, a conservative (estimating more risk than would actually occur) approach is taken in conducting the analysis. Using a conservative approach ensures that risks are overestimated and ensures the focus of efforts are on the areas that produce the highest risk. Conservative assumptions include the following:

- Minimal piping friction effects. For flammable gas releases, consequence analysis assumed that release volumes were located at the break source and all releases were assumed to behave like a release from a short pipe length or a hole in a vessel. Piping lengths, which would increase the friction and reduce the release rates, were not included. For example, if a scenario includes two exchangers, nine vessels, two filters, and an estimated 240 meters of piping, it was assumed that this entire inventory was released as though it was contained within a single vessel at the unit temperature and pressure and released through a short pipe segment. In reality, the gas would have to travel through piping and equipment to get to the release point. This would reduce the release rate and the subsequent impact zone. In addition, for flammable releases, the peak release rate was used to determine the hazard zone. This approach produces larger hazard zones since the release rate would most likely decrease over time, thereby reducing the size of the impact zone over time.
- Minimum human intervention and shutdown systems included. It was assumed there would be no human intervention in the event of a crisis situation. Manual shutdown systems were assumed to not be activated, or activated only after a sufficient amount of material was released, which would allow the hazard zones to reach their maximum extents (given the dispersion and meteorological conditions at the time of the release). All automatic shutdown systems that can isolate portions of the plant were assumed to fail, and the failure rates of these automatic shutdown systems were included in the fault tree analysis. However, it was

assumed that compressor low pressure shutdown systems would prevent the system from continuing to operate and compress additional gas in the event of an equipment failure.

- Maximum release volumes were assumed. All releases were assumed to release the entire volume of the facility gas or the entire volume of the gas gathering system. In reality, numerous valves and equipment designs intended to prevent such an event would prevent a release of the majority of the gas through a given pipe or equipment rupture.

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Spill Risk Analysis Approach

The approach for the spill analysis involved estimating the frequency of release events from the facilities and the release volumes. Spill volumes from a pipeline system rupture are based on the pipeline diameter and the terrain profile, which would limit the amount of oil that could drain out of the pipeline. In addition, the pumping rate also affects the size of a release since oil pumped into the pipeline would contribute to the release size until the pumps are shut down. Spills that would be contained by the berms and drainage system valves and, for areas outside of berms, would be directed to the drainage basins (tertiary containment). A spill would only be directed outside of the field after a subsequent failure in the drainage basin discharge procedure or equipment.

Security Risk

Effective and comprehensive site security programs are a prudent aspect of reducing the risk of chemical releases at a facility. Although the Proposed Project area would not be considered a terrorist target compared to New York City or Washington, DC, it could be the subject of vandalism that could release hazardous materials.

The U.S. Department of Homeland Security established chemical facility anti-terrorism standards in 2007 (6 Code of Federal Regulations [CFR] Part 27). This rule established risk-based performance standards for the security of chemical facilities. It requires affected chemical facilities to prepare security vulnerability assessments that identify facility security vulnerabilities and to develop and implement site security plans, which include measures that satisfy the identified risk-based performance standards.

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The security vulnerability assessments include analysis related to asset characterization, threat assessment, vulnerability analysis, risk assessment, and countermeasure assessments. Generally, facilities covered by the Occupational Safety and Health Administration (OSHA) Process Safety Management and Environmental Protection Agency Risk Management Plan rules are required to comply with these standards.

A number of industry groups, including the API, the Center for Chemical Process Safety, the Synthetic Organic Chemical Manufacturers Association, American Chemistry Council, and the Chlorine Institute have developed approaches for assessing security risk. Each of these methods involves analyzing the security systems at the facility in combination with the hazards and determining a level of security risk.

Security systems at the site include:

- Security policies for employees and contractors including access control, pre-employment screening, information security, and post-employment issues;
- Appropriate signage preventing access;
- Fencing systems;
- Visitor sign-in and sign-out;
- Surveillance of hazardous material areas;
- Employee and contractor identification methods;
- Night lighting;
- Partnerships with local response agencies;
- System to report and collect security incidents;
- Communications equipment; or
- Employee vehicles and access keys, codes, and card security.

The site has a comprehensive security system designed to address all security issues. The security system is periodically tested to confirm its effectiveness. It must meet or exceed Industry standards while addressing Homeland Security issues.

Release Scenarios

The approach to develop release scenarios is grouping the equipment and operations by operating parameters -- equipment with similar temperatures, pressure, and composition were grouped into one set of scenarios. This generally produced a set of release scenarios for each process. Each set of release scenarios contains at least one rupture release and one leak release. A rupture is defined as a large process inventory release over a short period caused, for example, by catastrophic equipment failure. Ruptures are generally associated with releases through holes larger than 1 inch. A leak is defined as a process inventory released due to a small valve failure or hole in a vessel, for example, generally less than 1 inch in diameter. This approach encompasses a range of risks by including a less frequent, more severe scenario, and a more frequent, less severe scenario. In some cases, the leak release actually produces a higher risk (i.e., combination of consequence and frequency) than the associated rupture release because leaks occur more frequently than ruptures.

The principal immediate hazards to public health at an oil refinery include:

- Releases of flammable gas causing vapor cloud explosions or thermal impacts from fire and flame jets;
- Releases of natural gas causing vapor cloud explosions, thermal impacts from fire and flame jets, or thermal and overpressure impacts from explosions and boiling liquid expanding vapor explosions;
- Releases of odorant causing toxic impacts; and

- Releases of crude oil with subsequent fire causing impacts from thermal exposure to crude oil fires.

Potential release events including those of this nature are addressed under the federal and state requirements for the facility's Risk Management Plan (RMP). In addition, facility personnel includes trained fire and emergency response staff to respond to potential events.

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Failure Frequencies

Once the scenarios have been identified, the analysis attempts to estimate the frequency of each scenario. This is done by combining the series of events necessary for the scenario to be realized. These are called "fault trees." For example, a release from a simple pipe and valve system could be due to the pipe breaking or leaking, the valve breaking or leaking, or an operator leaving a valve open during a maintenance procedure. Any of these events would cause a release of the material. Failure rate databases quantify how often each of these events occurs.

Several failure rate databases are available that list failure rates for a long list of equipment types and operations. These databases are produced from a large dataset of industry-wide information from hundreds of facilities. Some rates are industry-specific, such as nuclear facilities, liquefied petroleum gas facilities, or oil and gas industries, whereas some are more general. The sources included the Center for Chemical Process Safety, Lees, WASH 1400, Hydrocarbon Leak and Ignition database, and the Rijnmond Public Authority risk analysis reports, which include both equipment failures and failures due to human error. These industry-wide failure rate databases incorporate a range of equipment, differing in design standards and equipment age. Therefore, the failure rates are considered an average of a group of equipment that might include some older equipment and some relatively new equipment.

Failure rates are developed, for example, from a listing of valve breaks that have occurred in an industry. Dividing the number of breaks per year by an estimate of the number of valves in that industry can generate a failure rate. For example, this rate may be 0.003 leaks per year per valve, so that if there are 100 valves at a facility, 0.3 leaks per year or approximately one leak every 3 years could be expected. The same information is available per meter of pipe length as a function of pipe size, for example. Other examples of this type of information include the number of times per year a pump might be expected to fail or a pump seal would develop a leak.

Rates can also be based on what is called a demand basis, which is a probability that if the equipment is called upon, it will not work. Good examples of this are the probability that a switch will not operate if it is used, or that a fire pump will not operate if it is needed.

Failure rate databases also include human error rates. These would include the frequency that a valve is not closed correctly, or that a series of instructions are not followed correctly, or that a hose is not connected properly. These human error rates are based upon industry-wide data and have been incorporated into the fault trees where applicable.

Table 4.2-1 shows frequencies for some common events in everyday life taken from the databases.

Table 4.2-1 Frequencies for Common Events

Event	Number	Type

Failure to follow instructions occurs once every	18	times it is done
Simple arithmetic error with self checking occurs once every	40	times it is done
Incorrect reading of a gauge occurs once every	222	times it is read
Fail to read a 10 digit number correctly occurs once every	167	times it is read
A switch fails to operate once every	3,333	times it is used
A welded connection leaks once every	1,142	years per weld
A computer fails to run once every	10.5	months
A propane tank explodes once every	10,000,000	years per tank

Sources: CCPS 1989b, R&MIP 1988

The failure rate databases that were used to estimate the base failure frequencies include a range of equipment types, services, and age. Many of the failure rates, for example, are based on services that are much more hazardous than oil and gas processing, such as boiler systems, piping, and Refinery reactor equipment.

Industry data on the correlation between equipment age and failure rates is sparse; in fact, several studies indicate that there is no correlation. In one study, 50 percent of failures were attributable to pressure vessels that were less than 10 years old and 50 percent were attributed to vessels that more than 10 years old (Lees 1996). This is primarily because failures occur during the first few years of equipment life due to manufacturing inadequacies. An examination of facilities regulated by the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE) (formerly the Minerals Management Service) in the Gulf of Mexico over the past 10 years shows that equipment failure rates actually decrease even as the average equipment age increases.

However, other studies indicate an increase in failure rates with age. Thomas developed a quantitative method for determining the failure rates in process piping and vessels using empirical data from the process industry (Thomas 1981). That method involves examining the piping and vessel size, construction geometry, and number and length of welds, as well as the equipment age and maintenance practices. This method assigns an age factor as high as 1.4, meaning failure rates would increase by approximately 40 percent at the age of 20 years over the failure rate at 10 years. This method estimated that process piping leaks are due primarily to manufacture and materials selection (50 percent) and corrosion and erosion (25 percent), with fatigue, vibration, expansion, mal-operation, and shock making up the remainder (Medhekar 1993).

Since the Thomas report, a number of refinements and data development activities have occurred mostly focused on the nuclear industry. The worldwide nuclear industry has developed "risk informed in-service inspection" techniques. A number of approaches to risk informed in-service inspection have been proposed, but most of them rely on assessing the severity of process degradation mechanics and assigning a level of risk to specific processes. Developed databases, namely the SKI-PIPE for the worldwide nuclear industry, allow for a comparison to the Thomas model and databases. A study examining the SKI-PIPE database indicates that the age factor can range as high as 2.0 for larger diameter pipes in facilities older than 25 years, and as high as 2.5 for pipes subject to stress corrosion cracking environments (Lydel 2000).

The California State Fire Marshal (CSFM) pipeline study indicates that pipeline leak rates are

relatively constant during the 30- to 40-year timeframe, and then increase substantially (CSFM 1993). The failure rates of the oldest pipelines are 2.8 times greater than the average.

For this study, it was assumed that as equipment ages beyond the first 10 to 20 years, to the age of more than 40 years, lack of proper maintenance would substantially increase failure rates. However, if proper maintenance practices are employed and equipment is repaired or replaced proactively, it would be assumed that base failure rates would be similar to the average rates seen in the industry. Since all age-related degradation issues (e.g., corrosion) cannot be captured by even the best maintenance programs, a factor of 2.0 has been included in the base failure rates for equipment more than 20 years old.

The average base failure rate for a group of equipment was quantified by examining the range of failure rates between the different databases (WASH, Lees, HLID, Rijnmond, and Center for Chemical Process Safety) and assigning the higher failure rates to equipment in corrosive service and receiving less maintenance. For example, the failure rates for a rupture of process piping, from a number of reputable studies range from a very high rate of once every 40,000 meter-years to a very low rate of once every 11 million meter-years (WASH1400, Lees, Center for Chemical Process Safety, and Rijnmond). This results in an average failure rate of about once every 1.9 million meter-years. The higher values are assumed to correlate to facilities that operate under corrosive service and below-standard maintenance. The lowest rates are assumed to correlate to facilities that have less- or non-corrosive service and the highest standards of maintenance. The Proposed Project facilities were assumed to be new with less- or non-corrosive service because they are associated with relatively sweet gas, rather than very sour gas.

Appropriate maintenance was determined from the State of California Safety Orders, the Uniform Fire Code, National Fire Protection Association (NFPA), and API, as well as industry practice. Appropriate maintenance would include:

- An established computerized maintenance management system, including record keeping, design review, maintenance checklists, diagnostics recording, preventative scheduling, and monitoring.
- For piping and pipelines, visual and ultrasonic or non-destructive testing inspections for corrosion (per API 574) and cathodic potential inspections (for underground piping), as is conducted on many pipelines utilizing smart pigs and cathodic potential systems. Pipe coating would be maintained to protect against weathering, and pipe bracing should be maintained for seismic considerations. The frequency of non-destructive testing of process piping would be a function of the corrosiveness of the service. However, a baseline should be established for older piping.
- For vessels, external and internal visual and ultrasonic testing should be conducted every 5 years. Maintenance of vessel bracing and bolting for seismic considerations. Pressure relief to safe locations, preferably closed systems.
- For atmospheric tanks, ultrasonic wall testing every 5 years, bottom examination every 10 years, and appropriate seismic design considerations to prevent failure in an earthquake.
- For valves, checking for small leaks more than once per year, since small leaks are frequently precursors to larger leaks and ruptures. Valves should also be exercised at least annually to

ensure operational effectiveness, and should be refurbished periodically, including seal and seat refurbishment or replacement, according to manufacturer's recommendations. Pressure relief valves should be pressure checked annually. Pressure relief valves that fail the annual test should be retested within 6 months.

- For rotating equipment, such as pumps and compressors, appropriate maintenance may involve replacing seals, oil maintenance, and a number of other operations according to the manufacturers' recommendations. Also, design issues are important, such redundant systems that allow for more frequent maintenance activities, pressure relief systems that vent to a safe location, and seismic bracing for piping and equipment.
- For sensor equipment, such as lower explosion level, fire eyes, and H2S sensors, appropriate maintenance would involve replacing sensors when new technology presents a significant improvement in reliability, and conducting quarterly inspections and testing to ensure operational effectiveness.
- For control systems, such as level, pressure, vibration, and temperature, annual testing including system actuation to ensure operation.
- Emergency shutdown systems should be checked and exercised annually.
- For fire water systems, testing and exercising annually, pressure testing water header, verification of flow alarms, fire pumps weekly inspection and annual performance test, foam system sampled and analyzed annually.

Pipelines

Transportation by pipeline is one of the safest forms of transportation. Nonetheless, failures do occur, resulting in fatalities, injuries, and property damage. The recent failure of a 30-inch gas transmission pipeline in a residential area of San Bruno, California, garnered extensive media coverage when it caused seven fatalities and numerous serious injuries and destroyed homes. The San Bruno release reportedly continued for more than 1 hour, which exposed the surrounding area to extensive thermal radiation damage. Spectators reported flames as high as 1,000 feet. For this project, the change will merely entail the Company's ability to move an additional quantity of petroleum liquids through existing pipelines on a daily basis. [1]

Incidents associated with gas pipelines are compiled by the Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration. Between 1990 and 2009, 1,764 total incidents on gas transmission pipelines caused 35 fatalities and 182 injuries. Gas pipeline failure frequencies utilized the DOT failure rates for gas pipelines. The base rate of pipeline failure is 2.83×10^{-4} incidents per mile. This rate is for transmission pipelines only and encompasses 5.6 million pipeline-operating years. Based on detailed data compiled by the OPS from 2002 to 2004, 63 percent of incidents produced leaks and 37 percent produced ruptures. This analysis used these leak and rupture rates.

Comment [F2]: This analysis is for gas transmission pipelines, not liquids, and is inappropriatee for use in this EIR. [2]

The OPS database also lists incidents by cause, which are listed in Table 4.2-2. Corrosion, both internal and external, is the greatest cause of gas pipeline incidents, followed by third-party excavation.

Table 4.2-2 Department of Transportation National Gas Transmission Pipelines Incident Causes

Cause	Percentage
Corrosion	22.1
Third party damage	19.3
Equipment failure	20.6
Other	23.8
Environmental	12.0
Operational Error	1.8

Source: DOT website, data from 1990-2009

PHMSA data for California indicates that the largest fraction of natural gas transmission pipeline failures (45 percent) was from third-party excavation activities that struck the pipeline and caused a release.

Comment [F3]: This analysis is for gas transmission pipelines, not liquids, and is inappropriatee for use in this EIR 1

Earthquakes

During earthquakes, ground vibrations and subsequent liquefaction of the earth under structures can collapse and damage buildings and processing equipment. There is no exact correlation between earthquake Richter scale magnitude and ground acceleration values. Earthquakes measuring the same Richter scale value can generate different acceleration values, and thereby equipment damage, depending on the depth and type of ground shaking. For example, the 1994 Northridge earthquake had a magnitude of 6.7 and a peak ground acceleration of 0.94g (g being the acceleration of gravity), whereas the 1971 San Fernando earthquake had a magnitude of 6.7 and a peak ground acceleration of 1.25g.

The distance between the epicenter and the estimated peak acceleration location can also vary. The estimated distance to the peak ground acceleration in the Northridge earthquake was double the distance in the San Fernando earthquake. The distance to the peak acceleration value can be as much as 24 miles. This indicates that areas of damage are not limited to the epicenter of an earthquake.

Equipment damage can be understood by examining damage to equipment during past earthquakes.

This report examined reconnaissance reports published by the Earthquake Engineering Research Institute for these earthquakes (the reports are not available for all earthquakes):

- Imperial in 1979;
- Northridge in 1994;
- Coalinga in 1983;
- Santa Barbara in 1978;
- Whittier Narrows in 1987; and
- Loma Prieta in 1989.

The 1987 Whittier Narrows earthquake damaged more than 10,000 buildings in the Whittier area

and destroyed 123 single-family homes. The earthquake measured 5.9 on the Richter scale and produced a peak measured acceleration of 0.63g more than 6 miles from the epicenter. During the Whittier Narrows earthquake process equipment was damaged, including a large chlorine tank dislodged while being filled, releasing 240 gallons of chlorine. The reports do not state whether it was anhydrous (in a pressurized tank) or aqueous chlorine (in an atmospheric tank), although both could produce a toxic cloud of chlorine.

Among the earthquakes examined for this report, most process industry equipment damaged during the earthquakes was related to atmospheric oil or water storage tanks that ruptured or developed severe seam leaks. Piping connected to the atmospheric tanks often ruptured. Vessels that were not anchored showed some sliding and pipes leaked when the equipment shifted. However, no pressurized vessels failed and no gas liquids (e.g., propane or natural gas liquids) were released during any of the studied earthquakes.

The California Department of Conservation's Division of Oil, Gas and Geothermal Resources (DOGGR) 1984 annual report presents results of drill operator surveys in the Coalinga area to assess damage to drilling and processing equipment after the 1983 magnitude 6.3 Coalinga earthquake (with a peak ground acceleration of 0.54g measured 5 miles away, although no accelerometers were located in Coalinga). The survey indicated that more than 40 atmospheric tanks significantly leaked due to the earthquake. Impact to vessels, compressors, and processing equipment was limited to some shifting and failed equipment tie-downs and fittings, but there were no significant material releases. Some wells sustained damage to downhole casing, but no releases occurred.

Earthquakes are difficult to assess in a QRA. Earthquakes can have a range of magnitudes and ground acceleration values, and their impact on equipment is a function of the ground shaking characteristics as well as acceleration. The approach taken in this study is similar to that used as part of the Environmental Protection Agency (EPA) Resource Management Plan and the California Accidental Release Program. Seismic probability assessments are conducted on a facility to estimate the maximum credible earthquake, and seismic engineers assess the equipment to ensure that it can withstand an earthquake of the maximum credible magnitude. Any deficiencies are corrected to ensure that the facility is seismically safe. This approach essentially assumes that, given good seismic engineering practices and design, a rupture release would not occur in the event of the largest credible earthquake. This approach is supported by the earthquake damage reports discussed that provide evidence of the advantages of good engineering design. However, it is assumed that atmospheric storage tanks would fail given a large magnitude earthquake producing peak ground acceleration values exceeding 0.50g. A peak ground acceleration value of 0.50g would occur approximately once every 5,000 years for the Project Site location, based on the US Geological Survey analysis, and this value is included in the atmospheric tank failure frequency. Failures of piping would occur if an earthquake occurred that produced a peak ground acceleration of more than 1.0 g, which would occur approximately every 30,000 years.

There are several sources of variation in the failure rate numbers. These sources include the equipment types and boundaries; the severity of the processes; the application and environment of the equipment; the equipment's age and maintenance history; construction suitability; and

interpretations of data gathering at the facility levels.

It should be emphasized that the approach taken to estimate the equipment failure rates in this study is an approximation. The large number of variables involved and the relatively sparse information available, particularly related to age influences on equipment failure rates, necessitates a best estimate approach. Ideally, the most accurate data would be obtained from several facilities exactly like the Proposed Project, using the same methods to gather data, the same type of equipment, and the same services over many years. Unfortunately, failure data is not gathered specifically enough to obtain statistically significant numbers for the exact variables that match the facility. For example, all of the databases include some equipment that is old and some that is relatively new, so there is some duplication in the approach to estimating equipment failure rates and the associated rates as a function of age.

The Center for Chemical Process Safety includes the variability in frequency numbers and provides a high, low, and a mean value for a range of equipment. These ranges show that frequency numbers for equipment average a high of 3.6 times the mean, and a low of 0.0042 times the mean failure rate value.

Consequence Analysis

The consequence analysis and hazard modeling consider the physical effects of a release and its damage to people. The analysis judges the severity of potential hazards associated with accidents and their possible consequences.

Risk assessments typically evaluate fire, flammability, explosion, and toxicity. Fire and flammability hazards are relevant for flammable vapors with relatively low flash points, such as propane and methane; their hazard is usually thermal radiation from vapor jet or pool fires. In addition, larger vapor jet fires can also lead to a loss of structural integrity of other storage or process vessels. The temperature in flame jets is usually high, and flame impingement onto nearby equipment is of the greatest concern.

The release and ignition of flammable vapors may also cause an explosion. The blast overpressure hazard depends on the nature of the chemical, the strength of the ignition source, and the degree of confinement. Finally, toxic chemicals can produce adverse effects to humans.

The degree of these effects depends on the toxicity of the material and the duration of the exposure.

Performing state-of-the-art hazard assessment requires a combination of sophisticated analytical techniques and extensive professional experience. The models in this analysis are the result of more than two decades of development, and they have been validated using large-scale field tests. They have also been computerized for ease of use; they operate on personal computers. While a large number of consequence models are available, only a few specific models were needed to assess the hazards identified as part of this study.

The hazard assessment models used as part of this analysis can be categorized into two groups:

- Release rate models; and
- Vapor dispersion models.

The following sections discuss the general characteristics of each of the models used in this analysis. Specific models used in the analysis were selected based on the scenarios identified in the hazard identification task.

Release Rate Models

Several models were utilized to simulate potential releases of gas, liquefied petroleum gas, natural gas liquids, and crude vapor, and two-phase releases from pipes and vessels.

One of the first steps in consequence modeling is to establish the source terms (i.e., release rate, temperature, pressure, and velocity) associated with each scenario. The release rate is the rate at which the material is released from the pipe or vessel to the atmosphere. Before the source terms can be estimated for each scenario identified in the hazard analysis, the thermodynamic and physical properties of each hydrocarbon stream must be characterized. The thermodynamic and physical properties of the hydrocarbon streams were estimated using the IoMosaic SuperChems™ model, which utilizes numerous thermodynamic and physical property estimation techniques.

The SuperChems™ model simulates the release of multi-component liquid and vapor streams characteristic of the potential releases associated with the facility. For this study, these models are useful in assessing the effect of multi-component streams on vapor cloud flammability characteristics.

Two-Phase Flashing Flow Model

This is a critical two-phase flashing flow and multi-component liquid discharge model based on methodology validated by experimental data in recent literature. The data have demonstrated that, for a pipe length exceeding approximately 4 inches, regardless of pipe diameter, there is enough residence time for a discharging flashing liquid to establish isentropic equilibrium in the pipe. Using an established method, the Slip Equilibrium Method, the model does a friction calculation based on average vapor and liquid mixture properties and sequentially solves the equilibrium and mechanical energy balance equations, accounting for the pressure reduction, and recalculating the mixture properties for adiabatic expansion. The output of the model gives a mass release rate and defines the properties of the exiting hydrocarbon aerosol mixture.

This model was used to estimate release rate characteristics for the scenarios where potential aerosol formation could occur as a result of rapid vessel or pipeline decompression and cooling, or where pressurized liquids (e.g., gas liquids) could be released.

Steady and Non-Steady Release from a Pressurized Vessel or Pipeline

These numerical steady and non-steady state flow models are used to compute multi-component liquid and vapor release rates from a ruptured valve or pipeline. The steady-choked and un-choked flow models compute a single release rate assuming uniform pressure and temperature in

the vessel; in most blow-down processes from pressure vessels, the pressure inside is sufficiently high that choked flow (i.e., releases at sonic velocity) conditions exist during most of the blow-down period. However, in smaller pressure vessels, or for relatively larger release rates, the conditions inside the vessel are not steady. The pressure drop influences the flow velocity and, thus, the mass flow rate. In addition, the density and temperature inside the vessel are also changing. The unsteady state models compute a time-dependent release rate profile based on the chemical component properties.

The modeling method for release rate is to simulate the initial and the average release rate from a pipe or vessel rupture based on the operating conditions: the temperature, pressure, and composition. The initial release rate is then assumed to be steady for the duration of a flammable release (the average release rate is used for a toxic release) until the process inventory is expelled or a system shutdown intervenes.

Dispersion Models

Among the models required for hazard assessment, vapor dispersion models are perhaps the most complex. This is due to the varied nature of release scenarios, as well as the varied nature of the chemicals that may be released into the environment. The user must select the exposure limit carefully, to reflect both the impact of interest (e.g., fatality, serious injury, injury) and the scenario release conditions (particularly the duration of the release).

In dispersion analysis, gases and two-phase vapor-liquid mixtures are divided into three general classes:

- Positively buoyant;
- Neutrally buoyant; and
- Negatively buoyant.

These classifications are based on density differences between the released material and its surrounding medium (air) and are influenced by release temperature, molecular weight, ambient temperature, relative humidity, and the presence of aerosols.

Initially, density of the release affects the dispersion process. A buoyant release may increase the effective height of the source. By the same token, a heavier-than-air release will slump towards the ground. For heavier-than-air releases at or near ground level, the initial density determines the initial spreading rate. This is particularly true for large releases of liquefied or pressurized chemicals, where flashing of vapor and formation of liquid aerosols contributes to the initial effective vapor density and, therefore, to the density difference with the air. This is particularly true for gas releases where significant cooling of the released material occurs due to expansion of the gas from the pipe pressure to atmospheric pressure.

Results of recent research programs dramatically indicate the importance of heavy gas dispersion in the area of chemical hazard assessment:

- The initial rate of spreading is large and is dependent on the differences between the effective mean vapor density and the air density.

- The rapid mixing with ambient air due to slumping leads to lower concentrations at shorter distances than those predicted using neutral density dispersion models.
- There is very little mixing in the vertical direction and, thus, a vapor cloud hugging the ground is generated.
- When the mean density difference becomes small, the subsequent dispersion is governed by prevailing atmospheric conditions.

Since heavy gas dispersion occurs near the release, it is particularly important when considering large releases of pressurized flammable chemicals.

In addition, dispersion analysis is also a function of release modes, which are divided into several categories:

- Instantaneous release (puff);
- Continuous release (plume);
- Momentum-dominated continuous release (jet); and
- Time-dependent continuous releases (jet/plume).

For instance, a momentum-dominated jet will dilute much faster than a plume due to increased entrainment of air caused by the jet. This is especially important when simulating the release of compressed gases.

In addition to the effects of initial release density, the presence of aerosols, release rate and quantity, release duration, and mode of release, dispersion analysis also depends on:

- Prevailing atmospheric conditions;
- Limiting concentration;
- Elevation of the source;
- Surrounding roughness and terrain; and
- Source geometry.

Prevailing atmospheric conditions include a representative wind speed and an atmospheric stability class. Less stable atmospheric conditions result in shorter dispersion distances than more stable weather conditions. Wind speed affects the dispersion distance inversely. Because weather conditions at the time of an accident cannot be determined a priori, it is usually prudent to exercise the model, at a minimum, for both typical and worst-case weather conditions.

Limiting concentration is the concentration at which human health effects would begin to occur. It affects the dispersion distance inversely. Lower concentrations of concern lead to larger dispersion distances. As with source release rate, the effect is non-linear. For example, for steady state releases, a reduction factor of 100 in the limiting concentration results in an increase in the dispersion distance by a factor of approximately 10.

Source elevation is attributed to the physical height of the source (such as a tall stack). In general, the effect of source height is to increase dispersion in the vertical direction (since it is not ground restricted), and to reduce the concentration at ground level.

Surrounding roughness and terrain affect the dispersion process greatly. Roughness is defined as involving trees, shrubs, buildings, and structures, while terrain is defined as hills and general topology. Roughness usually enhances dispersion, leading to a shorter dispersion distance than predicted using a smoother, or lower, roughness factor.

Source geometry refers to the actual size and geometry of the source emission. For example, a release from a safety valve may be modeled as a point source. However, an evaporating pool may be very large in area and require an area source model. Source geometry effects are significant when considering near field dispersion (less than ten times the characteristic dimensions of the source). At farther distances, the source geometry effects are less significant and eventually negligible.

Plume Dispersion Models (Atmospheric)

For the estimation of hazard zones for low to zero velocity releases involving flammable or toxic materials, a set of neutrally buoyant Gaussian plume models are available. The effects of initial density are usually small in the computation of far field dispersion zones. The most relevant release characteristics affecting the extent of vapor dispersion are the release rate (or quantity), the release duration, the limiting concentration, and the ambient conditions.

Several mathematical variations are included in the models. They have also been computerized as part of the IoMosaic SuperChems™ modeling package for ease of use. Additional models, rigorously evaluated, are available in the public domain. These models have been validated using large-scale field tests and wind tunnel experiments. The variations in these models consider the details of the source effects (as opposed to the virtual source method). They include:

- A continuous line or plane source model (to approximate finite size source effects from evaporating pools, overflowing dikes);
- A continuous point source plume model (isolated stack) including effects of buoyancy and momentum (jets);
- A finite duration point source model for concentration;
- A finite source duration and receptor duration to model dose effects from a point source; and
- A finite duration "probit" model which accounts for a non-linear dose response relationship.

As a function of downwind distance, each of these models evaluates concentration and cloud width at both source and ground level.

Dense Gas Dispersion Model

The SLAB model for dense gas dispersion was used to model the high pressure gas releases and the gas liquids releases. This model has been validated against experimental data and is available in the public domain. It is appropriate for gas releases, which become cold when they expand from high pressure to atmospheric pressure upon escape from a pipe or vessel. The SLAB model includes the effects of air entrainment into high speed jets of gas, the gravity effects on cold dense gases which cause the cloud to slump and spread, the warming of the cloud and the

transition to a passive Gaussian dispersion. NTIS publication DE91-008443, available from the EPA, contains more details on the SLAB model.

A number of sources discuss the effects of jet entrainment and momentum dominated jets, including Lees "Loss Prevention in the Process Industries," and the CCPS "The Use of Vapor Cloud Dispersion Models" and "Vapor Cloud Source Dispersion Models Workbook." The Center for Chemical Process Safety discusses jet entrainment and momentum dominated jets. For releases from pressurized pipes and vessels, if the pressure exceeds two times the ambient pressure, then the flows are generally sonic, with speeds up to 400 m/s, and produce significant jet entrainment issues.

Several studies have validated the jet models in large-scale controlled releases at the Burro trials, Coyote trials, Desert Tortoise, and the Goldfish trials (Chan and Ermak 1983, Koopman 1983, and Morgan 1983).

It should be noted that using a jet model for the near-field dispersion produces smaller hazard zones than a simplified Gaussian model because the jet effects of a gas released from a pressurized source entrain large amounts of air. This entrained air causes more rapid dilution of the streams and, in combination with temperature and density effects, subsequently smaller hazard zones. Jet effects can reduce hazard zone estimates by up to 50 times over the simplified Gaussian estimates (CCPS, Lee). Given the extensive field validation of the effects of jets and near-field air entrainment, it is believed that the jet models are a more realistic estimate of hazard distances than the simplified Gaussian models.

Flame Jet Model

This model is designed to simulate turbulent diffusion flames (flame jets) and can characterize the turbulent flame length, diameter, temperature, and thermal radiation effects. This model is capable of simulating inclined turbulent jets, radiation fields, and the aerodynamic effects on radiant energy and flame stability. This model was used for all scenarios where potential flammable vapor releases were identified.

Unconfined and Partially Confined Vapor Cloud Explosion Model

A partially confined deflagration model was used to estimate overpressure levels for each flammable vapor release considered. This model is a theoretical one-dimensional model for predicting overpressures within several geometric configurations, and it accounts for the non-ideal behavior of burnt and unburnt gaseous components during high-pressure venting and multi-reaction chemical equilibrium. The pressure-time histories within the explosion chamber (i.e., confined space or vapor cloud) are calculated by the model and are in generally good agreement with small- and large-scale experimental data on methane-air, propane-air, and hydrocarbon mixture vented and unvented explosions. Explosion potential is expressed in terms of trinitrotoluene (TNT) equivalence, and well-known shock wave propagation relationships are used to estimate overpressure levels at specified distances from the explosion.

The potential for unconfined vapor cloud fires and explosions were also assessed using the IoMosaic SuperChems™ model. The potential for a vapor cloud explosion versus a vapor cloud

fire was assessed based on the physical characteristics of the hydrocarbon stream. Parameters that influence the potential for, and consequences of, a vapor cloud explosion include:

- Characteristics of ignition sources;
- Flame acceleration mechanisms;
- Deflagration to detonation transitions;
- Direct initiation of detonations;
- Overpressure levels within the combustion zone;
- Effects of pressure rise time dependency on structures versus TNT curves;
- Minimum amount of mass sufficient to sustain an unconfined vapor cloud explosion;
- Partial vapor cloud confinement and flame reflection characteristics; and
- Explosion efficiencies.

The SuperChems™ model was used to assess whether or not enough flammable mass could accumulate to sustain an unconfined vapor cloud explosion (a relatively large amount of flammable mass is required for the flame front in the vapor cloud to gain sufficient speed to result in a pressure wave within the vapor cloud). In most cases, the amount of flammable mass or the levels of confinement were not sufficient to sustain an unconfined vapor cloud explosion. In other cases, modeling results showed that vapor cloud ignition would be characterized by a deflagration (i.e., sub-sonic flame velocity) and would not transition to a full detonation (i.e., supersonic flame velocity).

Boiling Liquid Expanding Vapor Explosion Model

A boiling liquid expanding vapor explosion is a sudden loss of containment of a liquid that is above its boiling point (at atmospheric conditions). A boiling liquid expanding vapor explosion results in a sudden, vigorous liquid boiling and the production of a shock wave. Liquids stored under pressure (such as the gas liquids) fall into this category as well as any liquid that is stored at an elevated temperature above its boiling point. The main hazards presented by liquids stored under pressure are fireball and radiation.

Boiling liquid expanding vapor explosions were modeled using the SuperChems™ model for fireballs. The approach estimates the total energy that could be produced by the material combustion and the duration of the explosion. Impacts are estimated by integrating the energy flux over the time that the explosion occurs at different distances from the source of the explosion. Overpressure due to boiling liquid expanding vapor explosion was also estimated assuming the vessel fails due to overpressure, and the resulting shockwave is dissipated into the environment. The larger of the hazard zones pertaining to boiling liquid expanding vapor explosions (either overpressure or thermal radiation) was used to estimate risk.

Recent incidents indicate the extent to which gas liquid releases can cause impacts. In December 2006, a propane gas leak in a Milwaukee plant led to an explosion, killing three people and injuring 46 others. The explosion knocked workers off their feet, broke windows in nearby houses and businesses, and scattered burning debris over several blocks. Concussions from the blast were felt miles away (LA Times 2006).

A 1998 incident in Iowa provides valuable lessons regarding propane tank fires and boiling

liquid expanding vapor explosions. Vehicle impact sheared ¾ liquid pipe off of an 18,000-gallon propane tank. The excess flow valve on the line was not sized correctly and did not close. The resulting fire engulfed the tank, subsequently causing a boiling liquid expanding vapor explosion. Fire department personnel set up too close to the tank (100 feet) and two people were killed. Fragments thrown from the blast caused additional fatalities.

An incident on October 6, 2007, in Tacoma, Washington, involved a propane tanker truck and propane storage vessels. Reports indicate that a propane-truck driver off-loaded propane that may have leaked. Nearby welding may have created sparks that ignited the fumes. The propane tanker subsequently exploded, apparently damaging the propane storage tanks. The thermal impacts to the propane storage tanks caused the pressure relief devices on the propane storage tanks to relieve, sending a flame jet high into the air. The tanks continued to vent propane and produce a flame jet for multiple hours. The explosion was so intense that part of the tanker truck landed on a nearby highway. Video of the explosion was available on the internet. Video taken approximately 0.25 miles from the explosion indicated a large fireball. However, no overpressure impacts were felt at the video location except for car alarms activated by the pressure wave.

This incident serves to highlight the type of impacts that external events can have on active firefighting equipment, such as deluge systems. The explosion of the propane truck or the flame jets and high thermal impacts of releases effectively would have destroyed any fire-fighting capability of the deluge system. This is why deluge systems are assigned a relatively high failure rate in the fault trees.

Fatality and Serious Injury Rates

Since the release streams are flammable, releases could potentially result in thermal radiation exposure from a fire, and also present an overpressure hazard due to explosions from flammable vapor clouds or boiling liquid expanding vapor explosions. Damage criteria were developed in order to quantify the potential consequences of an accidental release. Damage criteria are defined as the levels of exposure that could produce fatalities and produce serious injuries.

Serious injury is defined as an impact from the exposure that could require medical intervention and could produce effects that last significantly longer than the duration of the exposure. An injury such as lung damage that would require hospitalization and/or other types of therapy would be considered a serious injury.

Thermal Radiation Damage Criteria

The potential concern associated with large-scale compressed gas vapor jet fires is thermal radiation intensity, and its effects on persons, the surrounding structures, processes, and fire suppression equipment. Table 4.2-3 presents an overview of thermal radiation intensity and observed effects. Data presented in these tables show that no considerable physical effect would result from exposure to a radiation intensity between 1 and 1.6 kW/m^2 over extended periods. Exposure to a radiation intensity of 5 kW/m^2 would result in pain if the exposure period were to exceed 13 seconds, and it would result in second-degree burns after 40 seconds. Exposure to a

radiation intensity of 10 kW/m^2 would result in pain (5 seconds) and second-degree burns after short exposure periods (i.e., 14 seconds), and death after longer periods.

Table 4.2-3 Thermal Radiation Serious Injury and Impacts

Intensity (kW/m2)	Impact
1	Time for severe pain - 115 seconds Time for second-degree burns - 663 seconds a
1.6	No discomfort for long exposure b
2	Time for severe pain - 45 seconds Time for second-degree burns – 187 seconds a
3	Time for severe pain - 27 seconds Time for second-degree burns - 92 seconds a
4	Time for severe pain - 18 seconds Time for second-degree burns - 57 seconds a
5	Time for severe pain - 13 seconds Time for second-degree burns - 40 seconds a
10	Time for severe pain - 5 seconds Time for second-degree burns - 14 seconds Time for 100% fatality - 270 seconds a c
12.5	Melting of plastic tubing b
25	Minimum energy to ignite wood b
37.5	Damage to process equipment b
100	Time for severe pain - <1 seconds Time for second-degree burns - 1 sec Time for 100% fatality - 11 seconds c

a. Based on Handbook of Chemical Hazard Analysis Procedures, FEMA. b. CCPS Chemical Process Quantitative Risk Analysis. c. CCPS Chemical Process Quantitative Risk Analysis using probit equation by Eisenberg

The time required to reach pain, second-degree burn, and fatality thresholds were used to estimate radiation levels that would result in serious injury or fatality. Persons exposed to thermal radiation have the opportunity to move away from the hazard, unlike overpressure effects or vapor cloud fires and explosions, which are instantaneous. It was assumed in this analysis that some people not within the flame area would move away from the flame to get away from the heat. Analysis of the distances to various radiation levels indicates that this is feasible. Therefore, a less than 1 minute exposure was used as the basis for determining the damage criteria. Exposure to a thermal radiation level of 10 kW/m^2 could result in a serious injury (at least second-degree burns) if exposed for less than 1 minute, and it was, therefore, assumed that all persons exposed to 10 kW/m^2 would suffer serious injuries. Serious injuries would start to be realized at and above 5 kW/m^2. Exposure to thermal radiation levels in excess of 10 kW/m2 would likely begin to generate fatalities in less than 1 minute. All persons exposed to thermal radiation within the flame area were assumed to suffer fatalities regardless of exposure duration.

Flammable Vapor Criteria

A release of flammable material can produce impacts by producing a cloud of the flammable material that, if it encounters an ignition source, either explodes or burns (deflagration) back to the material source. Persons located within the cloud when it explodes or burns could be

seriously impacted. Whether the cloud explodes or burns is a function of the material and the level of confinement in the environment in which the cloud is located (e.g., within pipe racks, between buildings).

All release scenarios from the Proposed Project could contain flammable vapors. Potential ignition sources onsite are primarily located in the gas plant with fewer ignition sources throughout the field mostly associated with drilling or well workover operations or compressors or pumps.

Several biological and structural explosion damage criteria were reviewed, specifically the Center for Chemical Process Safety "Evaluating Process Plant Buildings for External Explosions and Fires" and Center for Chemical Process Safety "Chemical Process Quantitative Risk Analysis." This reference indicates that persons within a structure suffer considerably more damage than persons in the open due to overpressures. This is primarily due to secondary object impacts. Table 4.2-4 details the levels of impacts at various overpressure levels to buildings, equipment and persons.

Table 4.2-4 Overpressure Damage

Overpressure Level	Impact
0.04	Loud noise, sonic boom (143 dBA)
0.15	Glass breakage
0.30	Center for Chemical Process Safety projectile limit, 10% broken window glass, 95% no serious damage
1.0	Wood trailer roof and walls collapse Unreinforced masonry building partial collapse Estimated 10% injury rate
5.0	Wood trailer completely destroyed Unreinforced masonry building completely destroyed Utility poles snapped Estimated 100% injury rate
6.0	Reinforced building major damage/collapse Estimated 40% fatality rate
7.0	Loaded train wagons overturned
12.0	Reinforced building completely destroyed Estimated 100% fatality rate
15.0	Lung hemorrhage, lower range of direct human fatalities

Source: CCPS 1989

An overpressure level of 0.3 psi would likely result in broken windows and some potential for serious injury. Complete structural damage and serious injury/fatality could occur for wooden

buildings and unreinforced masonry as a result of exposure to an overpressure level of 1.0 psi. An overpressure level of 5.0 psi would result in structures being completely destroyed and an estimated 100 percent serious injury/fatality to building occupants.

Deflagration of the vapor cloud would produce impacts to persons located within the flammability limits of the vapor cloud. Persons located within the lower flammability limit would most likely suffer at least serious injuries. As there is some natural variability within the cloud, it is assumed that persons located within the area that would be encompassed by a level of concern equal to one-half the lower flammability limit (a larger area than the lower flammability limit area) would suffer serious injuries.

Table 4.2-5 details the criteria selected for the risk analysis for both fatalities and serious injuries. In this table, the zero percent fatality or serious injury level is the level at which fatalities or serious injuries could begin to occur.

Table 4.2-5 Fatality and Serious Injury Rates

Event	Fatality	Serious Injury	Reference
Vapor Cloud Fire	30% fatality within the lower flammability limit	100% injury within the lower flammability limit 50% injury within ½ lower flammability limit	Assumes 30% of the population is outdoors and would suffer 100% fatalities within the lower flammability limit. Assumes indoor population would not suffer more than serious injury due to subsequent fire and damage. Outdoor population percentage estimated.
Thermal Radiation Jet Fire or Pool Fire	100% fatality within flame jet area 10% fatalities at 10 kW/m2	100% injury at 10 kW/m2 10% injury at 5 kW/m2	Based on Handbook of Chemical Hazards Analysis Procedures, exposure to 10 kW/m2 produces second-degree burns in 14 seconds, 10% fatalities at 60 seconds based on Eisenberg Probit Equation (1975). Injury based on time to second-degree burns of less than 1 minute for 10 and 5 kW/m2.
Boiling Liquid Expanding Vapor Explosion: Radiation Dosages	10% fatalities at 80 kJ/m2	100% injury at 80 kJ/m2 10% injury at 25 kJ/m2	Based on total energy integration over boiling liquid expanding vapor explosion duration using the jet fire energy rate.
Explosion: Over Pressure	10% fatalities at 1 psi	5% injury at 0.3 psi	Based on Center for Chemical Process Safety Process Plant Buildings (Table 4.8) where occupants of a building experience 10% fatality at 1 psi for an unreinforced masonry or wood framed building. Injuries produced at 0.3 psi overpressure assumed to be 5% as per the probability of serious damage.
Toxic	1,000 ppm 10% fatality	100 ppm 10% injury	Estimated based on OSHA exposure limits and animal studies.

Notes: kW/m^2 = kilowatts per square meter; kJ/m^2 = kilojoules per square meter; psi = pounds per square inch; ppm = parts per million

Risk Analysis

The results of the failure rate and consequence analysis are finally combined to develop risk profile curves (plots of frequency versus the number of fatalities or serious injuries). These risk profile curves are commonly called risk profiles and represent "societal risk." This is the risk that a person could sustain serious injury or fatality. In calculating the risk profiles, a computer model of the pipelines, facility, and surrounding area was prepared. The population distribution and probabilities of ignition were specified across the area of the model; and the likelihood of an individual fatality or injury occurrence was calculated at each grid location in the model.

The analysis has assumed that the facilities are operating at their current levels and that the populations near the facility are at their current estimated levels.

To develop the risk profile, many factors were considered. Each release scenario was evaluated for all wind directions, and for each combination of stability and wind speed. In any given direction of travel, the chances of having the particular wind stability class, the cloud igniting on-site, and the cloud igniting offsite at every downwind location from the release site was evaluated. The frequency of attaining the maximum downwind distances for flammable vapor dispersion will be reduced if the vapor cloud encounters ignition sources at the point of release or at any point along its travel path.

The approach for general calculations followed these steps:

- Summarize meteorological data into representative wind direction, wind speed and stability conditions;
- Construct a model of the site and surrounding area, including populations and population densities;
- Identify the ignition sources and enter the ignition probabilities;
- Select the release events, along with the likelihood of release, consequence data and release locations;
- Determine the event trees; likelihood and consequences of immediate ignition, vapor cloud fires, jet fires, and explosions as appropriate, for each condition;
- Determine the probability of ignition at each point along the path of a dispersing vapor cloud;
- Select another release event and repeat the preceding three steps;
- Apply conditional probabilities of fatality given exposure, for each type of consequence (i.e., thermal exposure, vapor cloud exposure);
- Aggregate the likelihood of all probabilities of fatality at each location in the model for all the release scenarios; and
- Construct risk profiles, or frequency number, of fatality curves by summing the number of fatalities for each event outcome and plotting the results against the frequency. This was also done for serious injuries.

Meteorological Data

Meteorological data is used for the closest monitoring location. Atmospheric stability classes D and F are selected as characteristic wind stability conditions. Based on wind speed conditions for these stability classes, a wind speed of 4.0 m/s is usually selected for stability class D (neutral atmospheric stability), while a wind speed of 2.0 m/s was selected for stability class F (stable atmospheric conditions).

Population Data

Population information is gathered for locations within 0.5 miles of the Project Site. These locations are listed, along with the estimated populations, population densities, and ignition probabilities.

Populations at these areas were entered into the Quantitative Risk Assessment Model. Information was gathered from site visits, estimates of populations from housing counts generated from aerial photographs, and from Census data.

Ignition Probabilities

Flammable vapor clouds have the potential to ignite anywhere within their flammable limits. Hence, it is necessary to identify potential ignition sources that a cloud may encounter, and to quantify the likelihood of ignition if the cloud encompasses these sources. When determining ignition probabilities, there are two factors to take into account; source duration and source intensity. Source duration is the fraction of time that the source is present or in operation. Source intensity is the chance of the source actually causing ignition if contacted by a flammable cloud. For example, if a ground level flare is operating, it will almost always ignite a cloud, but it may only operate ten percent of the time. This would generate an overall chance of ignition by the ground level flare of 0.1 (or 10 percent).

In general, when trying to identify ignition sources, the search is primarily for open flames, hot surfaces and electrical sparks, and, to a lesser extent, friction sparks from both continuous and intermittent activities. Extensive listings of potential ignition sources and estimates of ignition probabilities may be found in the literature (CCPS 1989, UK 2004).

Typical ignition probabilities that were used in the analysis include:

- Cars – 0.06 per car; although many potential ignition sources within a car, such as faulty wiring or backfires, are due to fuel rich mixtures in intake air, they are not always present nor guaranteed to cause ignition. This value was also applied to golf carts (CCPS).
- Houses – 0.01 per house; while there are many ignition sources within a home (switches, doorbells, faulty wiring, pilot lights, smoking materials, fireplaces, and stoves), the flammable vapors must first penetrate the house before these ignition sources pose a hazard. Typical residence times of clouds are brief enough that this is relatively unlikely (CCPS).
- Industrial Areas – 0.1 for light industrial, 0.25 for medium industrial and 0.5 for heavy industrial areas. Heavy industrial areas are classified as having large motors, high temperature surfaces and open flames (UKHSE 2004).

In order to estimate the number of vehicles, traffic counts for particular roads were used along with average speeds to determine the density of vehicles per mile and probabilities of ignition along roadways.

The onsite equipment that would most likely produce ignition would be equipment such as compressor motors or flares. Releases of materials that, due to wind direction, move over these sources are assumed to experience ignition and not travel offsite.

Post Accident Event Trees

Event trees are used to determine the fate of a released material after the release has occurred. A release of a flammable material, for example, could experience instantaneous ignition leading to a flame jet. It could also disperse downwind, encounter an ignition source and burn or explode, or it could disperse safely. Table 4.2-6 shows the probability of each of these scenarios for rupture and leak events. These probabilities are based on Center for Chemical Process Safety recommendations (CCPS 1989). Larger releases, which involve greater energies associated with metal failure and/or impacts, have a higher probability of igniting at the source and causing a flame jet than smaller releases.

Table 4.2-6 Event Tree Probabilities

Event Tree: Rupture Events (large releases > 50 kilograms per second)

Event	Probability
Immediate Ignition	0.25
Vapor Cloud with Flash Fire	0.75

Event Tree: Leak Events (smaller releases <50 kilograms per second)

Event	Probability
Immediate Ignition	0.10
Vapor Cloud with Flash Fire	0.90

Event Tree: Gas Liquids Releases

Event	Probability
Immediate Ignition	0.08
Vapor Cloud with Flash Fire	0.90
Explosion/boiling liquid expanding vapor explosion	0.002 - .07*

* - depends on configuration
Source: CCPS 1989

Construction of Risk Profiles

Risk profiles display the frequency with which public safety impacts/consequences (e.g., fatalities or serious injuries) exceed a given magnitude. They can be used to show property damage (among others), but are generally used for public safety impacts. The risk profiles indicate accident size (based on numbers of persons affected) and display how the potential

number of fatalities varies as a function of frequency. Risk profiles are generally plotted on logarithmic scales because they span multiple orders of magnitude.

There are many sources of uncertainty that affect the risk profiles. These uncertainties include:

- Release frequency;
- Release size;
- Population impacts, including distribution and likelihood of fatality/serious injury;
- Behavior of the release (jet mixing versus passive dispersion);
- Accuracy of the hazard models; and
- Ignition sources and probabilities.

The release frequencies and sizes are the most important contributors to overall uncertainty. Changes in failure rates will directly influence the risk profile. A doubling of the event frequencies would double the probability of fatalities. Changes in the relative sizes of leaks and ruptures will influence the risk profile, but to a lesser extent. The assumptions concerning population distribution and ignition probability also influence the risk profiles.

Release Scenarios

To develop the release scenarios, proposed equipment and operations were grouped by operating parameters. Specifically, equipment with similar temperature, pressure, and composition was grouped together to generally produce a set of release scenarios for each process. Each set of release scenarios contained at least one rupture release and one leak release. A rupture is a large release of material over a short period of time caused, for example, by catastrophic equipment failure, such as a large pipe breaking open or a vessel falling over and fracturing. Ruptures are generally associated with releases through holes greater than 1 inch in diameter. A leak is a small process inventory released from a small valve failure or hole in a vessel, for example, generally less than 1 inch in diameter.

This approach encompasses a range of risks by including a less frequent but more severe scenario, and a more frequent but less severe scenario. It is important to note that, in some cases, the leak release actually produces a higher risk (i.e., combination of consequence and frequency) than the associated rupture release because leaks occur more frequently than ruptures.

The principal hazards most likely to affect public health at the Project Site include:

- Releases of flammable gas causing vapor cloud explosions or thermal impacts from fire and flame jets; and
- Releases of crude oil with subsequent fire causing impacts from thermal exposure to crude oil fires.

Scenario 1: Rupture of Gas Piping

This scenario involves rupture of the gas piping within the Refinery. Failure would be due to piping ruptures or leaks. This scenario was modeled as both a rupture and a leak, with the entire contents of the gas system being released. The rupture case conservatively assumed a break

equal to a three inches hole operating at 500 psig. The leak case assumed a hole size of one inch. The release was modeled at normal operating pressure and temperature and the gas composition was produced gas. Possible consequences include flame jets and flammable vapor clouds. Impact distances would be less than 200 feet for fatalities and less than 500 feet for injuries.

Scenario 2: Crude Oil Release with Fire

This scenario encompasses the crude oil storage systems at the Refinery. The equipment includes crude oil storage tanks and piping. The scenario assumes a catastrophic loss of the tank contents with subsequent ignition and fire within the tank berms. Possible consequences include large crude oil fire and thermal radiation. Impacts distances for a large crude oil fire would be less than 180 feet for fatalities and less than 220 feet for injuries.

Scenario 3: Crude Oil Spill

This scenario encompasses the crude oil pipelines that transport crude oil to/from the Refinery. The equipment includes crude oil pipelines between the Santa Maria Pump Station and the Refinery and the pipeline that runs from the Refinery to Rodeo. In the event of a pipeline rupture, the leak detection system should be capable of detecting and isolating the spill. Once the pipeline is shutdown, the oil would continue to spill until the oil was drained from the associated segments of the pipeline. The maximum spill volumes from the pipeline are a function of the location of the pipeline rupture in relationship to isolation valves (motor operated valves, or MOVs or manual valves), check valves, and the pipeline elevation profile, and the duration of the pumping that occurs before the rupture is detected. If the SCADA system is not operational, or is overridden by an operator, it is assumed that the pumping would continue for 60 minutes before a rupture would be detected.

4.2.1.4 Existing Operations

For the public safety analysis, the study area includes the existing facilities and pipelines. The sources of risks include current operations at the Refinery, truck transportation of hazardous materials, and crude oil pipelines. Several detailed precautionary programs are in effect at the site to minimize risk and control spills.

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Santa Maria Refinery Risk of Upset

The Santa Maria Refinery processes crude oil and produced gas, both of which could present risks to the public. Crude oil is processed and then stored in tanks that could spill and ignite, creating thermal radiation impacts. Thermal radiation impacts from crude oil tank fires could cause injury 220 feet away. The closest population to the crude oil tanks at the Refinery is industrial area 425 feet northeast of the crude oil storage facilities. The closest residence to the crude oil tanks, which is located within the industrial area, is 1,200 feet northeast of the tank storage area. The gas processing equipment and piping are within the Refinery, at least 1,700 feet from the Refinery fence line and the closest receptor on industrial property. Given the limited population and significant distance between these receptors and the Refinery, there would not be a significant risk level.

A search of historical release data for the Refinery through the Federal Emergency Response Notification System indicates that in the last 28 years a total of 16 reportable releases occurred (from 1982 through 2010). Fifteen of these releases, 94%, were associated with releases of excess gases to the emergency-only flare stack due to equipment failures, including boiler and compressor failures. The flare is designed to be the refinery's emergency vent and is used to safely handle excess pressure and prevent threats to human safety and property. In 2004, a leaking crude oil pipeline leading to the refinery resulted in a release to soil that was discovered and repaired in a timely manner. All impacted soil was cleaned up promptly.

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Transportation of Hazardous Materials on Roadways

Materials transported by truck and rail could cause impacts if those materials are spilled. Crude oil transported to the Santa Maria Pump Station, as well as sulfur and coke transported by truck and rail, would primarily cause environmental impacts in the immediate vicinity of the spill. Crude oil and solid sulfur are not acutely hazardous materials. Coke is not a hazardous material. If crude oil was spilled, fire could occur along the transportation route at the accident location. Given the properties of crude oil, the likelihood of an explosion is virtually non-existent and consequently explosion scenarios are not addressed further in this document. Fire thermal impacts would be limited to the immediately vicinity of the spill site. Risk levels would be minimal due to the properties of crude oil and impacts would be associated primarily with environmental issues.

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Transportation of Hazardous Materials by Pipeline

Materials transported by pipeline could cause impacts if those materials are spilled. Crude oil transported from the Santa Maria Pump Station could cause primarily environmental issues in the immediate vicinity of the spill, which could include downstream areas if a spill drains into a creek area. Crude oil is not an acutely hazardous material. If crude oil was spilled, fire could occur along the transportation route at the accident location. Given the properties of crude oil, the likelihood of an explosion is virtually non-existent and consequently explosion scenarios are not addressed further in this document. Fire thermal impacts would be limited to the immediately vicinity of the spill site. Risk levels would be minimal due to the properties of crude oil and impacts would be associated primarily with environmental issues.

Statistics on public safety impacts related to crude oil transportation suggest that the potential for injuries is low. The DOT Office of Pipeline Safety (OPS) database indicates there have been no fatalities, and nine out of 841 crude oil pipeline incidents led to injuries over a 14-year period in the United States, although none of these injuries were to the public. For the period pre-1985 (1968 to 1985) there were eight incidents that produced fatalities, and 12 incidents that produced injuries on crude oil pipelines, although none of these were impacts to the public. But the OPS database is unclear if these incidents occurred at or near other processing equipment (i.e., within a facility). The California State Fire Marshal's Hazardous Liquid Pipeline Risk Assessment report (CSFM 1993) indicates that over a 10 year period there have been no injuries or fatalities associated with crude oil pipeline spills in California. In general, unlike a gas release (which occurs much quicker), the lack of public impacts from crude oil spills is due to the possibility

that most persons move out of the way of a spill and are not directly affected if it catches fire.

Santa Maria Pump Station to Refinery Pipeline

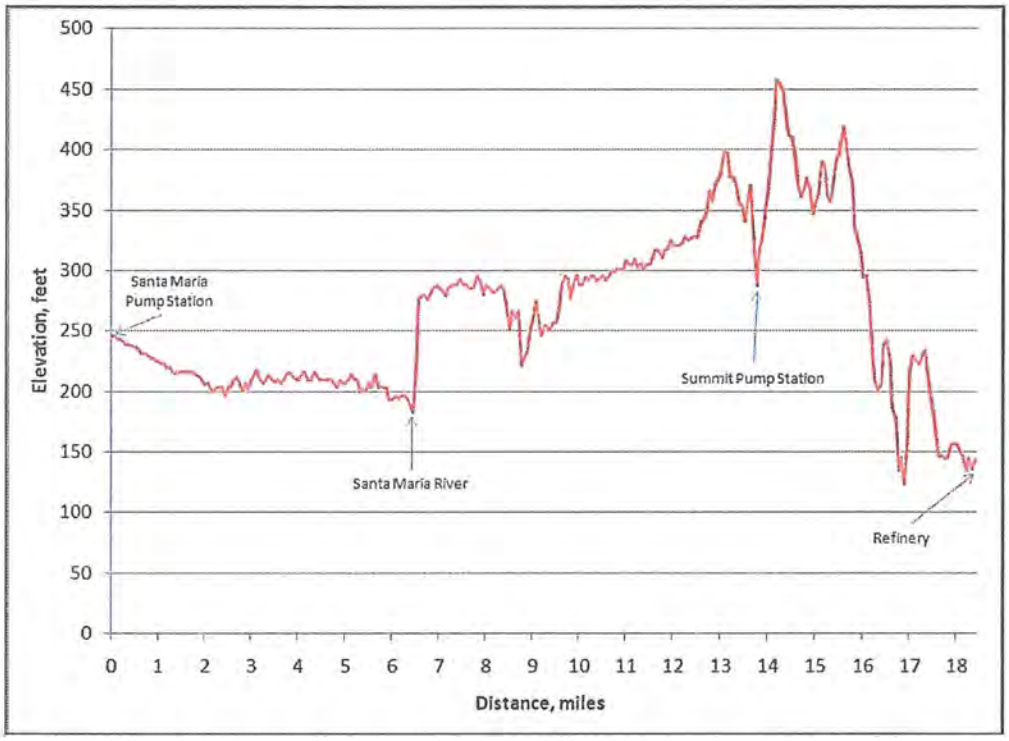
The pipeline between Santa Maria Pump Station and the Refinery contains a manual check valve on the north side of the Santa Maria River, which would prevent the oil from flowing backwards along the downhill gradient from the Summit Pump Station in the event of a spill. The Santa Maria and Summit pump stations also have automatic valves.

Spill volumes are calculated based on the pipeline elevation profiles shown in Figure 4.2-2 and previous environmental impact reports prepared for the pipeline (SBC 2001). Spill volumes could be as high as approximately 8,400 barrels between the Santa Maria Pump Station and the Summit Pump Station. The most sensitive area would be the Santa Maria River crossing and the Nipomo Creek corridor.

Refinery to Rodeo Pipeline

Spills associated with the Refinery to Rodeo pipeline would be a function of the pipeline size, flow rates, and the pipeline elevation profile.

Figure 4.2-2 Santa Maria Pump Station to Refinery Pipeline Elevation Profile



Hazardous Materials Contamination and Transport

The Refinery must submit information on wastes generated, transported, or released offsite to the EPA as part of the Toxic Release Inventory Program and the Biennial Reporting System. Toxic Release Inventory reports indicate that the Refinery generates more than 155,000 pounds of waste annually; approximately 122,000 pounds are treated onsite, 300 pounds are recycled, 1,000 pounds are treated offsite, and 32,000 pounds are released (mostly into the air as sulfuric acid).

The Environmental Protection Agency has identified the Refinery as a "corrective action" site due to contamination. According to EPA Resource Conservation and Recovery Act reports, the site has human exposure "under control," but migration of contaminated groundwater is "not under control." This designation could be misleading and should not be misunderstood. EPA staff explains that this designation is used when the agency has not had the time to recently certify a site's groundwater situation. EPA last reviewed groundwater conditions at SMR in 1990. The site has yet to be re-evaluated under this program. As a result, SMR groundwater can not yet be certified as "under control" by EPA. Contacts with the RWQCB indicate that 1) there has been regular groundwater monitoring at the site for over twenty years; 2) Reports indicate low levels of TPH and metals, conditions not uncommon in groundwater; 3) . The low levels of

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contamination is only measured periodically at a couple of wells. The low level concentration is not pervasive in groundwater across the site instead, it is a localized phenomenon. The low levels of contamination in the groundwater is associated with irregular rain fall and interference from organics in the soil. A study conducted in 2000 to determine whether a relationship between coke on soil and contamination of groundwater exist found no relationship between coke piles and contamination ; 4) DTSC is the lead agency on historic waste pile clean up projects at the site; and 5) RWQCB is the lead agency on any groundwater contamination.

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The Biennial Reporting System database contains data on the generation, shipment, and receipt of hazardous waste. The Refinery generated and shipped offsite approximately 46 tons of hazardous wastes annually, which is summarized in Table 4.2-7. Refinery-generated waste is shipped to several nearby facilities.

Table 4.2-7 Hazardous Wastes Generated by the Refinery

Material	Annual Amount, tons	Destination City, State
Activated Carbon	2.98	Veolia, Azusa, CA
Misc Debris	0.11	Veolia, Azusa, CA
Aqueous Waste from lab	2.25	Veolia, Azusa, CA
Oily Water Sewer Debris	37.17	Aragonite, UT
Paint Slops	0.90	Veolia, Azusa, CA
Refinery Sludge	0.75	Veolia, Azusa, CA
CEM Lead Acetate Tape	0.03	Veolia, Azusa, CA
Parts Washer Solvent	1.70	Safety-Kleen, Santa Ana, CA
Lead contaminated Material	0.10	Veolia, Azusa, CA

Source: Biennial Reporting System database search 2007 (most recent available)

Veolia ES Technical Solutions

Veolia ES Technical Solutions is a 7-acre, solvent recycling and resource recovery facility at 1704 West First Street in Azusa, California. The Veolia facility receives hazardous waste, including benzenes, dioxins, heavy metals, and other toxic organics and inorganics. The facility recycles used solvents, distributes new solvents, and blends used solvents and oils to produce fuel substitutes. Wastes are accepted in bulk and in drums. Veolia restricts the acceptance of dioxins, polychlorinated biphenyls, radioactive wastes, reactive wastes, biological wastes and infectious materials (CDTSC 2011). The process equipment for solvent reclamation includes two distillation units and a thin film evaporator. In 2009, total waste disposal in the landfill was 27,738 tons.

Veolia primarily serves paint and electronics companies, the aerospace industry, printers, and manufacturers in Los Angeles and Orange counties. A Part B permit was issued to this facility in August of 1983. Veolia's EPA ID is CAD008302903.

The Safety-Kleen Santa Ana

The Safety-Kleen Santa Ana facility has operated 2120 South Yale Street in Santa Ana,

California, since the 1970s. The facility is within an industrial/commercial zoned area. The Safety-Kleen Santa Ana facility bulks and stores containers of hazardous wastes until it accumulates large enough quantities to cost effectively transport the waste to an authorized treatment, recycling, or disposal facility. Hazardous waste is not treated or disposed of at this location. In 2007, total waste disposal was 1,419 tons. The facility Spent Solvent Tank has a capacity of 12,000 gallon and the Container Storage Area has a capacity of 18,500 gallons. Safety-Kleen Santa Ana's EPA ID is CAT000613976 (CDTSC 2011).

The Aragonite Facility

The Aragonite Facility is a commercial incinerator, transfer, and storage facility in a remote area of Tooele County, Utah, approximately 2.5 miles south of Interstate 80. It was formerly known as Safety-Kleen (Aragonite) Inc., Laidlaw Environmental Services (Aragonite), Inc. and Aptus, Inc. The incinerator is a 140- million-British-thermal-unit slagging rotary kiln with a vertical afterburner chamber. The gas cleaning train consists of a spray dryer, baghouse, saturator, wet scrubber, and wet electrostatic precipitator. Permitted waste storage areas include a bulk liquid tank farm (16 approximately 30,000-gallon tanks); drum storage buildings (approximately 10,000-drum capacity); sludge storage tanks (approximately 38,000-gallon total capacity); and bulk solids storage tanks (approximately 1100-cubic-yard total capacity).

The facility handles hazardous wastes, polychlorinated biphenyls, industrial wastes, and other non-hazardous wastes. The facility is designed to handle high and low British thermal unit liquid wastes, sludges, bulk solids, and containerized wastes. The current permitted capacity of the incinerator is approximately 13 tons per hour. It typically processes approximately 50,000 tons per year, operating 24 hours per day (UDEQ 2011).

There will be no change in solid waste generated by the site as a result of this project. [1]

4.2.2 Regulatory Setting

Many regulations and standards exist to ensure the safe operation of oil and gas facilities, pipelines, and hazardous materials. This section provides an overview of the federal, state, and local regulations. ConocoPhillips [2] has programs in place to [3] comply [4] [5] with each of these standards. [6]

4.2.2.1 Federal Laws and Regulations

Federal laws address gas and liquid pipelines and oil and gas facilities. ConocoPhillips has programs in place to comply with each of these standards. [7]

Liquid Pipelines and Oil Facilities

Hazardous liquid pipelines are under the jurisdiction of the DOT and must follow the regulations in 49 CFR Part 195, Transportation of Hazardous Liquids by Pipeline, as authorized by the Hazardous Liquid Pipeline Safety Act of 1979 (49 USC 2004). Other applicable Federal requirements are contained in 40 CFR Parts 109, 110, 112, 113, and 114, pertaining to the need for Oil Spill Prevention Control & Countermeasures Plans; 40 CFR Parts 109–114 promulgated in response to the Oil Pollution Act of 1990.

Overview of the 49 CFR 195 Requirements.

Part 195.30 incorporates many of the applicable national safety standards of the:

- American Petroleum Institute (API);
- American Society of Mechanical Engineers (ASME);
- American National Standards Institute (ANSI); and
- American Society for Testing and Materials (ASTM).

Part 195.50 requires reporting of accidents by telephone and in writing for:

- Explosion or fire not intentionally set by the operator;
- Spills of 5 gallons or more or 5 barrels if confined to company property and cleaned up promptly;
- Daily loss of 5 barrels a day to the atmosphere;
- Death or injury necessitating hospitalization; or
- Estimated property damage, including cleanup costs, greater than $50,000.

The Part 195.100 series includes design requirements for the temperature environment, variations in pressure, internal design pressure for pipe specifications, external pressure and external loads, new and used pipe, valves, fittings, and flanges.

The Part 195.200 series provides construction requirements for standards such as compliance, inspections, welding, siting and routing, bending, welding and welders, inspection and nondestructive testing of welds, external corrosion and cathodic protection, installing in-ditch and covering, clearances and crossings, valves, pumping, breakout tanks, and construction records.

The Part 195.300 series prescribes minimum requirements for hydrostatic testing, compliance dates, test pressures and duration, test medium, and records.

The Part 195.400 series specifies minimum requirements for operating and maintaining steel pipeline systems, including:

- Correction of unsafe conditions within a reasonable time;
- Procedural manual for operations, maintenance, and emergencies;
- Training;
- Maps;
- Maximum operating pressure;
- Communication system;
- Cathodic protection system;
- External and internal corrosion control;
- Valve maintenance;
- Pipeline repairs;
- Overpressure safety devices;

- Firefighting equipment; and
- Public education program for hazardous liquid pipeline emergencies and reporting.

ConocoPhillips has programs in place to comply with each of these standards. [1]

Overview of 40 CFR Parts 109, 110, 112, 113, and 114

The SPCCs covered in these regulatory programs apply to oil storage and transportation facilities and terminals, tank farms, bulk plants, oil refineries, and production facilities, as well as bulk oil consumers, such as apartment houses, office buildings, schools, hospitals, farms, and state and federal facilities as follows:

- Part 109 establishes the minimum criteria for developing oil-removal contingency plans for certain inland navigable waters by state, local, and regional agencies in consultation with the regulated community (i.e., oil facilities).
- Part 110 prohibits discharge of oil such that applicable water quality standards would be violated, or that would cause a film or sheen upon or in the water. These regulations were updated in 1987 to adequately reflect the intent of Congress in Section 311(b) (3) and (4) of the Clean Water Act, specifically incorporating the provision "in such quantities as may be harmful."
- Part 112 deals with oil spill prevention and preparation of Spill Prevention Control and Countermeasure Plans. These regulations establish procedures, methods, and equipment requirements to prevent the discharge of oil from onshore and offshore facilities into or upon the navigable waters of the United States. These regulations apply only to nontransportation-related facilities.
- Part 113 establishes financial liability limits; however, these limits were preempted by the Oil Pollution Act of 1990.
- Part 114 provides civil penalties for violations of the oil spill regulations.

Overview of 6 CFR Part 27

Chemical Facility Anti-Terrorism Standards, 6 CFR 27. The Federal Department of Homeland Security established the chemical facility anti-terrorism standards of 2007. This 2007 rule established risk-based performance standards for the security of chemical facilities. It requires covered chemical facilities to prepare Security Vulnerability Assessments, which identify facility security vulnerabilities, and to develop and implement Site Security Plans, which include measures that satisfy the identified risk-based performance standards.

ConocoPhillips has programs in place to comply with each of these standards. [2]

Hazardous Waste Handling Requirements

Resource Conservation and Recovery Act and Associated Hazardous and Solid Waste Amendments, 40 CFR 260

Implementation of Resource Conservation and Recovery Act (RCRA) resulted in the creation of

a major federal hazardous waste regulatory program that is administered by the EPA. Under RCRA, the EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended by the Associated Hazardous and Solid Waste Amendments (HSWA), which affirmed and extended the concept of regulating hazardous wastes from generation through disposal. HSWA specifically prohibits the use of certain techniques for the disposal of some hazardous wastes. Under RCRA, individual states may implement their own hazardous waste programs instead of RCRA, as long as the state program is at least as stringent as the Federal RCRA requirements. The EPA approved California's program to implement Federal hazardous waste regulations on August 1, 1992.

ConocoPhillips has programs in place to comply with each of these standards. In addition, the project involves no construction and therefore should not affect existing hazardous waste programs. [1]

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National Emissions Standards for Hazardous Air Pollutants, 40 CFR 61 Subpart M ¶
¶
Under Subpart M, an asbestos containing materials survey must be performed prior to renovation or demolition activities. Notification to the lead agency is required 14 days prior to the start of work (disturbance of asbestos containing materials). Additional federal- and state-level asbestos requirements related to OSHA standards in 29 CFR 1926.1101 are covered by the Asbestos Construction Standard, Title 8, CCR Section 1529, which is described separately below. ¶
¶
The Worker Protection Rule (40 CFR 763, Subpart G, and 29 CFR 1910.1001) provides worker protection measures through engineering controls, worker training, labeling, respiratory protection, and waste management; the rule also defines asbestos containing materials and sets the permissible exposure level for asbestos. ¶ [2]

Emergency Planning and Community Right-to-Know Act

Under the Emergency Planning and Community Right-to-Know Act, or Title III of the Superfund Amendments and Reauthorization Act of 1986, the EPA requires local agencies to regulate the storage and handling of hazardous materials and requires development of a plan to mitigate the release of hazardous materials. Businesses that handle any of the specified hazardous materials must submit to government agencies (i.e., fire departments or Public Health Departments), an inventory of the hazardous materials, an emergency response plan, and an employee training program. The business plans must provide a description of the types of hazardous materials/waste onsite and the location of these materials. The information in the business plan can then be used in the event of an emergency to determine the appropriate response action, the need for public notification, and the need for evacuation.

In 1990, Congress passed the Pollution Prevention Act which requires facilities to report additional data on waste management and source reduction activities to EPA under Toxics Release Inventory Program. The goal of the Toxics Release Inventory is to provide communities with information about toxic chemical releases and waste management activities and to support informed decision making at all levels by industry, government, non-governmental organizations, and the public.

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ConocoPhillips has programs in place to comply with each of these standards. [4]

Hazardous Materials Management Planning

Section 112(r) of the Clean Air Act Amendments of 1990, 40 CFR 68

The EPA requires facilities that handle listed regulated substances to develop Risk Management Programs (RMP) to prevent accidental releases of these substances. RMP materials are submitted to both local agencies (generally the fire department) and the Federal EPA. Stationary sources with more than a threshold quantity of a regulated substance shall be evaluated to determine the potential for, and impacts of, accidental releases of that substance. Under certain conditions, the owner or operator of a stationary source may be required to develop and submit a Risk Management Program. Risk Management Programs consist of three main elements: a hazard

assessment that includes off site consequences analyses and a five-year accident history; a prevention program; and an emergency response program.

National Contingency Plan Requirements

Spill Prevention Control and Countermeasures Plans, 40 CFR 112.3 and 112.7

Facilities that store large volumes of hazardous materials are required to have a Spill Prevention Control and Countermeasures Plans (SPCCP) per the requirements of 40 CFR 112 submitted to the EPA. The SPCCP is designed to prevent spills from onsite facilities and includes requirements for secondary containment, provides emergency response procedures, and establishes training requirements.

Hazardous Materials Transportation

The Hazardous Materials Transportation Act, 49 CFR 171, Subchapter C

The DOT, Federal Highway Administration, and the Federal Railroad Administration regulate transportation of hazardous materials at the Federal level (state requirements are discussed in following sections). The Hazardous Materials Transportation Act requires that carriers report accidental releases of hazardous materials to DOT at the earliest practical moment. Other incidents that must be reported include deaths, injuries requiring hospitalization, and property damage exceeding $50,000.

Worker Health and Safety

Occupational Safety and Health Act, 29 CFR et seq.

Under the authority of the Occupational Safety and Health Act of 1970, the federal OSHA has adopted numerous regulations pertaining to worker safety (29 CFR) and provides oversight and enforcement (along with CalOSHA in California). These regulations set standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries. Some OSHA regulations contain standards relating to hazardous materials handling, including workplace conditions, employee protection requirements, first aid, and fire protection, as well as material handling and storage.

There will be no change in worker safety or affected conditions due to this project. [1]

Hazard Communication, 29 CFR 1910.1200

The purpose of the OSHA Hazard Communication law is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning any potential hazards is transmitted to employers and employees. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets, and employee training.

Process Safety Management, 29 CFR 1910.119

Under this section, facilities that use, store, manufacture, handle, process, or move hazardous materials are required to:

- Conduct employee safety training;
- Have an inventory of safety equipment relevant to potential hazards;
- Have knowledge on use of the safety equipment;
- Prepare an illness prevention program;
- Provide hazardous substance exposure warnings;
- Prepare an emergency response plan; and
- Prepare a fire prevention plan.

In addition, 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals, OSHA specifically requires prevention program elements to protect workers at facilities that have toxic, flammable, reactive or explosive materials. Prevention program elements are aimed at preventing or minimizing the consequences of catastrophic releases of chemicals and include process hazard analyses, formal training programs for employees and contractors, investigation of equipment mechanical integrity, and an emergency response plan.

ConocoPhillips has programs in place to comply with each of these standards[1] and conducts regular audits to verify worker safety and minimize exposure.[2]

4.2.2.2 California Laws and Regulations

State laws address gas and liquid pipelines, oil and gas facilities and hazardous materials and waste. ConocoPhillips has programs in place to comply with each of these standards.[3] The following sections discuss each of these.

California Health and Safety Code

- Division 20, Chapter 6.5, §25100-25249, Hazardous Waste Control (administered by the CalEPA and the California Department of Toxic Substances Control);
- Division 20, Chapter 6.95, §255500, et seq. Hazardous Materials Management Plan and Community Right-to-Know and Hazardous Materials Release Response Plans and Inventory (Business Plan Program, administered by local fire departments and the Certified Unified Program Agencies [CUPA]);
- Proposition 65 Compliance, H&SC §25249.5 et seq., administer by the CARB and the local APCD;
- H&SC §§25340-25392, Carpenter-Presley-Tanner Hazardous Substance Account Act (administered by the CalEPA and the California Department of Toxic Substances Control); and
- H&SC §§25531-255413, California Accidental Release Prevention Program, administered by local fire departments and the CUPA.

California Water Code

- Division 7, Water Quality (Porter-Cologne Water Quality Control Act), administered by the State Water Resources Control Board.

California Code of Regulations

- Title 8, §1529, Asbestos Construction Standard administered by the Department of Industrial Relations and CalOSHA);
- Title 8, §1532.1, Lead Construction Standard administered by the Department of Industrial Relations and CalOSHA);
- Title 8, §5189 and §5192, Accidental Release Plan administered by local fire departments and the Certified Unified Program Agencies (CUPA);
- Title 14, Division 2, Department of Conservation, administered by DOGGR;
- Title 19, §2729, Employee Training Program, administered by the California Office of Emergency Services and local fire departments and departments of public health;
- Title 22, Division 4, Chapter 30, Hazardous Wastes (administered by the CalEPA and the California Department of Toxic Substances Control);
- Title 22, Division 4.5, §§66260-67786, Hazardous Waste Requirements (administered by the CalEPA and the California Department of Toxic Substances Control); and
- Title 22, §66265.50-.56, Contingency/Emergency Response Plan administered by local fire departments and the Certified Unified Program Agencies (CUPA).

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ConocoPhillips has programs in place to comply with each of these standards 3

Gas and Liquid Pipelines and Oil Facilities

Overview of California Pipeline Safety Regulations

State of California regulations Part 51010 through 51018 of the Government Code provide specific safety requirements that are more stringent than the Federal rules. These include:

- Periodic hydrostatic testing of pipelines, with specific accuracy requirements on leak rate determination;
- Hydrostatic testing by state-certified independent pipeline testing firms;
- Pipeline leak detection; and
- Reporting of all leaks required.

Recent amendments require pipelines to include means of leak prevention and cathodic protection, with acceptability to be determined by the California State Fire Marshall (CSFM). All new pipelines must also be designed to accommodate passage of instrumented inspection devices (smart pigs) through the pipeline.

ConocoPhillips has programs in place to comply with each of these standards 4

Department of Conservation, Division of Oil, Gas and Geothermal Resources

The DOGGR was formed in 1915 to regulate oil and gas activities with uniform laws and regulations. The Division supervises the drilling, operation, maintenance, and plugging and abandonment of onshore and offshore oil, gas, and geothermal wells, preventing damage to: (1)

life, health, property, and natural resources; (2) underground and surface waters suitable for irrigation or domestic use; and (3) oil, gas, and geothermal reservoirs.

Division responsibilities are detailed in Section 3000 of the California Public Resources Code and Title 14, Chapter 4 of the California Code of Regulations. These regulations address issues such as well spacing, blowout prevention devices (BOPD), casing requirements, plugging and abandonment of wells, maintenance of facilities and safety systems, inspection frequency and reporting requirements.

In addition, DOGGR publishes a number of instruction manuals related to testing of oil and gas wells (M06), blowout prevention requirements (M07) and drilling wells in an H2S environment (M10).

Section 3106 of the Public Resources Code (PRC) mandates the DOGGR to supervise the drilling, operation, maintenance, and abandonment of oil wells to prevent: damage to life, health, property, and natural resources; damage to underground and surface waters suitable for irrigation or domestic use; loss of oil, gas, or reservoir energy; and damage to oil and gas deposits by infiltrating water and other causes.

The project will derive crude oil from existing producing facilities under these regulations. The site is not specifically affected by these regulations. [1]

California Pipeline Safety Act of 1981

The California Pipeline Safety Act gives regulatory jurisdiction for the safety of all intrastate hazardous liquid pipelines and all interstate pipelines used for the transportation of hazardous or highly volatile liquid substances to the CSFM. The law establishes the governing rules for interstate pipelines to be the Federal Hazardous Liquid Pipeline Safety Act and Federal pipeline safety regulations.

Oil Pipeline Environmental Responsibility Act (Assembly Bill 1868)

This Act requires every pipeline corporation qualifying as a public utility and transporting crude oil in a public utility oil pipeline system to be held strictly liable for any damages incurred by "any injured party which arise out of, or are caused by, the discharge or leaking of crude oil or any fraction thereof ...." The law applies only to public utility pipelines for which construction would be completed after January 1, 1996, or that part of an existing utility pipeline that is being relocated after the above date and is more than three miles in length. The major features signed into law in October 1995 include:

- Each pipeline corporation that qualifies as a public utility that transports any crude oil in a public utility oil pipeline system shall be absolutely liable, without regard to fault, for any damages incurred by any injured party that arise out of, or are caused by, the discharge or leaking of crude oil.
- Damages for which a pipeline corporation is liable under this law are: all costs of response, containment, cleanup, removal, and treatment, including monitoring and administration cost; injury or economic losses resulting from destruction of, or injury to, real or personal

property; injury to, destruction of, or loss of natural resources, including but not limited to, the reasonable cost of rehabilitating wildlife habitat, and other resources and the reasonable cost of assessing that injury, destruction, or loss, in any action brought by the State, County, city, or district; loss of taxes, royalties, rents, use, or profit shares caused by the injury, destruction, loss, or impairment of use of real property, personal property, or natural resources; and loss of use and enjoyment of natural resources and other public resources or facilities in any action brought by the State, County, city, or district;

- A pipeline corporation shall immediately clean up all crude oil that leaks or is discharged from a pipeline.
- No pipeline system subject to this law shall be permitted to operate unless the State Fire Marshal certifies that the pipeline corporation demonstrates sufficient financial responsibility to respond to the liability imposed by this section. The minimum financial responsibility required by the State Fire Marshal shall be seven hundred fifty dollars ($750) times the maximum capacity of the pipeline in the number of barrels per day up to a maximum of one hundred million dollars ($100,000,000) per pipeline system, or a maximum of two hundred million dollars ($200,000,000) per multiple pipeline system. For the Pacific Pipeline, the Bill specifically requires $100,000,000 for the financial responsibility (Section l.h.(l)).
- Financial responsibility shall be demonstrated by evidence that is substantially equivalent to that required by regulations issued under Section 8670.37.54 of the Government Code, including insurance, surety bond, letter of credit, guaranty, qualification as a self-insurer, or combination thereof or any other evidence of financial responsibility. The State Fire Marshal shall require that the documentation evidencing financial responsibility be placed on file with that office.
- The State Fire Marshal shall require evidence of financial responsibility to fund post-closure cleanup spots. The evidence of financial responsibility shall be 15 percent of the amount of financial responsibility stated above.

ConocoPhillips has programs in place to comply with each of these standards [1]

California Accident Release Prevention

The California Accident Release Prevention program mirrors the Federal Risk Management program, except that it adds external events and seismic analysis to the requirements and includes facilities with lower inventories of materials. A California Accident Release Prevention or Risk Management Plan, as administered by the Fire Departments and the EPA, if applicable, is a document prepared by the owner or operator of a stationary source containing detailed information including:

- Regulated substances held onsite at the stationary source;
- Offsite consequences of an accidental release of a regulated substance;
- The accident history at the stationary source;
- The emergency response program for the stationary source;
- Coordination with local emergency responders;
- Hazard review or process hazard analysis;
- Operating procedures at the stationary source;

- Training of the stationary source's personnel;
- Maintenance and mechanical integrity of the stationary source's physical plant; and
- Incident investigation.

Hazardous Materials and Hazardous Waste

Hazardous Waste Control Law

The Hazardous Waste Control Law is administered by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). DTSC has adopted extensive regulations governing the generation, transportation, and disposal of hazardous wastes. These regulations impose cradle-to-grave requirements for handling hazardous wastes in a manner that protects human health and the environment. The Hazardous Waste Control Law regulations establish requirements for identifying, packaging, and labeling hazardous wastes. They prescribe management practices for hazardous wastes; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. Hazardous waste is tracked from the point of generation to the point of disposal or treatment using hazardous waste manifests. The manifests list a description of the waste, its intended destination, and regulatory information about the waste.

Hazardous Materials Management Planning

The Office of Emergency Services, in support of local government, coordinates overall state agency response to major disasters. The office is responsible for assuring the State's readiness to respond to and recover from natural, manmade, and war-caused emergencies, and for assisting local governments in their emergency preparedness, response, and recovery efforts. During major emergencies, Office of Emergency Services may call upon all State agencies to help provide support. Due to their expertise, the California National Guard, California Highway Patrol (CHP), Department of Forestry and Fire Protection, Conservation Corps, Department of Social Services, and Caltrans are the agencies most often asked to respond and assist in emergency response activities.

Hazardous Materials Transportation in California

California regulates the transportation of hazardous waste originating or passing through the State in Title 13 of the California Code of Regulations. The CHP and Caltrans have primary responsibility for enforcing Federal and State regulations and responding to hazardous materials transportation emergencies. The CHP enforces materials and hazardous waste labeling and packing regulations that prevent leakage and spills of material in transit and provide detailed information to cleanup crews in the event of an incident. Vehicle and equipment inspection, shipment preparation, container identification, and shipping documentation are all part of the responsibility of the CHP. The CHP conducts regular inspections of licensed transporters to ensure regulatory compliance. Caltrans has emergency chemical spill identification teams at locations throughout the State.

Hazardous waste must be regularly removed from generating sites by licensed hazardous waste transporters. Transported materials must be accompanied by hazardous waste manifests.

Hazardous Material Worker Safety, California Occupational Safety and Health Act

The California Occupational Safety and Health Administration (Cal/OSHA) is responsible for assuring worker safety in the handling and use of chemicals in the workplace. Cal/OSHA assumes primary responsibility for developing and enforcing workplace safety regulations in Title 8 CCR. Cal/OSHA hazardous materials regulations include requirements for safety training, availability of safety equipment, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation.

Cal/OSHA also enforces hazard communication program regulations, which contain training and information requirements, including procedures for identifying and labeling hazardous substances. The hazard communication program also requires that Material Safety Data Sheets be available to employees and that employee information and training programs be documented. ConocoPhillips has programs in place to comply with each of these standards [1]

Asbestos and Lead

Although there is no construction involved in this project, the site is subject to limitations for asbestos and lead. Neither will be impacted by the proposed project. [2]
Asbestos-containing construction materials are defined by Cal/OSHA as any internal building component containing greater than 0.1 percent asbestos. This is more stringent than Federal definitions of asbestos-containing materials, which contain asbestos in concentrations greater than 1 percent. Asbestos containing materials apply to all building components, including exterior materials and roofing. Lead-containing paint is defined as paint containing 0.006 milligrams per kilogram (mg/kg) lead by weight. Lead-based paint is defined as paint containing 0.05 mg/kg lead by weight. Existing asbestos containing materials and lead-based paint surveys cannot identify all materials, especially in or on internal building components. Compliance with 29 CFR 1926.1101, 40 CFR 61 Subpart M (NESHAPS), San Luis Obispo APCD District Rule 701, and similar State laws listed below, requires sampling of suspect or presumed asbestos containing materials before they are disturbed, if it is in a quantity of more than 260 linear feet on pipes, or 160 square feet on other facility components, or 35 cubic feet. Cal/OSHA requires registered asbestos abatement contractors to remove asbestos-containing construction materials in quantities greater than 100 square feet.

The Asbestos Construction Standard, Title 8 CCR Section 1529. The Cal/OSHA asbestos standard for construction activities applies to all asbestos work where asbestos-containing construction materials may be disturbed in quantities provided above.

The Asbestos Construction Standard regulates asbestos exposure in all construction work as defined in Title 8 CCR Section 1502, including, but not limited to, the following:

- Demolition or salvage of structures where asbestos is present;
- Removal or encapsulation of materials containing asbestos;
- Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof, that contain asbestos;

- Installation of products containing asbestos;
- Asbestos spill/emergency cleanup;
- Transportation, disposal, storage, containment of and housekeeping activities involving asbestos or products containing asbestos, on the site or location at which construction activities are performed;
- Excavation which may involve exposure to asbestos as a natural constituent that is not related to asbestos mining and milling activities;
- Routine facility maintenance; and
- Erection of new electric transmission and distribution lines and equipment, and alteration, conversion and improvement of the existing transmission and distribution lines and equipment.

Cal/OSHA Lead Construction Standard, Title 8 CCR Section 1532.1. The Lead Construction Standard applies to all construction work where an employee may be occupationally exposed to lead. The standard applies to any construction activity that may release dust or fumes including, but not limited to, manual scraping, manual sanding, heat gun applications, power tool cleaning, rivet busting, abrasive blasting, welding, cutting, or torch burning of lead based coatings. Unless otherwise determined by approved testing methods, all paints and other surface coatings are assumed to contain lead at prescribed concentrations, depending on the application date of the paint or coating.

All construction work excluded from coverage in the general industry standard for lead by Section 5198(a)(2) is covered by this standard. Construction work is defined as work for construction, alteration, or repair, including painting and decorating. It includes, but is not limited to, the following:

- Demolition or salvage of structures where lead or materials containing lead are present;
- Removal or encapsulation of materials containing lead;
- New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;
- Installation of products containing lead;
- Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed; and
- Maintenance operations associated with the construction activities.

County of San Luis Obispo Regulations

Energy Element and Conservation and Open Space Element

In 1995, the County of San Luis Obispo adopted the Energy Element as part of the County's General Plan, subsequently merged with the Conservation and Open Space Element. The Conservation and Open Space Element contains a goal of protecting public health, safety, and

environment and several policies that promote the stated goal. The applicable policies include:

- Policy 56. Encourage existing and proposed facilities to focus on measures and procedures that prevent oil, gas, and other toxic releases into the environment. This policy is to ensure that facilities: (1) take measures to prevent releases and spills; (2) prepare for responding to a spill or release; and (3) provide for the protection of sensitive resources. A review of a facilities spill response plan, or reports from other agencies, should be completed to monitor compliance.
- Policy 64. Guideline 64.1. To reduce the possibility of injury to the public, facility employees, or the environment, the applicant shall submit an emergency response plan which details response procedures for incidents that may affect human health and safety or the environment. The plan shall be based on the results of the comprehensive risk analysis. In the case of a facility modification, the existing response plan shall be evaluated by the safety review committee and revisions made as recommended.
- Flammable and Combustible Liquid Storage. County Coastal Zone Land Use Ordinance Section 23.06.126 includes requirements for flammable and combustible liquid storage relating to: applicability, permit requirements, limitation on use, limitation on quantity, setbacks, and including California Department of Forestry and Fire Prevention (CAL FIRE) recommendations, as applicable. Without approval through a Development Plan, aboveground storage limits of combustible liquid is 20,000 gallons and 2,000 gallons for flammable liquids.

ConocoPhillips has programs in place to comply with each of these standards [1]

4.2.2.3 Other Applicable Guidelines, National Codes, and Standards

Safety and Corrosion Prevention Requirements — American Society of Mechanical Engineers, National Association of Corrosion Engineers, American National Standards Institute, API

The following design requirements are generally enforced by local building departments, fire departments and public health departments during plan review and permit issuance. The code requirements address a range of issues that would reduce impacts, including equipment design, material selection, and use of safety valves. ConocoPhillips has programs in place to comply with each of these standards [2]

- ASME & ANSI B16.1 Cast Iron Pipe Flanges and Flanged Fittings;
- ASME & ANSI B16.9, Factory-Made Wrought Steel Butt Welding Fittings;
- ASME & ANSI B31.1a, Power Piping;
- ASME & ANSI B31.4a, addenda to ASME B31.4a, Liquid Transportation Systems for Hydrocarbons, Liquid Petroleum Gas, Anhydrous Ammonia, and Alcohols;
- NACE Standard RP0190, Item No. 53071. Standard Recommended Practice External Protective Coatings for Joints, Fittings, and Valves on Metallic Underground or Submerged Pipelines and Piping Systems;

- NACE Standard RP0169, Item No. 53002, Standard Recommended Practice Control of External Corrosion on Underground or Submerged Metallic Piping Systems;
- API 510 Pressure Vessel inspection Code;
- API 570 Piping Inspection Code, applies to in-service metallic piping systems used for the transport of petroleum products;
- API 572 Inspection of Pressure Vessels;
- API 574 Inspection Practices for Pipe System Components;
- API 575 API Guidelines and Methods for Inspection of Existing Atmospheric and Low-pressure Storage Tanks;
- API 576 Inspection of Pressure Relieving Devices;
- API 650 Welded Steel Tanks for Oil Storage;
- API 651 Cathodic Protection of Aboveground Storage Tanks;
- API 653 Tank Inspection, Repair, Alteration, and Reconstruction;
- API 2610, Design, Construction, Operation, Maintenance, and Inspection of Terminal & Tank Facilities; and
- API Spec 12B - Bolted Tanks for Storage of Production Liquids.

Deleted: <#>API 49, Recommended Practice for Drilling and Well Service Operations Involving Hydrogen Sulfide ¶ <#>API 54, Recommended Practice for Occupational Safety for Oil and Gas Well Drilling and Servicing Operations ¶ 1

API 653, atmospheric tank inspection and repair, is particularly applicable to the Proposed Project and addresses the following issues:

- Tank suitability for service;
- Brittle fracture considerations;
- Inspections;
- Materials;
- Design considerations;
- Tank repair and alteration;
- Dismantling and reconstruction;
- Welding;
- Examination and testing;
- Marking and recordkeeping;
- Pertinent issues related to tank inspections in API 653;
- External inspections by an authorized inspector every 5 years;
- Ultrasonic inspections of shell thickness every 5 years (when corrosion rate not known);
- Internal bottom inspection every 10 years, if corrosion rates not known; and
- Appendix C – detailed checklists for in-service and out-of-service inspections.

ConocoPhillips has programs in place to comply with each of these standards 1

Fire and Explosion Prevention and Control, National Fire Protection Agency

The following design requirements are generally enforced by fire departments during plan review and permit issuance. The code requirements address a range of issues that would reduce impacts, including fire fighting system design, and water supply requirements.

- NFPA 30 Flammable and Combustible Liquids Code and Handbook;
- NFPA 11 Foam Extinguishing Systems;
- NFPA 12 A&B Halogenated Extinguishing Agent Systems;
- NFPA 15 Water Spray Fixed Systems;
- NFPA 20 Centrifugal Fire Pumps; and
- NFPA 70 National Electrical Code.

ConocoPhillips complies with these standards and employs a robust fire, emergency response and safety group that works closely with nearby fire department personnel to ensure the program addresses all precautions to maintain a high level of protection. 2

4.2.3 Significance Criteria

As defined in Appendix G (the Environmental Checklist Form) of the California Environmental Quality Act (CEQA), a significant safety effect is one in which the Proposed Project "create[s] a potential health hazard or involve[s] the use, production or disposal of materials which pose a hazard to people, animal or plant populations in the area affected." The San Luis Obispo County Initial Study Checklist defines significant risk if the project will "result in a risk of explosion or release of hazardous substances (e.g. oil, pesticides, chemicals, radiation) or exposure of people to hazardous substances," or "create any other health hazard or potential hazard."

San Luis Obispo County does not have a process to address risk of upset and CEQA thresholds. Therefore, the Santa Barbara County thresholds have been applied. Santa Barbara County established a quantitative, risk-based criteria that has been utilized by various state agencies, including the California Coastal Commission and the California State Lands Commission. Santa Barbara County adopted Public Safety Thresholds in August 1999. The thresholds provide specific zones (i.e., green, amber, and red) on a risk profile curve to guide the determination of significance or insignificance based on the estimated probability and consequence of an accident. In general, risk levels in the green area would be less than significant and therefore acceptable, while risk levels in the amber and red zones would be significant. Risk profiles plot the frequency of an event against the consequence in terms of fatalities or injuries; frequent events with high consequence have the highest risk level.

The criteria used in this section are based on the potential risk associated with the facilities. Therefore, an impact would be considered significant if any of the following were to occur:

- Be within the amber or red regions of the Santa Barbara County Safety Criteria; or

- Non-compliance with any applicable design code, regulation, NFPA standard, or generally acceptable industry practice.

Issues related to fire protection and emergency response are discussed in Section 4.4, Public Services.

A significant impact associated with existing site contamination and hazardous waste would be determined if the project would:

- Result in mobilization of contaminants currently existing in the soil and groundwater, creating potential pathways of exposure to humans or other sensitive receptors that would result in exposure to contaminant levels that would be expected to be harmful; or
- Result in the presence of contaminated soils or groundwater within the project area, and as a result, expose workers and/or the public to contaminated or hazardous materials during construction activities at levels in excess of those permitted by California Occupational Safety and Health Administration (Cal/OSHA) in CCR Title B and the Federal Occupational Safety and Health Administration (OSHGA) in Title 29 CFR Part 1910.

4.2.4 Project Impacts and Mitigation Measures

Impacts from the Proposed Project on public safety are associated with increased throughput processes at the Santa Maria Refinery (SMF).

Impact #	Impact Description	Phase	Residual
PSHM.1	The Proposed Project could introduce risk to the public associated with accidental releases of hazardous materials from the SMF processing operations.	Operations	Class III

Releases of hazardous materials from the Proposed Project Site would not acutely impact nearby residences, agriculture, or industrial facilities since the SMF is far away from these receptors. Releases that could impact air quality, such as odor or health risk, as addressed in Section 4.1, Air Quality.

Some releases at facilities are caused by vandalism, such as opening valves or sabotaging equipment integrity. This could increase the frequency of releases. These impacts can be reduced by securing the facilities to reduce the probability of vandalism. The refinery currently has gated access and 24-hour[1] security measures to reduce vandalism.

However, as discussed, impacts from releases at the refinery would not impact sensitive receptors. Therefore, impacts would be *less than significant* (Class III).

Mitigation Measure

None required.

Residual Impacts

Site security issues could increase the likelihood of vandalism and subsequent failure of equipment resulting in spills or releases of material. Appropriate site security would minimize these incidents. Fatality and injury impacts would be remain *less than significant* (Class III).

Impact #	Impact Description	Phase	Residual
PSHM.2	The Proposed Project could introduce risk to the public associated with the transportation of SMF product along local and area roadways.	Operations	Class III

Accidents that generate spills of hazardous materials that could impact public receptors along roadways produce the risks associated with transportation. These risks are associated with the transportation of solid petroleum coke and recovered solidified sulfur.

Products leave the SMF as solid petroleum coke by rail or haul truck and as recovered sulfur by haul truck.

Petroleum coke is shipped via truck or railcar to customers as fuel or onto ships for export. Major petroleum coke destinations include Mojave, Victorville, Cupertino, Fontana, Lebec, and Gorman, and Long Beach for export.

Sulfur is shipped via truck to customers in the agricultural industry or loaded on ships for export. All products are shipped outside of SLOC. Sulfur truck destinations are in the San Joaquin Valley from Bakersfield to Fresno, as well as Long Beach for export.

Pipeline transportation of crude oil presents a low risk to public health since spills generally do not catch fire and the public has sufficient time to move away from spills in the unlikely event of ignition. Generally, spills of crude oil produce environmental impacts as opposed to public safety impacts.

Risk levels associated with transportation would be minimal due to the properties of crude oil, sulfur, and coke and impacts would primarily affect environmental resources. The nominal increase in flow rates associated with the Proposed Project would produce environmental impacts similar to current operations. Impacts would be *less than significant* (Class III).

Impact #	Impact Description	Phase	Residual
PSHM.3	The Proposed Project could introduce contamination to groundwater through exacerbation of existing contamination issues.	Operations	Class II

The proposed Project could increase the amount of coke produced. The amount of coke stored onsite, however, is limited by permit. Any increased coke production is not expected to affect low levels of groundwater contamination found at specific wells away from working coke piles. and thereby produce a significant impact. Petroleum coke is a non-hazardous material.

Comment [F6]: This analysis is for gas transmission pipelines, not liquids, and is inappropriratee for use in this EIR 2

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Mitigation Measure

PSHM-3 *Prior to issuance of the updated permit and increase in Refinery throughput, the Applicant shall ensure that any additional coke produced shall be deposited delineated limited areas or other equivalent measures to prevent any additional groundwater contamination, as per consultation with the RWQCB.*

Comment [F7]: Please see comment in October 31, 2011 cover letter for all sections highlighted in yellow. 1

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Residual Impacts

With measures to ensure that any additional coke produced would not contribute to the existing low levels of groundwater contamination, impacts would be remain *less than significant with mitigation* (Class II).

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4.2.4.1 Other Issue Area Mitigation Measure Impacts

None of the mitigation measures proposed for other issue areas would change the impacts discussed in this section. Therefore, the mitigation measures would not result in additional significant impacts, and additional analysis or mitigation is not required.

4.2.5 Cumulative Impacts and Mitigation Measures

Cumulative projects that could impact the current analysis include those projects listed in Section 3.0, Cumulative Projects Description. Impacts of cumulative projects are realized either by increasing the frequency or volume of oil spills into the same environment as the Proposed Project, increasing the public safety risks to the same populations as the Proposed Project, or increasing the risks due to an increase in the receptor populations within the Proposed Project impact zones. None of the cumulative projects would affect the same populations or increase the number of populations that could be exposed to the Proposed Project scenarios. Impacts associated with accidental spills from trucks hauling crude oil could be realized if cumulative projects (such as the Excelaron project in the Huasna Valley) haul crude oil along the same routes as the Proposed Project. These impacts would primarily cause environmental impacts in the immediate vicinity of the spill and would therefore not be cumulatively significant. Therefore, there are no cumulative significant impacts.

4.2.6 Mitigation Monitoring Plan

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party

PSHM-3	Prior to issuance of the updated permit and increase in Refinery throughput, the Applicant shall ensure that any additional coke produced shall be deposited specified limited areas or other equivalent measures to prevent any additional groundwater contamination, as per consultation with the RWQCB.	Inspection of coke storage area	During operations	San Luis Obispo County Planning and Building Department, DTSC, RWQCB

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4.3 Noise and Vibration

This section describes the concepts and terminology of noise, defines the existing noise levels at noise-sensitive locations nearest to the Project Site, and describes the regulatory settings associated with the Project. This section also identifies the applicable significance thresholds for noise impacts, assesses potential impacts of the Project and alternatives, recommends measures to mitigate significant adverse impacts, and discusses cumulative projects.

4.3.1 Environmental Setting

Noise is often defined as unwanted sound, which is perceived subjectively by individuals. Noise levels at various locations of an area fluctuate and change character during different periods of the day. Exposure to severe noise levels over prolonged periods can cause physiological changes, including ear damage. The acceptability of more common noise levels and types of noise varies among neighborhoods, individuals, and time of day. The following sections describe the concepts and terminology of noise and vibration and document existing noise levels at noise sensitive locations nearest to the Project Site.

4.3.1.1 Noise Effects

Noise levels are reduced the farther away a receptor is from the source because of several effects, including geometry, atmosphere, ground, and barrier.

Geometric Effects

Geometric effect refers to the spreading of sound energy as a result of the expansion of the wavefronts. Geometric spreading is independent of frequency and has a major effect in almost all sound propagation situations. There are two common kinds of geometric spreading: spherical and cylindrical spreading. In the case of spherical spreading from a point source, which is due to a noise source radiating sound equally in all directions, the sound level is reduced by 6 decibels (dB) for each doubling of distance from the source. A busy highway would be a cylindrical source with equal sound power output per unit length of highway. A cylindrical source will produce cylindrical spreading, resulting in a sound-level reduction of 3 dB per doubling of distance.

Atmospheric Effects

Atmospheric effects are due to air absorption and wind and temperature gradients. Air absorption is primarily due to the "molecular relaxation effect" between air molecules, where air molecules are excited and then relaxed by the passing sound pressure wave. High frequencies are absorbed more than low frequencies. The amount of absorption depends on the temperature and humidity of the atmosphere.

Precipitation (rain, snow, or fog) has an insignificant effect on sound levels although the precipitation will obviously affect the humidity and may also affect wind and temperature gradients. Atmospheric absorption is only an issue at higher frequencies and is a strong function of humidity and temperature. For example, at 68 degrees Fahrenheit (°F) and 70% humidity, air

absorption of sound at frequencies of 16,000 hertz (Hz) occurs at approximately 8 dB per 100 feet. However, at 0% humidity, the rate drops to approximately 1 dB per 100 feet.

Under normal circumstances, atmospheric absorption can be neglected except where long distances or high frequencies are involved (greater than 4,000 Hz). At less than 2,000 Hz, the rate of sound level drop, due to air absorption, is less than 0.25 dB per 100 feet (at 68°F and 70% humidity).

The speed that sound propagates in a gas depends on the temperature of the gas. Higher temperatures produce higher speeds of sound. Since the temperature of the atmosphere is not uniform, there are local variations in the sound speed. For example, under normal conditions the atmosphere is cooler at higher altitudes. This results in sound waves being 'bent' upwards. This will result in the formation of a shadow zone, which is a region in which sound does not penetrate. In reality, some sound will enter this zone due to scattering. Scattering occurs when sound waves are propagating through the atmosphere and meet a region of inhomogeneity (a local variation in sound speed or air density) and some of their energy is re-directed into many other directions. In environmental noise situations, scattering is caused by air turbulence, rough surfaces, and obstacles, such as trees. The scattering of sound by rain, snow, or fog at ordinary frequencies is insignificant.

Under conditions of a temperature inversion (temperature increasing with increasing height), the sound waves will be refracted downwards, and therefore may be heard over larger distances. This frequently occurs in winter and at sundown.

When a wind is blowing there will be a wind gradient because the layer of air next to the ground is stationary. A wind gradient results in sound waves propagating upwind being 'bent' upwards and those propagating downwind being 'bent' downwards. This effect can cause noise levels downwind to be higher than those upwind.

Temperature and wind gradients can result in measured sound levels being very different to those predicted from geometrical spreading and atmospheric absorption considerations alone. These differences may be as great as 20 dB. These effects are particularly important where sound is propagating over distances greater than 500 feet. Temperature inversions and winds can also result in the effectiveness of a barrier being dramatically reduced.

Ground and Barrier Effects

If sound is propagating over ground, attenuation will occur due to acoustic energy losses on reflection. These losses will depend on the surface. Smooth, hard surfaces will produce little absorption, whereas thick grass may result in sound levels being reduced by up to about 10 db per 300 feet at 2000 Hz. High frequencies are generally attenuated more than low frequencies.

Reflection from the ground can result in another mechanism by which sound levels are reduced. When the source and receiver are both close to the ground, the sound wave reflected from the ground may interfere destructively with the direct wave. This effect, called the ground effect, is normally noticed over distances of several yards and more, and in the frequency range of 200 to 600 Hz.

Research on propagation through trees yields conflicting results. Dense shrubbery can produce effective noise attenuation. A band of trees several hundred feet deep is required to achieve significant attenuation.

Significant attenuation can be achieved with solid barriers. A barrier should be at least high enough to obscure the 'line of sight' between the noise source and receiver. A barrier is most effective for high frequencies since low frequencies are diffracted around the edge of a barrier more easily. The maximum performance of a barrier is limited to about 40 dB, due to scattering by the atmosphere. A barrier is most effective when placed either very close to the source or the receiver.

Barriers not built for acoustical purposes are often found in sound propagation situations. The most common of these are hills and buildings. In urban situations, buildings can be effective barriers. It is possible for buildings to produce a different acoustical effect. In a street, multiple reflections from parallel building facades can result in considerable reverberation and consequently reduced attenuation. The propagation of sound is very complex and influenced by a large number of factors. This report only examines the attenuation of sound due to geometry, barriers specifically placed by the Project or mitigation measures, and barriers such as the terrain, as well as air absorption for the linear decibel scale analysis.

Tonal Effects

Noise in which a single frequency stands out is said to contain a 'pure tone.' Sources that produce pure tones are often described as being 'tonal' and tend to be more noticeable – and potentially annoying – to humans than sources that do not contain pure tones. In assessing the subjective impact of tonal noise, it is common practice to take this increased annoyance into account by adding a 5-dBA penalty to the measured noise level. Section 4.3.1.2, Noise Terminology, describes the dBA rating scale.

Effects on Wildlife

Wildlife response to sound is dependent not only on the magnitude but also the characteristic of the sound, or the sound frequency distribution and whether the sound is natural or human made (noise). Wildlife is affected by a broader range of sound frequencies than humans. Therefore, a linear decibel scale (non-A weighted) analysis is preferred for wildlife impact analysis. Noise is known to affect an animal's physiology and behavior, and chronic noise-induced stress can be deleterious to an animal's energy budget, reproductive success, and long-term survival (Radle 2001).

4.3.1.2 Noise Terminology

Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Because the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-

dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

A typical noise environment consists of a base of steady background noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise are the sounds from individual local sources. These sounds can vary from an occasional aircraft flyover to virtually continuous noise from traffic on a nearby roadway. Table 4.3-1 lists representative noise levels for specific activities.

Table 4.3-1 Representative Environmental Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 100 feet	—105—	
	—100—	
Gas Lawnmower at 3 feet	—95—	
	—90—	
	—85—	Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime	—75—	
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area	—65—	Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
	—55—	Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
	—45—	
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime	—35—	
	—30—	Library
Quiet Rural Area during Nighttime	—25—	Bedroom at Night, Concert Hall (background)
	—20—	
	—15—	Broadcast/Recording Studio
	—10—	
	—5—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

Source: FTA 2006

Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise upon people largely depends upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The rating scales of Equivalent Continuous Sound Level (Leq), minimum instantaneous noise level (Lmin), and the maximum instantaneous noise level (Lmax) are measures of ambient noise, while the Day-Night Average Level (Ldn) and Community Noise Equivalent Level (CNEL) are measures of community noise (or noise levels

with penalties for noise in the evening or nighttime). Leq is the average A-weighted sound level measured over a given time interval. Leq can be measured over any time period, but is typically measured for 1-minute, 15-minute, 1-hour, and 24-hour periods. CNEL is another A-weighted average sound level measured over a 24-hour time period. However, this noise scale is adjusted to account for some individuals' increased sensitivity to noise levels during the evening and nighttime hours. Leq, Lmin, and Lmax, as well as Ldn and CNEL are all applicable to this analysis and defined as follows:

- Leq, the equivalent energy noise level in dBA, is the average acoustic energy content of noise for a stated period of time. Thus, the Leq of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- Ldn, the Day-Night Average Level, is a 24-hour average Leq with a 10 dBA 'weighting' or penalty added to noise the hours of 10:00 p.m. 7:00 a.m. to account for noise sensitivity during the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.4 dBA Ldn.
- CNEL, the Community Noise Equivalent Level, is a 24-hour average Leq with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA-24 hour Leq would result in a measurement of 66.7 dBA CNEL.
- Lmin is the minimum instantaneous noise level experienced during a given period of time, in dBA.
- Lmax is the maximum instantaneous noise level experienced during a given period of time, in dBA.

Noise environments and consequences of human activities are usually well represented by average noise levels during the day or night, or over a 24-hour period, as represented by the Ldn or the CNEL. Environmental noise levels are generally considered low when the CNEL is less than 60 dBA, moderate in the 60 to 70 dBA range, and high greater than 70 dBA. Examples of low daytime noise levels are isolated, natural settings that can provide noise levels as low as 20 dBA and quiet, suburban, residential streets that can provide noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher noise levels associated with more noisy urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA).

When evaluating changes in 24-hour community noise levels, a difference of 3 dBA is a barely perceptible increase to most people (Caltrans 1998). A 5-dBA increase is readily noticeable, while a difference of 10 dBA would be perceived as a doubling of loudness. New development within a community could potentially lead to activities that increase the 24-hour community noise levels.

Noise levels from a particular source decline as distance to the receptor increases (see the Geometric Effects section). Other factors, such as the weather, wind, and reflecting or shielding factors, also help intensify or reduce the noise level at any given location. A commonly used rule of thumb for roadway noise (a linear noise source) is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically 'hard' locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically 'soft' locations (i.e., the area between the source and receptor is unpacked earth or has vegetation, including grass).

Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA.

4.3.1.3 Vibration

Vibration is acoustic energy transmitted as pressure waves through a solid medium, such as soil or concrete. Like noise, the rate at which pressure changes occur is the frequency of the vibration, measured in Hz. Vibration may be the form of a single pulse of acoustical energy, a series of pulses, or a continuous oscillating motion.

Ground-Borne Vibration

The way that vibration is transmitted through the ground depends on the soil type, the presence of rock formations or man-made features and the topography between the vibration source and the receptor location. These factors vary considerably from site to site and make accurate predictions of vibration levels at receptors distant from the source extremely difficult (often impossible) in practice.

As a general rule, vibration waves tend to dissipate and reduce in magnitude with distance from the source. Also, the high frequency vibrations are generally attenuated rapidly as they travel through the ground, so that the vibration received at locations distant from the source tends to be dominated by low-frequency vibration. The frequencies of ground-borne vibration most perceptible to humans are in the range from less than 1 Hz up to 100 Hz.

When a ground-borne vibration arrives at a building, there is usually an initial ground-to-foundation coupling loss. However, once the vibration energy is in the building structure it can be amplified by the resonance of the walls and floors. Occupants can perceive vibration as motion of the building elements (particularly floors) and also rattling of lightweight components, such as windows, shutters, or items on shelves. Vibrating building surfaces can also radiate noise, which is typically heard as a low-frequency rumbling known as ground-borne noise. At very high levels, low-frequency vibration can cause damage to buildings.

Soil and subsurface conditions are known to have a strong influence on the levels of ground-borne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Experience with ground-borne vibration is that vibration

propagation is more efficient in stiff clay soils, and shallow rock seems to concentrate the vibration energy close to the surface and can result in ground-borne vibration problems at large distances from the track. Factors such as layering of the soil and depth to water table can have significant effects on the propagation of ground-borne vibration (FTA 2006).

Vibration Measurement

Vibration may be defined in terms of the displacement, velocity, or acceleration of the particles in the medium material. In environmental assessments, where human response is the primary concern, velocity is commonly used as the descriptor of vibration level, expressed in millimeters per second (mm/s). The amplitude of vibration can be expressed in terms of the wave peaks or as an average, called the root mean square (rms). The rms level is generally used to assess the effect of vibration on humans. Vibration levels for typical sources of ground-borne vibration are shown in Table 4.3-2 below.

Vibration can produce several types of wave motion in solids including, compression, shear, and torsion, so the direction in which vibration is measured is significant and should generally be stated as vertical or horizontal. Human perception also depends to some extent on the direction of the vibration energy relative to the axes of the body. In whole-body vibration analysis, the direction parallel to the spine is usually denoted as the z-axis, while the axes perpendicular and parallel to the shoulders are denoted as the x- and y-axes respectively.

Table 4.3-2 Typical Levels of Ground-Borne Vibration

Source	Typical Velocity at 50 feet (inches/second, rms)[a]	Human or Building Response
Blasting from construction projects	0.10	Minor cosmetic damage to fragile buildings
Bulldozers and other heavy tracked construction equipment.	0.06	Workplace annoyance; difficulty with vibration-sensitive tasks.
Commuter rail, upper range	0.02	
Rapid transit rail, upper range	0.010	Distinctly Perceptible Residential annoyance for infrequent events
Commuter rail, typical range	0.008	
Bus or truck over bump	0.004	Barely perceptible. Residential annoyance for frequent events
Rapid transit rail, typical range	0.003	
Bus or truck typical	0.002	Threshold of perception
Background vibration	0.0004	None

a. rms = root mean square
Source: FTA 2006

Large vehicles can also increase ground vibration along streets that they travel. Vibration would be a function of the vehicle speeds and the condition of the pavement. CalTrans indicates that "vehicles traveling on a smooth roadway are rarely, if ever, the source of perceptible ground vibration" and that "vibration from vehicle operations is almost always the result of pavement discontinuities, the solution is to smooth the pavement to eliminate the discontinuities (CalTrans 2004)." Trucks traveling on area roadways could cause vibrations at nearby residences if

(Willow Road). Noise levels from traffic are estimated in the San Luis Obispo County General Plan Noise Element for 2010 traffic levels, which are estimates generated at the time of the Noise Element adoption in 1992 (San Luis Obispo 1992). The Noise Element estimates that CNEL (or Ldn) noise levels along State Route 1 near the Proposed Project site exceed 65 dBA due to roadway noise. Table 4.3-3 shows centerline distances to specific noise levels.

Table 4.3-3 Roadway Noise Levels: Noise Element and Calculated Current

Roadway	Segment	Noise at 100 feet, CNEL	Distance to Noise Contour, feet		
			60 CNEL	65 CNEL	70 CNEL
FHWA Model Calculated Values: Current Traffic Levels (2008)					
State Route 1	At Santa Maria Refinery entrance	65.3	342	108	34
Noise Element Values (2010)					
State Route 1	Santa Barbara County to Valley Road	-	136	63	29
State Route 1	Valley Road to Halcyon Road	-	223	104	48
Railroad	Grade Crossing	-	525	244	113

Notes: Distances are in feet from roadway centerline. Local streets based on San Luis Obispo County Public Works Traffic Counts December 2008. Time of day distribution based on Noise Element Technical Reference Document.

Existing traffic-generated noise levels were also modeled using a version of the Federal Highway Administration Traffic Noise Model and current traffic data provided by the County of San Luis Obispo and CalTrans (FHWA 1998). This analysis was conducted in order to demonstrate the noise levels associated with current traffic levels (the Noise Element addresses estimated traffic levels for 2010). The analysis indicates that properties along State Route 1 near the Refinery are exposed to a traffic-generated CNEL of 65 dBA (at 100 feet from the road centerline) and noise levels of 60 dBA are experienced as far as 136 to 342 feet from the roadway.

Railroad Noise

The railroad is approximately 200 feet to the west of the Proposed Project Site. Noise levels due to railroad activity are estimated in the San Luis Obispo County[1] General Plan Noise Element. These estimates are based on ten freight and four passenger trains per day. Distances to the 60 dB contour value range up to 525 feet from a grade crossing (see Table 4.3-3).

Commercial, Industrial, Residential, and Recreational Noise

The area near the Project Site includes some light industrial/commercial uses, as well as residential and recreational uses that could generate noise. Figure 4.3-1 depicts many of these, which include the following:

- Recreational vehicular uses to the west at the Pismo Dunes State Vehicular Recreation Area;
- County Fire Department activities to the north at Fire Station No. 22;
- Residential activities to the north along Monadella Street;

- Light industrial and commercial uses along State Route 1 (Willow Road);
- Light industrial uses, such as a junk yard, recreational vehicle storage and repair, and auto sales, to the northeast on Alley Oop Way and Gasoline Alley Place;
- Agricultural activities to the east and southwest; and
- Recreational and golf activities to the east at Monarch Dunes Golf Club along State Route 1 (Cabrillo Highway).

All of these locations potentially produce noise on an intermittent basis due to activities.

Agricultural Noise

The San Luis Obispo County General Plan Noise Element discusses noise associated with agricultural operations. Noise levels from agricultural sources that could be in the project vicinity include diesel engines (74 to 85 dBA) and tractors (72 to 75 dBA at 150 feet).

Pump Station Noise

Comment [F1]: Seems like this paragraph includes measurements and description of typical noise. Would be more effective if divide into these sections, with other measurements. 1

The pump stations associated with the Proposed Project contribute to the noise levels in the areas near the pump stations. Generally, the pump stations that operate with electric-drive pumps do not produce noise levels that are an issue at any areas near the pump stations. The Cuesta Pump Station uses electric-drive pumps. (see Section 2.0, Project Description). The pumps at Shandon are engine-driven, but they are remotely located. Summit Pump Station does not have any pumps.

The pumps at the Santa Margarita Pump Station (SMPS)[2] are engine-driven and produce noise in the surrounding area during the day and at night. Nighttime noise measurements taken at the Santa Margarita Pump Station fenceline, during periods of zero traffic along El Camino Real, indicate a noise level of 70.6 dBA at 50 feet equivalent and measured[3] 59.7 dBA at the SMPS[4] fenceline.

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This noise creates 40.9 dBA at the closest residential property line. Although this level would be audible, it would not contribute significantly to the existing noise levels. The baseline noise level in the residential area at night is 41.7 dBA. Both noise levels, measured at the receptors fence-line, are below the County Noise Element standard of 50-dBA allowable daytime noise.[6] The pumps increase noise levels by 2.6 dBA, which would be audible but would still be within allowable levels, and are[7] not be considered a significant noise impact.

Comment [S2]: Is Not clear when the increase of 2.6 dBA occurs…?night, over course of day or???.but value is still within the 50 dBA Ordinance….so??? 8

4.3.1.6 Noise Measurements

Deleted: However, the 59.7-dBA noise level at the fenceline exceeds the County Noise Element 50-dBA standard of allowable daytime noise. ¶ 9

Noise measurements were obtained as part of this EIR analysis on June 21, 2011, in the vicinity of the Project Site, along transportation routes, and at selected pump stations. The measurements were taken at six locations during the day, evening, and nighttime to allow for a calculation of CNEL and at the pump stations to obtain a nighttime minimum level. The SMPS noise information is addressed adequately in the section above….it is confusing to add the sentence on

Deleted: Noise was also measured at the fenceline in front of the Santa Margarita Pump Station to determine the noise contribution of the pumps to nearby residential areas 10

SMPS once again in this section, might be better to put SMPS last paragraph in this section since it is included in the referenced table. That would make more sense for this section on"Noise measurements").[1]

The results of these measurements and their locations are shown in Table 4.3-4 and Figure 4.3-1.

Comment [S3]: The County Noise Element should bes measured at the receptors fence-line....and NOT at the fenceline next to SMPS separated from the residences by a RR right of way and El Camino Real.[2]

Comment [F4]: Recommend modifying Table as it is unclear which of these measurements are near Site (1-3) and which are at other locations.[4]

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Table 4.3-4 Existing Ambient Noise Levels for the Project[3]

No.	Location	Daytime Leq (dBA)	Evening Leq (dBA)	Nighttime Leq (dBA)	CNEL (dBA)	Noise Sources
Near Refinery						
1	Oso Flaco Lake Parking lot	43.6	40.1	48.9	54.9	Visitors, wind, surf, automobiles, birds, frogs (at night) tractors
2	Willow Road and Guadalupe Road	65.8	65	60.9	68.9	Traffic noise on Willow and Highway 1
3	Winterhaven Way	59.2	51.5	42.0	57.3	Traffic noise on Highway 1, dogs, fire station alarms, occasional alarms from the Refinery
4	Monadella[8] Street	49.3	45	43.6	51.5	Traffic noise from Highway 1, birds, wind in trees
Near Summit Pump Station[9]						
6	In front of Summit Pump Station	48.7	-	-	-	Traffic from Highway 101 and Los Berros Road. No pumps audible.
Near Santa Margarita Pump Station[10]						
5	Linden Ave and El Camino Real	56.0		41.7		Traffic on El Camino Real, Traffic on Highway 101, crickets, frogs (at night), pump station engines

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Note: Location 5 daytime Leq is taken near the corner of Linden Ave and El Camino Real. Source: In-field measurements taken June 21, 2011 by MRS with a Quest 1900 noise meter.

The noise baseline in the area near the refinery[12] is generally dominated by traffic noise, which produces a CNEL close to 69 dBA for areas close to roadways (along State Route 1). Residential areas close to the SMF experience noise levels ranging from approximately 52 to 69 dBA CNEL. The SMF contributed very little to area noise levels.

Background noise measurements were also taken at night in residential areas near the Santa Margarita Pump Station to determine the noise contribution of the pumping engines. Noise monitoring was also performed at the fenceline of the Santa Margarita Pump Station to determine the noise levels at the edge of the property.

4.3.2 Regulatory Setting

4.3.2.1 State Regulations

California Health and Safety Code, Division 28, Noise Control Act

The California Noise Control Act states that excessive noise is a serious hazard to public health and welfare and that it is the policy of the State to provide an environment for all Californians that is free from noise that jeopardizes their health or welfare.

California Government Code Section 65302

Section 65302(f) of the California Government Code and the Guidelines for the Preparation and Content of the Noise Element of the General Plan, prepared by the California Department of Health Services and included in the 1990 State of California General Plan Guidelines published by the State Office of Planning and Research, provide requirements and guidance to local agencies in the preparation of their Noise Elements. The Guidelines require that major noise sources and areas containing noise-sensitive land uses be identified and quantified by preparing generalized noise exposure contours for current and projected conditions. Contours may be prepared in terms of either the CNEL or the Ldn, which are descriptors of total noise exposure at a given location for an annual average day. The CNEL and Ldn are generally considered to be equivalent descriptors of the community noise environment within plus or minus 1.0 dB.

4.3.2.2 County Local Ordinances and Policies

The applicable noise standards governing the project area are the criteria in the County's Noise Element of the General Plan, which covers noise exposure from major sources in the County including roadways, railways, airports, and stationary sources, and the criteria in the County's Municipal Code, covering stationary noise sources such as loading docks, parking lots, and ventilation equipment.

The San Luis Obispo County Noise Element of the General Plan provides a policy framework for addressing potential noise impacts in the planning process. The Noise Element is directed at minimizing future noise conflicts, whereas a noise ordinance focuses on resolving existing noise conflicts. The Noise Element includes maps showing the extent of noise exposure from the major noise sources in the County (roadways, railways, airports, and stationary sources), along with the goals, policies, and implementation program adopted by the County to reduce future noise impacts. The goals of the Noise Element, compiled under the mandate of Section 65302(f) of the California Government Code and guidelines prepared by the California Department of Health Services, are to ensure that all areas of the County are free from excessive noise and that appropriate maximum levels are adopted for residential, commercial, and industrial areas; to reduce new noise sources to the maximum extent possible; to reduce, to the maximum extent possible, the impact of noise within the county; and to ensure that land uses are compatible with the related noise characteristics of those uses.

Among the most significant policies of the Noise Element are numerical noise standards that

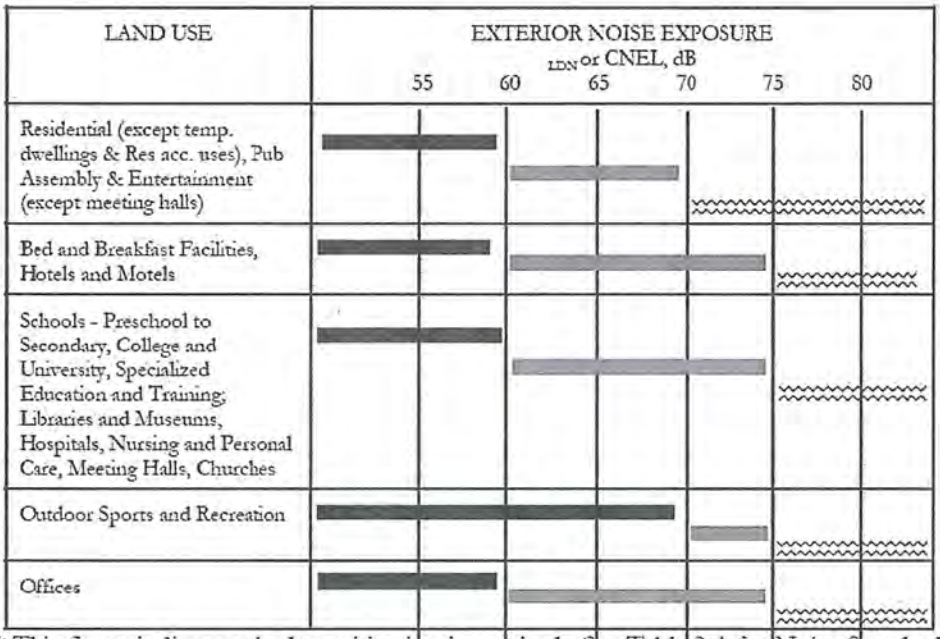
limit noise exposure within noise-sensitive land uses and performance standards for new commercial and industrial uses that might adversely impact noise-sensitive land uses. When the potential for adverse noise impacts is identified, mitigation is required to carry out the specific recommendations of an expert in acoustics or, under some circumstances, by implementing standard noise mitigation packages. When mitigation is required, highest priority is given to avoiding or reducing noise impacts through site planning and project design, and lowest priority given to structural mitigation measures such as construction of sound walls and acoustical treatment of buildings.

The County has identified these noise-sensitive uses:

- Residential development, except temporary dwellings;
- Schools preschool to secondary; colleges and universities; specialized education and training;
- Health care services (hospitals);
- Nursing and personal care;
- Churches;
- Public assembly and entertainment;
- Libraries and museums;
- Hotels and motels;
- Bed and breakfast facilities;
- Outdoor sports and recreation; and
- Offices.

The Noise Element specifies the ranges of noise exposure from transportation noise sources which are considered to be acceptable, conditionally acceptable, or unacceptable for the development of different land uses. Figure 4.3-2 shows whether mitigation is needed for development of land uses near major transportation noise sources. In areas where the noise environment is acceptable, new development may be permitted without requiring noise mitigation. For areas where the noise environment is conditionally acceptable, new development would be allowed only after noise mitigation has been incorporated into the design of the project to reduce noise exposure. For areas where the noise environment is unacceptable, new development is usually not feasible.

Figure 4.3-2 Land Use Compatibility for New Development near Transportation Noise Sources



* This figure indicates whether mitigation is required. See Table 3-1 for Noise Standard.

INTERPRETATION

ACCEPTABLE
(no mitigation required)

Specified land use is satisfactory.

CONDITIONALLY ACCEPTABLE
(mitigation required)

Use should be permitted only after careful study and inclusion of mitigation measures as needed to satisfy policies of the Noise Element.

UNACCEPTABLE
(mitigation may not be feasible)

Source: SLOC 1992

For residential land uses, the Noise Element recommends an exterior noise standard of 60 dBA CNEL and an interior noise standard of 45 dBA CNEL. Table 4.3-5 lists the County's maximum exterior noise levels for stationary noise sources. Table 4.3-6 lists the County's maximum

allowable noise exposure for noise from transportation noise sources.

Table 4.3-5 Noise Element Maximum Allowable Noise Exposure - Stationary Sources

Level	Daytime (7:00 a.m.– 10:00 p.m.)	Nighttime (10:00 p.m.– 7:00 a.m.)
Hourly Leq	50	45
Maximum Level, Lmax	70	65
Maximum Level – Impulsive Noise, Lmax	65	60

Notes: As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of the noise barrier or other property line noise mitigation measures. Nighttime applies only where the receiving land use operates or is occupied during nighttime hours.
Source: SLOC 1992

Table 4.3-6 Noise Element Maximum Allowable Noise Exposure - Transportation Sources

Land Use	Outdoor Areas	Interior Spaces	
	Ldn/CNEL, dB	Ldn/CNEL, dB	Leq dB
Residential (except temporary dwellings and residential accessory uses)	60	45	-
Bed and Breakfast Facilities, Hotels, and Motels	60	45	-
Hospitals, Nursing and Personal Care	60	45	-
Public Assembly and Entertainment (except Meeting Halls)	-	-	35
Offices	60	-	45
Churches, Meeting Halls	--	--	45
Schools – Preschool to Secondary, College and University, Specialized Education and Training, Libraries and Museums	-	-	45
Outdoor Sports and Recreation	70	--	--

Source: SLOC 1992

Chapter 6, Section 40 of Title 23 (23.06.040) of the County Municipal Code establishes standards for acceptable exterior and interior noise levels and describes how noise shall be measured. These standards are intended to protect persons from excessive noise levels, which are detrimental to the public health, welfare, and safety. Excessive noise levels are also contrary to the public interest because they can interfere with sleep, communication, relaxation, and full enjoyment of one's property; contribute to hearing impairment and a wide range of adverse physiological stress conditions; and adversely affect the value of real property. The interior and exterior noise standards established in the County's Land Use Ordinance are consistent with the

noise exposure standards in the County's General Plan Noise Element.

The County Code limits the hours of construction adjacent to residential or sensitive land uses between 7:00 a.m. and 9:00 p.m., Monday through Friday, and between 8:00 a.m. and 5:00 p.m. and Saturdays and Sundays.

4.3.3 Significance Criteria

Noise impacts are associated with operational activities. Operations noise impacts are also associated with traffic, both Project-generated that impacts existing receptors and existing traffic that could impact the proposed development, and stationary activities. Impacts are measured against the County Noise Element to determine significance.

4.3.3.1 Operations Traffic

Long-term off-site impacts from traffic noise are measured against multiple criteria. Both of these criteria must be met for a significant impact to be identified:

- Traffic noise levels would increase by more than 3 dB compared to existing conditions on a roadway segment adjacent to a noise-sensitive land use; and
- The resulting traffic noise level would exceed the County criteria level for the noise-sensitive land use. In this case, the criteria level is 60 dBA CNEL for residential, hotel, hospital, and office uses and 70 dBA CNEL for outdoor sports and recreation uses land uses (as per the County Code).

A noise level increase of 3 dBA or more is perceptible to the human ear and is often used as a threshold for a substantial increase.

Impacts associated with existing traffic that could impact the Proposed Project would be considered significant if:

- Existing traffic noise levels along the traffic routes would exceed the County Land Use Compatibility guidelines.

4.3.3.2 Operations Stationary Sources

The Proposed Project would be considered generating a significant impact if:

- The development would generate noise levels above those specified by the County Noise Element/Municipal Code.

Operational activity noise for this project will not increase. [1]

4.3.4 Project Impacts and Mitigation Measures

Noise and vibration impacts would be generated both from Refinery operations and associated with increased traffic on area roadways. Impacts were determined by utilizing the Federal Highway Administration (FHWA) traffic noise model.

Impact #	Impact Description	Residual Impact
N.1	Operation increases at the Refinery could increase noise levels in the area.	Class II

Various operations and alarms at the Refinery generate noise in the community. The level of noise impacts on the community would not increase due to an increase in crude oil throughput at the Refinery. Alarm frequency would remain the same. Although equipment use, such as the crude heaters, would increase, noise levels would not increase at receptors near the Refinery.

The pump stations along the pipeline routes from the Santa Maria Pump Station to the Refinery and from the Refinery north to the Bay Area would not be affected by this project. The Summit Pump Station, located midway between the Santa Maria Pump Station and the Refinery, is in close proximity to residences. However, there are no pumps at Summit Pump Station. An increase in throughput at this location would not generate additional noise levels at nearby residences.

The Santa Margarita Pump Station, located along the pipeline from the Refinery to the Bay Area, is also located in a rural area in close proximity to residences. Natural gas engines operate the pumps and make substantially more noise than electricity driven pumps. Noise monitoring at the Santa Margarita Pump Station indicated that noise levels during the nighttime would be audible to nearby residences, but would not produce a significant impact. However, noise levels from the Santa Margarita Pump Station measured at fenceline of the receptors meet County Noise Element limit of 50 dBA. The project will not increase operations of these pumps, as they currently operate within design limits. Therefore, this should be considered no significant impact.

Residual Impacts

The noise reduction methods recommended in the mitigation measures are established industry practices that reduce noise levels in urban or rural situations. Noise levels at the property line would need to be reduced approximately 10 dBA, which is feasible with appropriately designed barriers and pads. With the implementation of sound walls and pads around the pumping engines at the Santa Margarita Pump Station, impacts would be reduced to *less than significant with mitigation* (Class II).

Impact #	Impact Description	Residual Impact
N.2	Traffic increases on area roadways near the Refinery could increase noise levels in the area.	Class III

Refinery operations generate traffic associated with coke and sulfur transportation out of the Refinery. Other traffic, such as traffic related to employees or deliveries, would not change with

Comment [F5]: Please refer to October 31, 2011 cover letter for comments on sections highlighted in yellow. 1

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Deleted: the pumps at this location are electrically driven and produce minimal noise 7

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Comment [S6]: Pumps operate full on,10% increased throughput will not change pump operation 13

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Comment [S7]: noise levels are within the standards of the county Noise Element. No increase in Noise is anticipated. Pumps run at design and no increase will be expected. 18

Deleted: Mitigation Measures ¶

¶

N-1 . The Applicant shall install, at the Santa Margarita Pump Station, a sound wall constructed of barrier pads between the noise sources and residences, as close to the *pumping operations as feasible, to reduce noise levels at the property line to less than 50 dBA. Additional barrier walls shall be installed as deemed necessary by in-field measurements. Installation of the sound wall shall be verified by County Planning and Building prior to the issuance of the updated permit/authorization to proceed.* ¶ 19

the Proposed Project. This increase in traffic levels could generate an increase in noise levels at nearby residences.

Noise was modeled using the FHWA Highway Noise Prediction Model, using 2008 traffic levels from the San Luis Obispo County Public Works Department and additional truck traffic added according to Section 2.0, Project Description. The Proposed Project would add less than four trucks per day[1] to area traffic. Noise levels generated by this traffic scenario are estimated to increase by less than 0.1 dBA CNEL for a receptor 100 feet from the center of State Route 1. This would be a less than significant impact.

4.3.5 Other Issue Area Mitigation Measure Impacts

No mitigation measures are anticipated to produce additional noise impacts. Therefore, the mitigation measures would not result in additional significant impacts, and additional analysis or mitigation is not required. Additionally, the Santa Margarita Pump Station sound wall recommended in mitigation measure N-1 would not have a significant visual impact on surrounding properties and, therefore, would not require additional analysis or mitigation.

4.3.6 Cumulative Impacts

No other developments are currently proposed in the vicinity of the Proposed Project. All of the cumulative projects identified in Section 3.0, Cumulative Projects Description, are outside of the project area and would not impact the same area as the Proposed Project. As such, the there are no cumulative impacts associated with noise, other than the impacts identified for the Proposed Project.

4.3.7 Mitigation Summary/Monitoring Plan

Comment [F8]: Please refer to October 31, 2011 cover letter for comments on sections highlighted in yellow. 2

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
N-1	The Applicant shall install, at the Santa Margarita Pump Station, a sound wall constructed of barrier pads between the noise sources and residences, as close to the pumping operations as feasible, to reduce noise levels at nearby residences. Additional barrier walls shall be installed as deemed necessary by in-field measurements. Installation of the sound wall shall be verified by County Planning and Building prior to the issuance of the permit/authorization to proceed.	Review of soundwall installation	Prior to issuance of permit	San Luis Obispo County Planning and Building Department

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4	Moradella Street	49.3	45	43.6	51.5	Traffic noise from Highway 1, birds, wind in trees

4.4 Public Services

This section details the environmental and regulatory setting of the ConocoPhillips Santa Maria Facility Project (Proposed Project) relevant to public services and utilities. It also identifies significance thresholds and impacts to public services and utilities related to the Proposed Project, as well as proposed mitigations for the significant impacts. The public services and utilities relevant to the Proposed Project include:

- Water supply;
- Sanitary wastewater;
- Solid waste (non-hazardous);
- Energy; and
- Fire protection services.

While preparing the Notice of Preparation, it was determined that the Proposed Project would not cause significant impacts to police protection, libraries, or schools; therefore, this section does not address those public services.

4.4.1 Environmental Setting

This section discusses the environmental setting for the applicable utilities and public services.

4.4.1.1 Water Supply Utility

The Proposed Project Site is within the Santa Maria Valley Management Area served by the Santa Maria Valley Groundwater Basin, which is part of Water Planning Area 7 in the South Coast sub-region of the county. The Santa Maria Valley Groundwater Basin spans approximately 184,000 acres (288 square miles), of which, approximately 61,220 acres (95.7 square miles) is within San Luis Obispo County (Wallace Group 2010a).

As discussed in Section 2.0, Project Description, the Santa Maria Facility (SMF) obtains all of its water from onsite wells. In accordance with the 2005 Santa Maria Groundwater Litigation Stipulation, the SMF owner is not required to participate in the development of supplemental water. Further, the owner has the right to the reasonable and beneficial use of groundwater on its property without limitation, except in the event the mandatory action trigger point is reached, otherwise known as Severe Water Shortage conditions (SCSC 2005).

Although the amount of water taken from the wells for the Project is not directly metered, usage is estimated at approximately ~~870~~ 681 gallons per minute (gpm) (ConocoPhillips 2008). The 2008 Average Day Demand was 1,100 acre-feet per year (AF/Y) or 0.98 million gallons per day (MGD) with a build-out capacity of 1,400 AF/Y or 1.25 MGD (Wallace Group 2010b).

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Water at the SMF is mainly used for cooling, boiler feed for steam production, and process use, such as coke drum cutting. The SMF currently uses less water than historical levels due to the following infrastructure changes:

- Installation of a reverse osmosis water treatment unit, which requires less water than the water softener unit it replaced; and
- Shutdown of the Carbon Plant that used water for cooling coke from the calcining process and green coke screening.

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[2]

4.4.1.2 Sanitary Wastewater

As discussed in Section 2.0, Project Description, all water drainage, including storm run-off, is contained onsite. The SMF discharges water to the Pacific Ocean pursuant to waste discharge requirements in Regional Water Quality Control Board Order Number R3-2007-0002, adopted September 7, 2007. The Order serves as the permit under the National Pollutant Discharge Elimination System. The following information is based on this permit and accompanying documents (CRWQCB 2007).

In general, all process wastewater and contaminated storm water from the facility flow to a treatment system consisting of oil and water separators, dissolved air flotation, trickling filter, extended aeration, and secondary clarification. The treated wastewater is discharged to the Pacific Ocean through an outfall terminating 1,700 feet offshore and 27 feet deep. To date, the discharge has neither caused a violation of water quality standards nor a degradation of the marine environment based on past monitoring results.

Under the permit, the SMF can discharge up to 0.57 MGD of treated wastewater from the facility to the Pacific Ocean in dry weather conditions. The treatment system receives 279 gpm (0.40 MGD) of actual dry-weather process water. Flows of typical dry weather discharge from the treatment system to the outfall sump are 266 gpm (0.38 MGD) and flows of typical wet weather discharge from the treatment system to the outfall are approximately 406 gpm (0.58 MGD). Oil is recovered from the wastewater and contact stormwater during treatment.

The facility maintains two separate collection systems—one for process water and contact stormwater and the other for non-contact stormwater. Contact stormwater is precipitation runoff from the oil storage tank dikes and the operating units that potentially contain oil. Process water and contact stormwater are collected in the process water system and then flow by gravity to the water treatment system.

Comment [S2]: There is no "Remediated Water" [3]

Deleted: Remediated groundwater is also treated in the water treatment system [4]

Process water is water that comes from the Refinery processes and is collected in various vessels throughout the Refinery. Process water is then put through a process water stripper to remove volatile organics, hydrogen sulfide, and ammonia. After the process water stripper, the water is combined with other oily water, which is then processed through the oily water treatment system. The oily water treatment system includes three oil and water separators, two surge tanks, dissolved air floatation, a trickling filter, an Orbal aeration system, and a secondary clarifier. The system uses equipment to first separate the oil from the water, which includes American Petroleum Institute (API) oil water separators and a dissolved air flotation unit. Next, a biological treatment unit removes any remaining hydrocarbons and ammonia. The discharge

from this treatment system goes into the Pacific Ocean, which is permitted under the National Pollutant Discharge Elimination System permit that sets water quality standards.

As part of the permit, effluent is monitored for compliance with limitations and to determine the amount, if any, that the discharger is contributing to receiving water exceedances above water quality objectives.

Precipitation runoff from streets and unimproved areas not at risk for oil spills is collected in a non-contact stormwater sewer system and flows by gravity to an evaporation pond. This non-contact stormwater is not discharged to the receiving water. Sludge generated during the treatment processes is recycled at the adjacent Carbon Plant coking facility. Figure 2.2-4, in Section 2.0, Project Description, is a flow schematic of the water treatment facility.

4.4.1.3 Solid Waste Disposal

The Proposed Project's expansion includes a 10 percent increase in crude oil throughput and does not include any facility expansion or related construction. Therefore, the Proposed Project is not expected to significantly increase non-hazardous solid waste. Nonetheless, this section analyzes the existing conditions and project impacts for the landfills operated in the County of San Luis Obispo.

Comment [e3]: The proposed project will not increase non-hazardous waste. 1

San Luis Obispo County Integrated Waste Management Authority

The Proposed Project Site is within the San Luis Obispo Integrated Waste Management Authority (IWMA) jurisdiction. The County of San Luis Obispo consists of seven incorporated cities and numerous unincorporated areas within its 3,304 square miles and has a population of 273,231 people (2010 estimate) (CDF 2010). Each jurisdiction of the County is responsible for its own solid waste management. Solid waste generated in San Luis Obispo County is mostly residential waste, construction wastes, commercial and industrial wastes, and sludge residues (wastes remaining at the end of the sewage treatment process). In most cases, solid waste is hauled directly to major Class III landfills, and the remainder is taken to transfer stations, resource recovery centers, and composting facilities.

According to the Department of Resources Recycling and Recovery (CalRecycle) (formerly the California Integrated Waste Management Board or CIWMB), in 2007 the residents and businesses of San Luis Obispo County disposed of approximately 263,872 tons of solid waste in permitted landfill facilities with a calculated disposal rate (pounds/person/day) of 5.4 percent, which meets the target rate of 7.4 percent. In 2008, the residents and businesses of San Luis Obispo County disposed of approximately 236,892 tons of solid waste with a calculated disposal rate (pounds/person/day) of 4.8 percent, which meets the target rate of 7.4 percent (CalRecycle 2010a).

According to 2004 CalRecycle data, the San Luis Obispo County IWMA utilizes several disposal facilities in multiple jurisdictions including the following counties: Los Angeles, Kern, San Luis Obispo, Kings, Stanislaus, Solana, and Santa Barbara. Of these counties, approximately 99 percent of all solid waste generated by San Luis Obispo County is disposed in San Luis Obispo County landfills (CalRecycle 2004a).

In addition, the CalRecycle 2004 data show that three distinct counties (San Luis Obispo, Santa Barbara, and Monterey) dispose solid waste in San Luis Obispo County Landfills. Of the three counties, San Luis Obispo County is responsible for approximately 93 percent of all solid waste disposed in San Luis Obispo County (CalRecycle 2004b). Table 4.4-1 shows that solid waste is disposed of at three Class III landfills within the County of San Luis Obispo: Cold Canyon, Chicago Grade, and City of Paso Robles. Figure 4.4-1 shows the location of these three landfills.

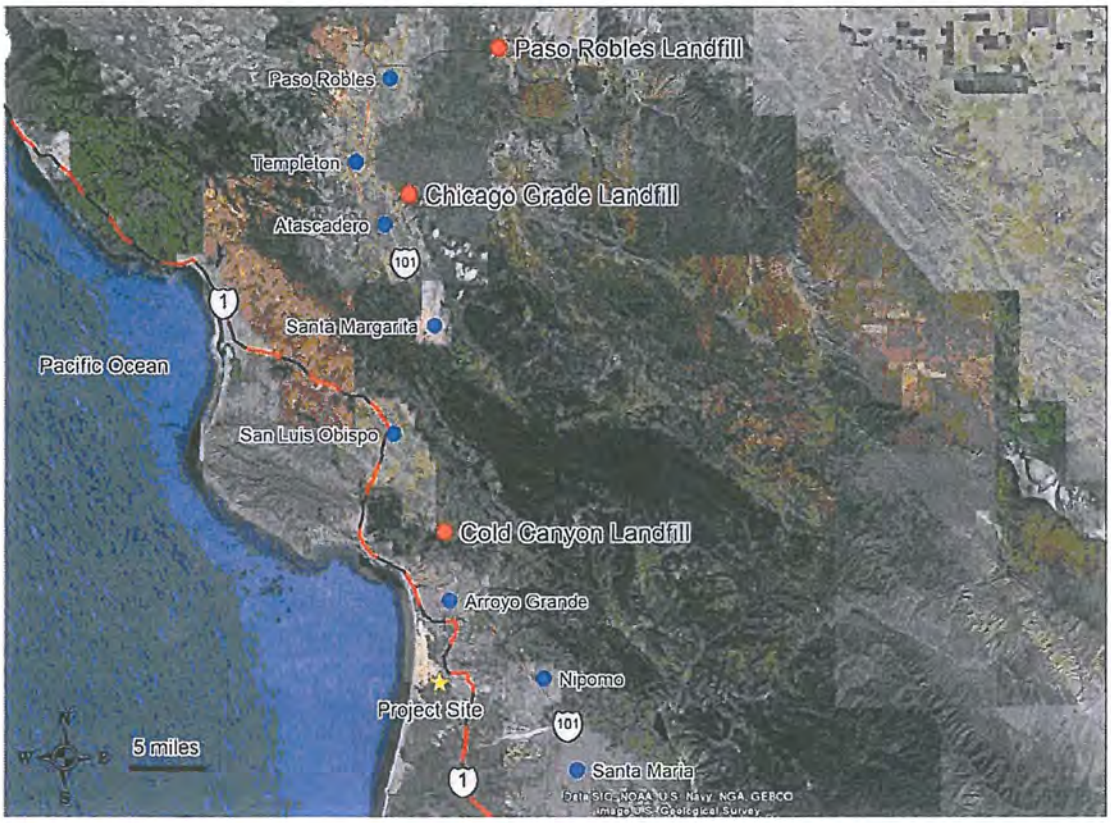
In 2009, a total of approximately 227,634 tons per day were disposed of at these landfills (CalRecycle 2010b). According to CalRecycle's Solid Waste Information System database, approximately 15.5 million cubic yards remained among landfills in the County (CalRecycle 2010c). During the project operations phase, the Cold Canyon Landfill will probably be the primary landfill serving the Project Site. The San Luis Garbage Company is the franchised garbage and recycling provider for San Luis Obispo.

Table 4.4-1 San Luis Obispo County Class III Landfill Capacity and Usage

Landfill	Permitted Daily Capacity (tons)[a]	2009 Total Solid Waste Disposal (tons)[b]	2009 Average Daily Disposal (tons)[c]	Maximum Permitted Capacity (cubic yards)[a]	Estimated Remaining Permitted Capacity (cubic yards)[ad]
Cold Canyon	1,200	136,589	386	10,900,000	1,830,000
Chicago Grade	500	56,757	160	8,950,220	8,329,699
City of Paso Robles	450	34,288	114	6,495,000	5,327,500
Total	**2,150**	**227,634**	**660**	**26,345,220**	**15,487,199**

a. Source: CalRecycle 2010c
b. Source: CalRecycle 2010b
c. The average daily disposal for each landfill was found by dividing the 2007 total solid waste disposal by the approximate number of days the landfill opened per year. Excluding holidays, both Cold Canyon and Chicago Grade Landfill landfills are open every day of the year. City of Pas Robles is closed every Sunday and on Holidays. Federal law (5 U.S.C. 6103) establishes 10 legal public holidays a year.
d. The remaining capacity for each landfill was estimated on the following date: Cold Canyon Landfill on June 2, 2010; Chicago Grade Landfill on May 1, 2007; and City of Paso Robles Landfill on May 1, 2007.

Figure 4.4-1 Area Landfills



Cold Canyon Landfill

The Cold Canyon Landfill is approximately 11 miles north of the Project Site on State Route 227. The landfill operates 7 days per week. The Cold Canyon Landfill is a Class III landfill and currently operates on Solid Waste Permit Facility # 40-AA-0004 (issued January 29, 2002). The facility accepts or permits: agricultural waste, construction and demolition waste, dead animals, industrial waste, mixed municipal waste, tires, contaminated soil, green materials, inert waste, and sludge (BioSolids).

As of June 2010, the landfill had a remaining capacity of approximately 1.8 million cubic yards. Under the existing permit, the anticipated closure date for the landfill is January 1, 2012. However, a proposal to expand the landfill is currently undergoing the County of San Luis Obispo environmental review process. Under the proposal, the landfill would expand the disposal-area footprint by approximately 46 acres, increase the total facility allowable tonnage limit by 880 tons per day, and extend the landfill operation date until the year 2040 (SLOC 2009). At this time, this proposal is still under County review.

Chicago Grade Landfill

The Chicago Grade Landfill, open 7 days per week, is a 76.4-acre permitted landfill on a 188acre parcel at 2290 Homestead Road in Templeton, California. The Chicago Grade Landfill is also a Class III facility and was recently expanded in fall 2007. As shown in Table 4.4-1, the current permitted daily maximum capacity is 500 tons. In 2009, total waste disposal in the landfill was approximately 56,757 tons. The Chicago Grade Landfill accepts or permits: agricultural waste, construction and demolition waste, contaminated soil, food wastes, industrial waste, metals, tires, asbestos, dead animals, green materials, inert waste, mixed municipal waste, and sludge (BioSolids). The landfill is scheduled to close in 2042.

Paso Robles Landfill

The City of Paso Robles owns and operates Paso Robles Landfill, 8.5 miles east of Paso Robles off of State Route 46. As indicated in Table 4.4-1, the Paso Robles Landfill's permitted daily maximum capacity is 450 tons, which was recently expanded from 250 tons in Solid Waste Facility Permit #40-AA-0001 (issued January 23, 2008). In 2009, total waste disposal in the landfill was 34,288 tons; the San Luis Obispo County IWMA was the primary jurisdiction sending materials. The landfill is scheduled to close in 2051.

4.4.1.4 Energy

Appendix F of CEQA requires an EIR to include discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3)). According to Appendix F of the State CEQA Guidelines, the goal of conserving energy implies the wise and efficient use of energy including: (1) decreasing overall per capita energy consumption; (2) decreasing reliance on natural gas and oil; and (3) increasing reliance on renewable energy sources.

In 2008, Californians consumed 285,574 gigawatt hours of electricity. As the population in California grows over the next few years, consumption is anticipated to steadily increase at a rate of 1.2 percent annually for electricity and between 0.40 and 0.73 percent annually for natural gas (CEC 2009).

California's main energy sources are electricity, natural gas, and crude oil. In 2008, approximately 46.5 percent of the state's total electricity came from natural gas, 14.9 percent came from nuclear reactions, 9.6 percent came from large (non-renewable) hydroelectric power, 15.5 percent came from coal, and 13.5 percent came from renewable sources (CEC 2010a).

As shown in Table 4.4-2, the County of San Luis Obispo consumed approximately 1,762 million kilowatt-hours of electricity in 2007 and 1,748 million kilowatt-hours of electricity in 2008. During this same time period, the County of San Luis Obispo consumed approximately 81.4 million therms of natural gas in 2007 and 78.7 million therms in 2008 (CEC 2010b, CEC 2010c).

Table 4.4-2 San Luis Obispo County Electricity and Gas Consumption

Land Use	2007		2008	
	Electricity (millions of kWh)	Gas (millions of Therms)	Electricity (millions of kWh)	Gas (millions of Therms)
Non–Residential	1091	40.6	1,064	38.7
Residential	671	40.8	684	40.0
Total	**1,762**	**81.4**	**1,748**	**78.7**

Sources: CEC 2010b, CEC 2010c

Electricity and Gas Purveyors

Pacific Gas and Electric Company

Pacific Gas and Electric Company (PG&E) currently provides electricity to the Project Site that is not otherwise produced by the power-generating unit at the SMF. PG&E operates a local planning office at 4325 Higuera Street in the City of San Luis Obispo and operates the San Luis Obispo Substation on the corner of Orcutt Road and Johnson Avenue, approximately 19 miles north of the Project Site. PG&E generates electricity from the following sources: (1) PG&E-owned hydropower, gas-fired steam, and nuclear generators; (2) independent generators; and (3) out-of state generators. A network of high-voltage transmission lines carries electricity generated from the power plants to substations. Substations use transformers to decrease the voltage of electricity to connect with the distribution system. Individual services or "drops" connect the distribution system to the industrial, commercial, agricultural, and residential customers. Table 4.4-3 shows kilowatt-hours of electricity consumed in the PG&E planning area from 2001 through 2008. As shown in the table, commercial, industrial, and residential land uses consumed the majority of the kilowatt-hours of electricity in planning area (PG&E 2010).

Under the Proposed Project, electricity purchased from PG&E would decrease by a ratio similar to the increase in crude throughput; that is, resulting into a savings of up to megawatt hours per year (MWhr/yr) (assuming onsite generation would be the same as 2007).

Deleted: increase [1]

Deleted: 26,797 [4]

Comment [e4]: As more crude is processed more fuel gas is produced. This fuel gas is used to generate electricity. Therefore electricity purchased will go down See section 2.2 [5]

Comment [F5]: Should use same time frame as emissions ...2009. [6]

Table 4.4-3 PG&E Planning Area Electricity Consumption

Land Use	2001	2002	2003	2004	2005	2006	2007	2008
Agriculture & Water Pump	6,350	6,439	6,324	6,778	5,402	6,010	7,908	7,908
Commercial Building	33,329	34,220	35,243	35,741	35,819	36,943	39,191	39,474
Commercial Other	4,857	4,944	4,682	4,987	5,113	5,407	5,394	5,910
Industry	18,893	18,143	17,954	18,352	18,619	18,561	19,011	18,678
Mining & Construction	2,397	2,283	2,477	2,642	2,863	2,912	3,521	3,461
Residential	29,657	30,537	31,976	32,708	33,106	34,345	34,324	35,321
Streetlight	509	503	516	532	537	542	457	475
Total Usage	**95,992**	**97,069**	**99,172**	**101,740**	**101,459**	**104,720**	**109,806**	**111,227**

Source: CEC 2010d Note: All usage expressed in millions of kilowatt hours (kWh).

Southern California Gas Company

As discussed in Section 2.0, Project Description, the Project Site uses fuel gas produced from the refining operation as a fuel source, primarily to fire heaters and boilers for process heat and steam. When Refinery fuel gas cannot produce the required levels of steam and electricity, surplus gas is purchased from Southern California Gas Company (SCGC). Table 4.4-4 shows the kilowatt-hours consumed by the entire SCGC planning area from 2001 through 2008. The SCGC planning area comprises the entirety of the company's service territory, approximately 20,000 square miles throughout Central and Southern California, including San Luis Obispo, Bakersfield, Ventura, Los Angeles, Palm Springs, and San Clemente (SCGC 2011). Residential, mining, construction, and industrial land uses consumed the majority of the therms in the planning area.

Under the Proposed Project, natural gas purchased from SCGC would decrease by a ratio similar to the increase in crude throughput; that is, resulting in a savings of up to 6 million standard cubic feet (mmscf).

Deleted: increase 1

Comment [e6]: As more crude is processed more fuel gas is produced . At high crude rates there is a surplus of gas and therefore purchased natual gas goes down. See section 2.2 4

Deleted: 247 5

Table 4.4-4 SCGC Planning Area Gas Consumption

Land Use	2001	2002	2003	2004	2005	2006	2007	2008
Agriculture & Water Pump	86	114	102	101	85	87	86	83
Commercial Building	960	1,136	939	968	965	938	948	886
Commercial Other	74	99	77	66	71	88	107	134
Industry	1,636	2,044	1,529	1,569	1,578	1,458	1,527	1,565
Mining & Construction	2,556	2,195	2,608	2,636	2,427	2,536	2,369	2,405
Residential	2,707	2,673	2,558	2,685	2,536	2,544	2,568	2,533
Total Usage	8,019	8,261	7,813	8,025	7,662	7,651	7,605	7,606

Source: CEC 2010e Note: All usage expressed in millions of therms.

4.4.1.5 Fire Protection Services

The Proposed Project is within a Local Responsibility Area in a High Fire Hazard Zone. This subsection identifies the fire-protection service providers for the Project Area and potential and expected response times from the fire stations, analysis of the adequacy of reliable or adequate fire flow, water pressure, and other fire department resources during a major fire, and an analysis of emergency access routes. The Proposed Project Site is currently under the jurisdiction of the California Department of Forestry and Fire Protection/San Luis Obispo County Fire Department (CAL FIRE), which would continue to serve the site.

The site works closely with CAL Fire, and cross training is frequently provided to ensure appropriate fire response is available at all times. There will be no change in protection with this

project. [1]

California Department of Forestry and Fire Protection / San Luis Obispo County Fire Department

The Proposed Project Site currently receives fire protection and paramedic service from CAL FIRE. CAL FIRE, a California state agency, functions as the San Luis Obispo County Fire Department under a contract with the County. The 573-person CAL FIRE staff for San Luis Obispo County includes 228 full-time firefighters, 275 paid call firefighters, 20 reserve firefighters, 25 lifeguards, and 25 administrative staff (CAL FIRE 2010a).

Fire Station #22 (Mesa Fire Station) at 2391 Willow Road in Arroyo Grande, less than 0.5 miles away, is the jurisdictional station ("first in") for the Project Site. Station 22 staffs up to 29 firefighter personnel, including one Fire Captain, one Fire Apparatus Engineer, two licensed paramedics, and 25 paid call firefighters dispatched via radio pager (CAL FIRE 2010b).

The next closest station to the Proposed Project is Fire Station #20 (Nipomo Fire Station) at 450 Pioneer Avenue in Nipomo, which is approximately 8 miles away and has an 8-minute response time. Station 20 staffs up to 29 firefighter personnel, including one Fire Captain, one Fire Apparatus Engineer, two licensed paramedics, and 25 paid call firefighters dispatched via radio pager (CAL FIRE 2010c).

Figure 4.4-2, San Luis Obispo County Fire Stations, shows the proximity of the fire stations to the Proposed Project Site.

The Department operates under a regional approach to providing fire protection and emergency medical services, and emergency response units are dispatched as needed to an incident anywhere in the district's service territory based on distance and availability, without regard to jurisdictional or municipal boundaries. According to CAL FIRE, fire protection appears to be adequate for the existing area (Taylor 2010).

Mutual Aid Agreements

In California, virtually all fire departments are signatories to the California Master Mutual Aid Agreement. This agreement secures assistance across jurisdictional boundaries, when requested, in response to a disaster or an emergency that exceeds local resources. CAL FIRE/San Luis Obispo County is a member to this agreement and acts as the County Coordination Dispatch Center, which, in the event of an emergency, requests assistance from mutual aid companies. As part of this agreement, the counties of Santa Barbara and Ventura are responsible for providing the initial response to fires in the State Responsibility Areas within San Luis Obispo County. CAL FIRE/San Luis Obispo County response teams will assist should the initial attack prove unsuccessful (CAL FIRE 2010d).

In addition to the statewide agreement, cooperative agreements between CAL FIRE, San Luis Obispo County, Los Osos and Avila Community Service Districts, and the City of Pismo Beach provide for a regionalized approach ensuring cost effective, all risk, professional fire protection (CAL FIRE 2010a).

Figure 4.4-2 San Luis Obispo County Fire Stations

Comment [F7]: Map needs north arrow and scale. 1

Fire Safety Compliance Measures

The San Luis Obispo County Code sets forth state and local fire prevention statutes and regulations to ensure that new developments meet standards for fire-flow, public and private fire hydrants, and roadway access provisions for fire-fighting units. Fire flow, the quantity of water available or necessary for fire protection in a given area, depends on the performance capacity of water lines to supply water during emergencies. Fire flow attributes include line pressure, rate of flow (i.e., gallons per minute), and duration over which prescribed volumes of water can be delivered at designated pressures. The quantity of water necessary for fire protection varies by land use type, life hazard, occupancy, and the degree or level of fire hazard. (SLOC 2010a).

Hazardous Materials

The San Luis Obispo Hazardous Materials Team (HAZMAT Team) is a 30-member, multi-agency team from CAL FIRE, San Luis Obispo City, Arroyo Grande Fire, Paso Robles City, Atascadero Fire, San Luis Obispo County Environmental Health Services Division, and the

California Men's Colony. The HAZMAT Team ensures adherence to the laws and regulations of the Occupational Safety and Health Administration, the Environmental Protection Agency, and San Luis Obispo County Environmental Health Services Division in relation to radiological, biological, and chemical hazards and weapons of mass destruction. As such, each team member is versed in both the technical and regulatory aspects of hazardous materials response (CAL FIRE 2010e).

4.4.2 Regulatory Setting

4.4.2.1 Federal

No federal public service or utility regulations are applicable to the Proposed Project.

4.4.2.2 State

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. CPUC is responsible for ensuring that California utility customers have safe, reliable utility service at reasonable rates; protecting utility customers from fraud; and promoting the health of California's economy. CPUC establishes service standards and safety rules and authorizes utility rate changes, as well as enforcing CEQA compliance for utility construction (CPUC 2010).

Water Control Boards

The State Water Resources Control Board approves and implements the California Ocean Plan (Ocean Plan), which requires control of discharge of waste to ocean waters. Section 3(B) of the Ocean Plan identifies effluent limitations that apply to all publicly owned treatment works and to industries that do not have effluent limitation guidelines established by the U.S. Environmental Protection Agency. The State Water Resources Control Board approved amendments to the plan in 2009 (SWRCB 2009).

The California Regional Water Quality Control Board approves and implements the Water Quality Control Plan for the Central Coastal Basin (Basin Plan). The Basin Plan identifies waste discharge requirements for individuals, communities, or businesses whose waste discharges can affect water quality. In 2009, the California Regional Water Quality Control Board approved a priority list of issues for future amendment consideration (CRWQCB 2009).

Regional Water Quality Control Board Order Number R3-2007-0002, adopted September 7, 2007, identifies discharge requirements for the SMF pursuant to the Ocean Plan, the Basin Plan, and federal code requirements.

CalRecycle

In January 2010, the CalRecycle was established in an effort to streamline state recycling and waste diversion efforts. These responsibilities were formerly administered by the California Integrated Waste Management Board. CalRecycle is now comprised of the Waste Management Division and the Recycling Division, which manage programs created through the Integrated Waste Management Act (AB 939) (CalRecycle 2010d).

AB 939 required that each County prepare a new Integrated Waste Management Plan and required each city to prepare a Source Reduction and Recycling Element by July 1, 1991. Each source reduction element was to include a plan for achieving a solid waste goal of 25 percent reductions by January 1, 1995, and 50 percent reductions by January 1, 2000.

Senate Bill (SB) 2202 made a number of changes to the municipal solid waste diversion requirements under the Integrated Waste Management Act. These changes included a revision to the statutory requirement for 50 percent diversion of solid waste to clarify that local government should continue to divert 50 percent of all solid waste after January 1, 2000.

Moreover, in 1997, some of the regulations adopted by the State Water Quality Control Board pertaining to landfills (Title 23, Chapter 15) were incorporated with CalRecycle regulations (Title 14) to create Title 27 of the California Code of Regulations.

Fire Protection

California Code Title 8, Division 1 (Department of Industrial Relations) Chapter 4 (Division of Industrial Safety), Subchapter 14 (Petroleum Safety Orders--Drilling and Production), addresses several issues related to confined space and testing of vapor. Article 6, section 6529 addresses issues related to fire and explosions, such as:

- Firefighting equipment should be inspected, tested, and maintained in serviceable condition. A record should be kept recording when fire extinguishers were last inspected, tested, and recharged.
- A plan shall be established and implemented to ensure the safe and orderly evacuation of employees.

Energy

Appendix F of CEQA requires an EIR to include discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3)). According to Appendix F of the State CEQA Guidelines, the goal of conserving energy implies the wise and efficient use of energy including:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on natural gas and oil; and
- Increasing reliance on renewable energy sources.

4.4.2.3 County

Public Facilities Fees Ordinance, Title 18 of the San Luis Obispo County Code

The County of San Luis Obispo Public Facilities Fees Ordinance, Title 18 of the County Code, allows the County to collect fees for new development projects within the County to mitigate impacts caused by such projects. The County uses the fees to finance the new development's fair share of public facilities (e.g., parks, libraries, and fire and police stations).

County of San Luis Obispo Public Facilities Financing Plan for Unincorporated Area Facilities

The County of San Luis Obispo Public Facilities Financing Plan for Unincorporated Area Facilities documents the number and cost of new capital facilities required to serve development in unincorporated areas through 2025. One potential source of funding is public facilities fees paid by new developments to fund their fair share of necessary facilities. The Public Facilities Financing Plan identifies the maximum justified level of those fees. The fees finance public capital facilities (including land purchases, construction of buildings, and the purchase of major equipment) and ensure that new development projects contribute their fair share for these facilities. The fees cannot fund employee salaries.

County Fire Standards

San Luis Obispo County, and other jurisdictions in the county, adopted both the California Fire Code and the California Building Code, with amendments, into local ordinance. These local ordinances include but are not necessarily limited to:

- Water requirements;
- Minimum access road requirements;
- Construction requirements;
- Hazard abatement; and
- Turnaround requirements.

San Luis Obispo County General Plan

The San Luis Obispo County General Plan contains two elements that outline the county's goals and policies with respect to public services.

Safety Element

The Safety Element of the General Plan contains the following goals and policies relevant to public services in relation to the Proposed Project:

- Goal S-1: Attain a high level of emergency preparedness.
  - Policy S-1 Response: Support the response programs that provide emergency and other services to the public when a disaster occurs. The focus of response activities is saving live and preventing injury, and reducing immediate property damage.

- Policy S-2 Emergency Preparedness: Continue to improve preparedness programs that educate and organize people to respond appropriately to disasters. They include education and awareness programs for individuals, families, institutions, businesses, government agencies and other organizations.
- Policy S-3 Coordination: Improve coordination among City, County and State programs, and among others working to reduce the risks of disasters. This should also include improved coordination with the news media. This will result in more effective preparedness, response and recovery from disasters.
- Policy S-4 Information Systems and Research: Expand and keep current the database of safety related information. Knowledge about disasters and the area we live in is growing. New information must be made available to the public and decision makers. Regularly update the GIS data as new information becomes available.
- Policy S-5 Risk Assessment: Continue investigations that reduce or eliminate long term risks. Risk assessment activities, effectively carried out, can improve the efficiency and reduce the cost of response and recovery from disasters.

- Goal S-4: Reduce the threat to life, structures and the environment caused by fire.
  - Policy S-14 Facilities, Equipment and Personnel: Ensure that adequate facilities, equipment and personnel are available to meet the demands of fire fighting in San Luis Obispo County based on the level of service set forth in the fie agency's master plan.
  - Policy S-15 Readiness and Response: The CDF/County Fire Department will maintain and improve its ability to respond and suppress fires throughout the County.
  - Policy S-16 Loss Prevention: Improve structures and other values at risk to reduce the impact of fire. Regulations should be developed to improve the defensible area surrounding habitation.
- Goal S-6: Reduce the potential for harm to individuals and damage to the environment from aircraft hazards, radiation hazards, hazardous materials, electromagnetic fields, radon, and hazardous trees.
  - Policy S-26 Hazardous Materials: Reduce the potential for exposure to humans and the environment by hazardous substances.

Energy Element

The Energy chapter of the General Plan's Conservation and Open Space Element contains the following goals and policies relevant to public services in relation to the Proposed Project:

- Goal E 3: Energy efficiency and conservation will be promoted in both new and existing development.
  - Policy E 3.1 Use of renewable energy: Ensure that new and existing development incorporates renewable energy sources such as solar, passive building, wind and thermal energy. Reduce reliance on non-sustainable energy sources to the extent possible using available technology and sustainable design techniques, materials, and resources.
  - Policy E 3.2 Energy efficient equipment: Require the use of energy-efficient equipment

in all new development, including but not limited to Energy Star appliances, high-energy efficiency equipment, heat recovery equipment, and building energy management systems.

- Policy E 3.3 Use of renewable energy for water and wastewater: Promote the use of renewable energy systems to pump and treat water and wastewater.

- Goal E 5: Recycling, waste diversion, and reuse programs will achieve as close to zero waste as possible.
  - Policy E 5.1 Source reduction and waste diversion: Encourage source reduction and diversion of solid waste generated to as near zero waste as possible, in order to reduce energy consumption.

San Luis Obispo County Municipal Code

Title 8, Chapter 8.12, Solid Waste Management, regulates wastes handled within the county. This document complies with the California Integrated Waste Management Act of 1989.

Title 8, Chapter 8.66, Discharge of Contaminants into Ocean Waters of the County, and Chapter 8.68, Stormwater Pollution Prevention and Discharge Control, regulate methods to protect the environment from discharge-related contamination.

San Luis Obispo County Integrated Waste Management Authority

Ordinance No. 2008-3 establishes requirements for recycling materials generated from residential facilities, commercial facilities, and special events. These requirements should increase diversion of recyclable materials from landfill disposal, reduce greenhouse gas emissions by recycling more materials, and avoid the potential financial and other consequences of failing to meet and maintain AB 939 requirements (SLOC 2008).

4.4.2.4 Other Codes and Standards

Several codes and standards apply to fire protection and emergency response for facilities such as the one in which the Proposed Project is located.

National Fire Protection Association

The NFPA, established in 1896, publishes numerous codes and standards that cover issues ranging from foam systems to dry cleaning facilities. Several NFPA codes and standards apply to the Proposed Project.

NFPA Standard 11 addresses foam application to protect outdoor atmospheric storage tanks containing flammable and combustible liquids. Fire-fighting foam is an aggregate of air-filled bubbles formed from aqueous solutions and is lower in density than flammable liquids. It is used principally to form a cohesive floating blanket on flammable and combustible liquids and prevents or extinguishes fire by excluding air and cooling the fuel. It also prevents re-ignition by suppressing formation of flammable vapors. Foam is prepared by utilizing a water supply along

with a foam concentrate.

Foam for tank fires can be applied through fixed foam discharge outlets permanently fixed to the tank top, by portable hose streams using foam nozzles, or by large-capacity monitor nozzles close to the tank. Foam can be applied to a liquid spill into a dike to suffocate a fire or prevent ignition of the flammable material spill, utilizing either fixed systems, portable systems, or monitors. Foam systems should be inspected annually, including foam performance tests.

For fires on the roof of the tank, NFPA 11 requires a foam supply with a minimum discharge rate of 0.16 gallons per minute per square feet (gpm/ft^2) (for hand-held and foam monitors) and a minimum discharge time of 65 minutes for crude petroleum (section 5). The minimum foam application rate and discharge time for discharge outlets fixed to the tank are 0.10 gpm/ft^2 and 30 minutes, respectively. For diked areas, foam rates shall be 0.16 gpm/ft^2 for 30 minutes.

NFPA 11 also requires that fixed foam systems have automatic fire detection (thermal and hydrocarbon detection) and alarms.

NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, addresses water spray systems and issues such as installation requirements; design requirements, including hydraulic calculations; water supplies; and maintenance.

NFPA 22 addresses the installation of private firewater tanks to supply firewater to a facility.

NFPA 24 and 25 address the installation of private fire service equipment, including service mains and fire hydrants, as well as inspection, testing, and maintenance.

NFPA 30 addresses issues related to flammable and combustible liquids. NFPA 30 addresses fire prevention and risk control, electrical systems, storage in containers, processing facility issues, aboveground storage tanks requirements, and piping systems. NFPA 30 also addresses separation distances from vessels and tanks to property lines and to buildings and structures.

Uniform Fire Code

The UFC addresses issues ranging from egress and emergency escapes to fumigation, hot work, and cryogenic fluids.

Article 9 addresses site access and water supply for buildings, including access road minimum width requirements of 20 feet and all-weather driving capabilities.

Article 79 addresses flammable and combustible liquids issues, including:

- Overfill prevention;
- Automatic shut-off;
- Tank venting;
- Required use of foam systems on crude tanks with on-site storage of foam;

- Diked areas equal to or greater than the largest tank; and
- Well drilling and operations separation distance from storage tanks (25 feet), sources of ignition (25 feet), streets and railways (75 feet), buildings (100 feet), places of assembly and schools (300 feet).

4.4.3 Significance Criteria

The following criteria are based on Appendix G of the California Environmental Quality Act Guidelines. The effects of the Proposed Project on public services, utilities, and service systems would be considered significant if the Proposed Project would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times, or other performance objectives for fire protection, police protection, and public schools;
- Be served by a landfill with insufficient permitted capacity to accommodate the Proposed Project's solid waste disposal needs;
- Fail to comply with federal, state, and local statutes and regulations related to solid waste;
- Violate any waste discharge requirements;
- 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;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Use a substantial amount of fuel or energy that would:
  - Consume energy beyond PG&E or SCGC capacity to supply or produce;
  - Conflict with adopted energy conservation plans; or
  - Result in the construction or operations of a project that would use non-renewable resources in a wasteful and inefficient manner.
- The Project Site does not contain adequate fire water or fire foam supplies to meet the recommended CCPS, NFPA Standards, and the IRI guidelines or the CAL FIRE requirements;
- The Project equipment layout and access structure do not meet the API, NFPA, UFC, and IRI or CAL FIRE recommendations for equipment spacing and clearances;
- The Project facilities do not have sufficient capabilities in early fire detection according to the NFPA requirements;
- The Project Site is more than 10 miles (15-minute response time) from an emergency response location with fire-fighting capabilities (i.e., a fire station or facility with fire-fighting and emergency response capabilities) or accessibility to the site is difficult or limited causing issues in terms of access, evacuations, and response; or

- The Project Site does not have an emergency response plan.

4.4.4 Project Impacts and Mitigation Measures

This section characterizes the impacts generated by the Proposed Project related to Appendix G that include: water supply, sanitary wastewater, solid waste (non-hazardous), energy, and fire protection.

Comment [S8]: This will tie this section to the previous paragraph. 1

4.4.4.1 Water Supply

Comment [S9]: Please refer to October 31, 2011 cover letter for comments on sections highlighted in yellow.re:Water Quantity. 3

The Proposed Project is estimated to increase water use at the SMF by approximately one percent. However, even with this increase, demand will remain less than historical peak pumping rates. The SMF obtains all of its water from on-site wells and has the right to the reasonable and beneficial use of groundwater on its property without limitation, except in the event of Severe Water Shortage conditions (Wallace Group 2010b, SCSC 2005). Detailed analysis of water impacts is provided in Section 4.6, Water Resources.

4.4.4.2 Sanitary Wastewater

Impact #	Impact Description	Project Phase	Residual Impact
PS.1	Increased throughput and operations at the Santa Maria Facility would produce increased wastewater.	Operation	Class III

The Proposed Project would not generate large flows of increased wastewater,

Deleted: or sewage 4

All water drainage, including storm run-off, is contained onsite. The SMF discharges water to the Pacific Ocean pursuant to waste discharge requirements in Regional Water Quality Control Board Order Number R3-2007-0002, adopted September 7, 2007. The Order serves as the permit under the National Pollutant Discharge Elimination System.

All process wastewater and contaminated storm water from the facility flow to a treatment system consisting of oil/water separators, dissolved air flotation, trickling filter, extended aeration, and secondary clarification. The treated wastewater is discharged to the Pacific Ocean through an outfall terminating 1,700 feet offshore and 27 feet deep.

Under the National Pollutant Discharge Elimination System permit, the SMF can discharge up to 0.57 MGD of treated wastewater from the facility to the Pacific Ocean in dry weather conditions. The treatment system receives 279 gpm (0.40 MGD) of actual dry-weather process water. Flows of typical dry weather discharge from the treatment system to the outfall sump are 266 gpm (0.38 MGD) and flows of typical wet weather discharge from the treatment system to the outfall are approximately 406 gpm (0.58 MGD). Oil is recovered from the wastewater and contact stormwater during treatment.

Therefore, the Proposed Project's impact on public sewer demands due to increased quantities of

wastewater would be *less than significant* (Class III).

Comment [e10]: The SMR doe not utilize a public sewer, and therefore this sentence should be removed from the Final EIR. 1

Mitigation Measures

No mitigation measures beyond the existing National Pollutant Discharge Elimination System permit requirements are required since the impact would be *less than significant* (Class III).

Residual Impacts

The residual impacts associated with increased quantities of wastewater would be considered *less than significant* (Class III).

4.4.4.3 Solid Waste (non-hazardous)

Impact #	Impact Description	Phase	Residual Impact
PS.2	Santa Maria throughput increase operations would not 2 generate increased non-hazardous 3 solid wastes.	Operations	Class III

The Proposed Project relates to increased crude oil throughput by 10 percent and does not include any facility expansion or related construction. As such, the Proposed Project is not expected to result in significant non-hazardous solid waste increases.

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There would be no significant increase in 5 quantities of solid, non-hazardous 6 wastes associated with the throughput increase. The Project would not need new or physically altered waste handling facilities, and would comply with applicable regulations.

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During operations, trash and rubbish would continue to 9 be collected in waste bins and disposed of by a local waste hauler. The Cold Canyon Landfill would probably be the primary landfill serving the Proposed Project if the County approves the proposed landfill capacity increase. If not, both the Chicago Grade and City of Paso Robles landfills have sufficient capacity.

Therefore, based on the remaining capacity of the available landfills, potential impacts would be *less than significant* (Class III). No measures beyond compliance with existing ordinance standards are necessary.

Mitigation Measures

No mitigation measures are required since the impacts would be *less than significant (Class III).*

Residual Impacts

The residual impacts associated with solid waste generation would be considered *less than significant* (Class III).

4.4.4.4 Energy

Appendix F of CEQA requires an EIR to include discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3)). According to Appendix F of the State CEQA Guidelines, the goal of conserving energy implies the wise and efficient use of energy including: (1) decreasing overall per capita energy consumption; (2) decreasing reliance on natural gas and oil; and (3) increasing reliance on renewable energy sources.

The SMF uses fuel gas produced from the refining operation as a fuel source, primarily to fire heaters and boilers for process heat and steam. When Refinery fuel gas cannot produce the necessary levels of steam and electricity, surplus gas is purchased from the Southern California Gas Company. Electrical requirements at the SMF are similarly met by the power generating unit and purchases from Pacific Gas and Electric Company.

Impact #	Impact Description	Project Phase	Residual Impact
PS.3	Impacts from decreased electricity consumption at the Santa Maria Facility due to throughput increase operations.	Operations	Class IV

In 2009, the SMF generated 20,732 MWhr of electricity onsite and purchased 23,273 MWhr of electricity from Pacific Gas and Electric Company. Under the Proposed Project, electricity purchased from Pacific Gas and Electric Company would decrease since the Refinery would generate more produced gas if crude throughput rates were higher (see Section 2.0, Project Description).

The use of electricity would not require upgrades to the current electrical facilities.

Since increased crude oil throughput would decrease the Refinery's use of electricity from the power grid, the Proposed Project would not substantially increase demand and the impacts on electrical energy resources would be *beneficial (Class IV)*.

Mitigation Measures

No mitigation measures are necessary since the impacts on electrical generation would be *beneficial* (Class IV).

Residual Impacts

The impacts of throughput increase operations on electrical generation would be *beneficial* (Class IV).

Impact #	Impact Description	Phase	Residual Impact
PS.4	Natural gas consumption at the Santa Maria Facility would decrease, thereby increasing availability.	Operations	Class IV

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Comment [F11]: Please refer to October 31, 2011 cover letter for comments on sections highlighted in yellow. 3

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Comment [e12]: It would definitely decrease the amount of electricity purchased. 10

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Comment [e13]: As stated this project will decrease the use of electricity fro the power grid. Therefore this should be Class IV (beneficial) Impact 15

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In 2009, the SMF generated 2,185 mmscf of natural gas onsite and purchased 397 mmscf of natural gas from the Southern California Gas Company. The Proposed Project would increase onsite refinery fuel gas production to 3,171 mmscf per year and the amount of natural gas purchased from Southern California Gas Company would decrease. The use of diesel fuel and flaring are not expected to increase with the throughput increase.

Therefore, the proposed throughput increase would decrease natural gas consumption increase availability) and the impacts on energy resources would be *beneficial*.

Mitigation Measures

No mitigation measures are required.

Residual Impacts

The impact of throughput increase operations on increased fossil fuel (diesel and gasoline production) use would be *benegicial* (Class IV).

4.4.4.5 Fire Protection

Impact #	Impact Description	Phase	Residual Impact
PS.5	Throughput increase at the site would not impact fire protection and emergency response.	Operations	Class III

The proposed throughput increase at the SMF would not increase fire risk and fire-fighting requirements. The Applicant proposes to utilize the existing fire protection system at the SMF to provide a level of protection for the Proposed Project. The increased throughput would not produce additional impacts on area fire-fighting capabilities since the resources required to address emergencies at the SMF under the Proposed Project would be the same as under the current operations. There would be no impact from the proposed project.

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Comment [e14]: With more crude refining there will be more diesel and gasoline available. This should be a Class IV (beneficial) impact 11

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Comment [F15]: Please see cover letter and adjust this appropriately. 19

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4.4.5 Other Issue Area Mitigation Measure Impacts

No mitigation measures are anticipated to produce additional impacts on public services. Therefore, the mitigation measures would not result in additional significant impacts, and additional analysis or mitigation is not required.

4.4.6 Cumulative Impacts and Mitigation Measures

The cumulative projects discussed in Section 3.0, Cumulative Projects Description, include construction and use of additional housing units, retail establishments, and a hospital expansion. None of these projects would contribute to unacceptable strains on the water supply, solid waste disposal systems in the area, the electricity supply, or fire fighting response capabilities. Therefore, there would be no cumulative significant impacts.

4.5 Land Use and Policy Consistency Analysis

This section describes existing land uses within and surrounding the Project Site and identifies and assesses the Proposed Project's consistency with applicable County land use plans, policies, and zoning. This analysis is based largely on review of applicable County plans and zoning codes, as well as analysis of conclusions reached for other pertinent issue areas addressed in this Environmental Impact Report.

4.5.1 Environmental Setting

4.5.1.1 Background

The ConocoPhillips Santa Maria Facility (SMF) has been a petroleum oil Refinery since its construction in 1955. The SMF is linked to the San Francisco-area Rodeo Refinery by a 200-mile pipeline through which semi-refined liquid products are transferred for upgrading into finished petroleum products. The SMF also produces solid petroleum coke that leaves the Refinery by rail or haul truck and recovered solidified[1] sulfur that is transported by haul truck.

In recent years, the SMF has made significant upgrades to include the installation of emission control devices, a reverse osmosis system, a new water softener unit, changing the water effluent to a tankage system, and eliminating the petroleum coke calciner.

The SMF is currently surrounded by industrial, recreational, agricultural, residential, and open space land uses. Except when shut down for maintenance, the SMF operates 24 hours per day, 365 days per year.

4.5.1.2 Existing Land Use

Project Site Land Use

The Proposed Project Site is within unincorporated San Luis Obispo County as shown in Figure 4.5-1 with an industrial land use classification. The SMF processes crude oil into semi-refined liquid products, petroleum coke, elemental sulfur, and fuel gas. The facility includes a truck loading area, an electric power generating plant, cooling towers, an administration building, a waste water treatment plant, an evaporation pond, a coke storage area, and a product storage building (see Figure 2-3).

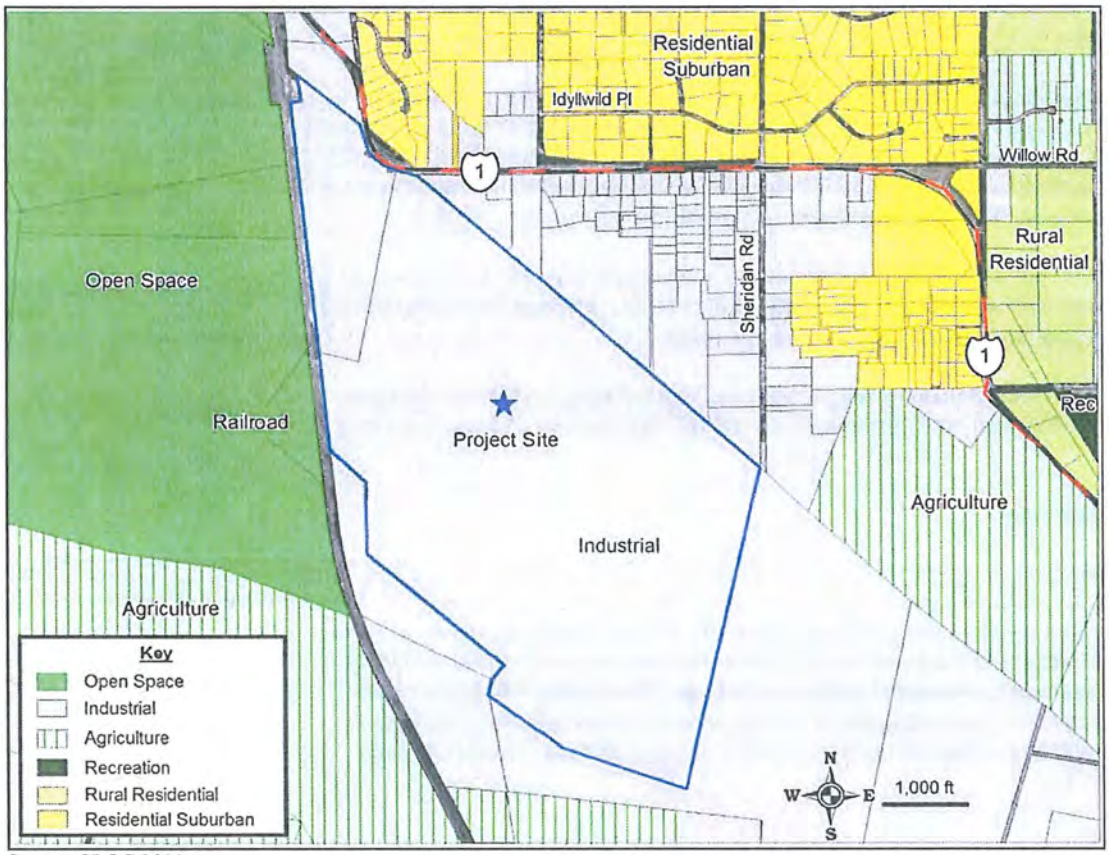
Adjacent Land Uses

As shown in Figure 4.5-1, a variety of land uses surround the Proposed Project Site. Land to the north is industrial and residential land use classifications consisting of mobile home storage and residential homes. Industrial, agriculture, and recreation classifications are to the east consisting of vacant land, farmland, and a golf course with homes. Farmland lies to the south with an agriculture classification. Lastly, immediately west is the Southern Pacific Railroad. Beyond that area is a mix of recreation and open space classifications consisting of the Pismo Dunes State Vehicular Recreation Area and a sensitive resource area.

4.5.1.3 Land Use Plans, Policies, Sections & Standards

Since the Proposed Project Site lies within unincorporated San Luis Obispo County, the San Luis Obispo County General Plan is the applicable land use plan. The following sections summarize County land use designations for the Proposed Project Site and applicable policies and standards. Figure 4.5-1 illustrates planned land uses for the Proposed Project Site and the surrounding area according to the San Luis Obispo County General Plan.

Figure 4.5-1 Land Use Designations of the Project Area



Source: SLOC 2011

4.5.1.4 San Luis Obispo County General Plan

The General Plan identifies the goals and policies of each element that are applicable to the Proposed Project.

Agriculture Element

- Goal AG3: Protect Agricultural Lands
  - Policy AGP17 Agricultural Buffers: Protect land designated Agriculture and other lands in production agriculture by using natural or man-made buffers where adjacent to non-agricultural land uses in accordance with the agricultural buffer policies adopted by the Board of Supervisors.
  - Policy AGP18 Location of Improvements: Locate new buildings, access roads, and structures so as to protect agricultural land.

Land Use Element – Coastal Zone Framework for Planning[1]

General Goals

- Environment - Maintain and protect a living environment that is safe, healthful and pleasant for all residents by:
  - Balancing the capacity for growth allowed by the Land Use Element with the sustained availability of resources.
  - Mitigating adverse impacts from development using the best available methods and technology, to the maximum extent feasible.
- Air Quality - Preserve, protect and improve the air quality of the County by:
  - Seeking to attain and maintain state and federal ambient air quality standards.
  - Mitigating to the extent feasible, potential adverse air quality impacts from new development using the best available technology.
  - Minimizing the generation of air pollutants from projected growth.
  - Implementing land use policies and programs that promote and encourage the use of transportation alternatives to the single-passenger vehicle.
  - Minimizing travel distance and trip generation by the location of land uses.
  - Encouraging the use of alternative energy sources such as solar, wind, and wave technology to reduce the use of non-renewable resources.
- Distribution of Land Uses - Encourage an urban environment that is an orderly arrangement of buildings, improvements, and open space appropriate to the size and scale of development for each community by:
  - Maintaining a clear distinction between urban and rural scale development. Rural uses outside of urban and village areas should be predominately agriculture, low-intensity recreation, low-density residential and open space uses, which will preserve and enhance the pattern of identifiable communities.
  - Identifying important agricultural, natural and other rural areas between cities and

[1] For understanding and ease of administration, the Land Use Element and Land Use Plan portion of the Local Coastal Program have been combined into a single plan for the Coastal Zone portion of the County (General Plan 2009).

communities, and work with landowners to maintain their rural character.

- Encouraging the protection of commercial agricultural land, both prime and non-prime soils, for the production of food, fiber, and other agricultural commodities.

- Residential Land Uses - Preserve and enhance the quality of residential areas by:
  - Protecting residential areas from incompatible and undesirable land uses.
- Commercial and Industrial Land Uses - Designate commercial and/or industrial areas that are compatible with overall land use by:
  - Creating and preserving desirable neighborhood business characteristics, such as compatible uses, safe employment areas, sense of scale, landscaping, pedestrian ways, and other amenities.
- Public Services and Facilities - Provide additional public resources, services and facilities to serve existing communities in sufficient time by:
  - Avoiding the use of public resources, services, and facilities beyond their renewable capacities.
  - Planning for and monitoring new development through the resource management system and growth management strategies, to ensure that resource demands will not exceed existing and planned capacities, or service levels.
  - Locating new public service facilities as close as possible to the users. If facilities are necessary in rural areas, allow for sufficient buffers to protect environmentally sensitive, and agricultural areas.
  - Planning new land uses that avoid overburdening existing resources, services and facilities
- Circulation - Integrate land use and transportation planning by:
  - Coordinating with cities to ensure that traffic and transportation demands can be safely and adequately accommodated.
- Implementation and Administration - Improve the effectiveness of the planning process by:
  - Working toward minimizing administrative delays and costs to fee payers in the administration of the land use element.
  - Simplifying development review procedures and providing incentives for development to locate where plan policies encourage it to occur.
  - Encouraging maximum public participation in the decision making process when new plans are developed and when development is being reviewed.
  - Encouraging comments from other agencies, districts, community advisory councils, special interest groups, property owners, residents, and other individuals.
  - Developing clear policies, programs, and performance standards that encourage the most desirable community living and working environment for the residents of the County.
- Resource Use and Energy Conservation - Support the conservation of energy resources by:
  - Requiring energy conservation through land use/transit balances, and subdivision and

building regulations that require energy conservation methods incorporated into their design.

- Decreasing reliance on environmentally costly energy sources, increasing conservation efforts, and encouraging use of alternative energy sources.
- Recognizing the impacts of land use and water consumption in an area that has a semiarid climate.
- Encouraging land use and transit measures that reduce use of non-renewable resources such as petroleum.

- Economics - Promote a strong, diverse, and viable local economy by:
  - Pursuing planning policies that balance economic, environmental, and social needs of coastal areas.
  - Recognizing the importance of tourism and agriculture as significant parts of the economic base of the coastal areas.
  - Considering the economic effects of land use planning decisions.

Circulation Goals

- Recognizing public transit and car pooling as very important components of the County's strategy to provide adequate circulation and to reduce dependency on the automobile.
- Developing and coordinating transportation programs that reinforce federal, state, regional and local agency goals.

Land Use Goals

- Reconciling discordant land uses by identifying the relationships between uses that minimize land use conflicts.
- Supporting preservation of the County's agricultural industry and the soils essential to agriculture.
- Supporting protection and preservation of County open space and recreational resources while providing for appropriate development.
- Providing areas where agricultural, residential, commercial and industrial uses may be developed in harmonious patterns and with all the necessities for satisfactory living and working environments.
- Protecting coastal resources, public access to the shoreline and visitor-serving areas, as required by the California Coastal Act.
- Establishing density patterns keyed to both the physical and man-made characteristics of land.

Conservation and Open Space Element

Air Quality

- Goal AQ 1: Per capita vehicle-miles-traveled countywide will be substantially reduced

consistent with statewide targets.

- Policy AQ 1.2 Reduce vehicle miles traveled: Require Project subject to discretionary review to minimize additional vehicle travel.
- Policy AQ 1.9 Use of rail: Encourage and facilitate, where appropriate, the use of railways as an alternative to trucking materials out of the County by preserving existing services and rights-of-way and investigating the feasibility of increasing general freight traffic by developing additional loading facilities. Railways should also be encouraged for use by passengers.

- Goal AQ 3: State and federal ambient air quality standards will, at a minimum, be attained and maintained.
  - Policy AQ 3.1 Coordinate with other jurisdictions: Coordinate with neighboring jurisdictions and affected agencies to address cross-jurisdictional and regional transportation and air quality issues.
  - Policy AQ 3.2 Attain air quality standards: Attain or exceed federal or state ambient air quality standards (the more stringent if not the same) for measured criteria pollutants.
  - Policy AQ 3.3 Avoid air pollution increases: Avoid a net increase in criteria air pollutant emissions in planning areas certified as Level of Severity II or III for Air Quality by the County's Resource Management System (RMS).
  - Policy AQ 3.4 Toxic exposure: Minimize public exposure to toxic air contaminants, ozone, particulate matter, sulfur dioxide, carbon monoxide, nitrogen oxides, and lead.
  - Policy AQ 3.5 Equitable decision making: Ensure that land use decisions are equitable and protect all residents from the adverse health effects of air pollution.
  - Policy AQ 3.6 Strategic growth principles: Ensure that implementation of the Strategic Growth principles and goals are balanced with protection of sensitive receptors near high-volume transportation routes and sources of toxic emissions (i.e., railyards, downtown centers, gasoline development facilities, chrome platers, dry cleaners, and refineries).
  - Policy AQ 3.7 Reduce vehicle idling: Encourage the reduction of heavy-vehicle idling throughout the County, particularly near schools, hospitals, senior care facilities, and areas prone to concentrations of people, including residential areas.
  - Policy AQ 3.8 Reduce dust emissions: Reduce PM10 and PM2.5 emissions from unpaved and paved County roads to the maximum extent feasible.
- Goal AQ 4: Greenhouse gas emissions from County operations and communitywide sources will be reduced from baseline levels by a minimum of 15% by 2020.
  - Policy AQ 4.1 Reduce greenhouse gas emissions: Implement and enforce State legislative or regulatory standards, policies, and programs designed to reduce greenhouse gas emissions.
  - Policy AQ 4.2 Identify greenhouse gas emissions: Quantify, reduce, and mitigate greenhouse gas emissions.
  - Policy AQ 4.4 Development projects and land use activities: Reduce greenhouse gas emissions from development projects and other land use activities.

Biological Resources

- Goal BR 1: Native habitat and biodiversity will be protected, restored, and enhanced.
  - Policy BR 1.3 Environmental review: Require environmental review of development applications pursuant to CEQA and County procedures to assess the impact of proposed development on native species and habitat diversity, particularly special-status species, sensitive natural communities, wetlands, and important wildlife nursery areas and movement corridors.
  - Policy BR 1.9 Preserve ecotones: Require that proposed discretionary development protects and enhances ecotones, or natural transitions between habitat types because of their importance to vegetation and wildlife. Ecotones of particular concern include those along the margins of riparian corridors, baylands and marshlands, vernal pools, and woodlands and forests where they transition to grasslands and other habitat types.
  - Policy BR 1.10 Identify and protect ecologically sensitive areas: Protect and enable management of ecologically sensitive areas to the maximum extent feasible.
- Goal BR 4: The natural structure and function of streams and riparian habitat will be protected and restored.
  - Policy BR 4.1 Protect stream resources: Protect streams and riparian vegetation to preserve water quality and flood control functions and associated fish and wildlife habitat.

Energy

- Goal E 1: The County will have an environmentally sustainable supply of energy for all County residents.
  - Policy E 1.4 Methane: Increase the use of methane as an energy source from wastewater treatment plants and active and inactive, closed landfills.
- Goal E 3: Energy efficiency and conservation will be promoted in both new and existing development.
  - Policy E 3.1 Use of renewable energy: Ensure that new and existing development incorporates renewable energy sources, such as solar, passive building, wind and thermal energy. Reduce reliance on non-sustainable energy sources to the extent possible using available technology and sustainable design techniques, materials, and resources.
  - Policy E 3.2 Energy efficient equipment: Require the use of energy-efficient equipment in all new development, including but not limited to Energy Star appliances, high-energy efficiency equipment, heat recovery equipment, and building energy management systems.
  - Policy E 3.3 Use of renewable energy for water and wastewater: Promote the use of renewable energy systems to pump and treat water and wastewater.
- Goal E 5: Recycling, waste diversion, and reuse programs will achieve as close to zero waste as possible.
  - Policy E 5.1 Source reduction and waste diversion: Encourage source reduction and

diversion of solid waste generated to as near zero waste as possible, in order to reduce energy consumption.

- Goal E 7: Design, siting, and operation of non-renewable energy facilities will be environmentally appropriate.
  - Policy E 7.2 Facility upgrades and replacements: Encourage the upgrade or replacement of existing, older facilities to current safety and environmental standards where appropriate, support the decommissioning and redevelopment of existing, older facilities where current safety and environmental standards cannot be met and existing energy production could be replaced with renewable energy sources. Further, develop a cooperative working relationship with the utility and oil and gas industry, including workshops to provide information about the permitting process.

Soil Resources

- Goal SL 1: Soils will be protected from wind and water erosion, particularly that caused by poor soil management practices.
  - Policy SL 1.2 Promote soil conservation practices in all land uses: Require erosion and sediment control practices during development or other soil-disturbing activities on steep slopes and ridgelines. These practices should disperse stormwater so that it infiltrates the soil rather than running off, and protect downslope areas from erosion.

Water Resources

- Goal WR 1: The County will have a reliable and secure regional water supply (IRWM).
  - Policy WR 1.14 Avoid net increase in water use: Avoid a net increase in non-agricultural water use in groundwater basins that are recommended or certified as Level of Severity II or III for water supply. Place limitations on further land divisions in these areas until plans are in place and funded to ensure that the safe yield will not be exceeded.
- Goal WR 3: Excellent water quality will be maintained for the health of people and natural communities.
  - Policy WR 3.1 Prevent water pollution: Take actions to prevent water pollution, consistent with federal and state water policies and standards, including but not limited to the federal Clean Water Act, Safe Drinking Water Act, and National Pollutant Discharge Elimination System (NPDES).
- Goal WR 4: Per capita potable water use in the County will decline by 20 percent by 2020.
  - Policy WR 4.1 Reduce water use: Employ water conservation programs to achieve an overall 20 percent reduction in per capita residential and commercial water use in the unincorporated area by 2020. Continue to improve agricultural water use efficiency consistent with Policy AGP 10 in the Agricultural Element.
  - Policy WR 4.4 Reuse wastewater: The County will work with wastewater system operators to identify and implement programs for reuse of treated wastewater, particularly in landscaping, irrigation, parks, and public facilities.

Economic Element

- Goal 1: Promote a strong and viable local economy by pursuing policies that balance economic, environmental, and social needs of the County.
  - Policy 1a: Pursue economic development activities that will benefit the economy while maintaining the quality of life.
  - Policy 1i: Encourage businesses that promote the concept of sustainability.
- Goal 2: Create a diverse economy
  - Policy 2a: In evaluating proposed plans and projects, consideration of potential economic benefits should be in balance with environmental and social considerations.
- Goal 3: Assure the provision of strategically-located opportunities for economic development.
  - Policy 3a: Encourage a pattern of commercial and/or industrial development that is consistent with the General Plan, convenient to patrons, realistically related to market demand and the needs of the community, and, when compatible, near areas designated for residential use.

Noise Element

- Goal 1: To protect the residents of San Luis Obispo County from the harmful and annoying effects of exposure to excessive noise.
- Goal 2: To protect the economic base of San Luis Obispo County by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses.
- Goal 3: To preserve the tranquility of residential areas by preventing the encroachment of noise-producing uses.
- Goal 5: To avoid or reduce noise impacts through site planning and project design, giving second preference to the use of noise barriers and/or structural modifications to buildings containing noise-sensitive land uses.
- Policy 3.3.1: The noise standards in this chapter represent maximum acceptable noise levels. New development should minimize noise exposure and noise generation.
- Policy 3.3.2: New development of noise-sensitive land uses (see Section 1.5 – Definitions) shall not be permitted in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed 60 dB LDN or CNEL (70 LDN or CNEL for outdoor sports and recreation) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaced to or below the levels specified for the given land use in Table 3-1.
- Policy 3.3.3: Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 3-1 within the outdoor activity areas are interior spaces of existing noise sensitive land uses.
- Policy 3.3.4: New development of noise-sensitive land uses shall not be permitted where the noise level due to existing stationary noise sources will exceed the noise level standards of Table 3-2, unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below the levels specified in Table 3-2.

- Policy 3.3.5: Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated as follows and shall be the responsibility of the developer of the stationary noise source:
  - Noise levels shall be reduced to or below the noise level standards in Table 3-2 where the stationary noise source will expose an existing noise-sensitive land use (which is listed in the Land Use element as an allowable use within its existing land use category) to noise levels which exceed the standards in Table 3-2. When the affected noise-sensitive land use is Outdoor Sports and Recreation, the noise level standards in Table 3-2 shall be increased by 10 Db.
  - Noise levels shall be reduced to or below the noise level standards in Table 3-2 where the stationary noise source will expose vacant land in the Agriculture, Rural Lands, Residential rural, Residential Suburban, Residential Single-Family, Residential Multi-Family, Recreation, Office and Professional, and Commercial Retail land use categories to noise levels which exceed the standards in Table 3-2.
  - For new proposed resource extraction, manufacturing or processing noise sources or modifications to those sources which increase noise levels: where such noise sources will expose existing noise-sensitive land uses (which are listed in the Land Use Element as allowable uses within their land use categories) to noise levels which exceed the standards in Table 3-2, best available control technologies shall be used to minimize noise levels. The noise levels shall in no case exceed the noise level standards in Table 3-2.
- Policy 3.3.6: San Luis Obispo County shall consider implementing mitigation measures where existing noise levels produce significant noise impacts to noise-sensitive land uses or where new development may result in cumulative increases of noise upon noise-sensitive land uses.

Safety Element

- Goal S-1: Attain a high level of emergency preparedness.
  - Policy S-1 Response: Support the response programs that provide emergency and other services to the public when a disaster occurs. The focus of response activities is saving live and preventing injury, and reducing immediate property damage.
  - Policy S-2 Emergency Preparedness: Continue to improve preparedness programs that educate and organize people to respond appropriately to disasters. They include education and awareness programs for individuals, families, institutions, businesses, government agencies and other organizations.
  - Policy S-3 Coordination: Improve coordination among City, County and State programs, and among others working to reduce the risks of disasters. This should also include improved coordination with the news media. This will result in more effective preparedness, response and recovery from disasters.
  - Policy S-4 Information Systems and Research: Expand and keep current the database of safety related information. Knowledge about disasters and the area we live in is growing. New information must be made available to the public and decision makers. Regularly update the GIS data as new information becomes available.

- Policy S-5 Risk Assessment: Continue investigations that reduce or eliminate long term risks. Risk assessment activities, effectively carried out, can improve the efficiency and reduce the cost of response and recovery from disasters.

- Goal S-4: Reduce the threat to life, structures and the environment caused by fire.
  - Policy S-14 Facilities, Equipment and Personnel: Ensure that adequate facilities, equipment and personnel are available to meet the demands of fire fighting in San Luis Obispo County based on the level of service set forth in the fie agency's master plan.
  - Policy S-15 Readiness and Response: The CDF/County Fire Department will maintain and improve its ability to respond and suppress fires throughout the County.
  - Policy S-16 Loss Prevention: Improve structures and other values at risk to reduce the impact of fire. Regulations should be developed to improve the defensible area surrounding habitation.
- Goal S-5: Minimize the potential for loss of life and property resulting from geologic and seismic hazards.
  - Policy S-19 Reduce Seismic Hazards: The County will enforce applicable building codes relating to the seismic design of structures to reduce the potential for loss of life and reduce the amount of property damage.
  - Policy S-20 Liquefaction and Seismic Settlement: The County will require design professionals to evaluate the potential for liquefaction or seismic settlement to impact structures in accordance with the currently adopted Uniform Building Code (UBC).
- Goal S-6: Reduce the potential for harm to individuals and damage to the environment from aircraft hazards, radiation hazards, hazardous materials, electromagnetic fields, radon, and hazardous trees.
  - Policy S-26 Hazardous Materials: Reduce the potential for exposure to humans and the environment by hazardous substances.

4.5.1.5 San Luis Obispo County Local Coastal Program

In addition to those policies covered in the General Plan, the following sections of the Local Coastal Program (LCP) would apply to the Proposed Project.

Energy & Industrial Development

- Section 30262. Oil and gas development shall be permitted in accordance with Section 30260, if the following conditions are met:
  (a) The development is performed safely and consistent with the geologic conditions of the well site.
  (b) New or expanded facilities related to such development are consolidated, to the maximum extent feasible and legally permissible unless consolidation will have adverse environmental consequences and will not significantly reduce the number of producing wells, support facilities, or sites required to produce the reservoir economically and with minimal environmental impacts.

(c) Environmentally safe and feasible subsea completions are used when drilling platforms or islands would substantially degrade coastal visual qualities unless use of such structures will result in substantially less environmental risks.

(d) Platforms or islands will not be sited where a substantial hard to vessel traffic might result from the facility or related operations, determined in consultation with the United States Coast Guard and the Army Corps of Engineers.

(e) (e) Such development will not cause or contribute to subsidence hazards unless it is determined that adequate measures will be undertaken to prevent damage from such subsidence.

(f) With respect to new facilities, all oil field brines are re-injected into oil-producing zones unless the Division of Oil and Gas of the Department of Conservation determines to do so would adversely affect production of the reservoirs and unless injection into other subsurface zones will reduce environmental risks. Exceptions to re-injections will be granted consistent with the Ocean Waters Discharge Plan of the State Water Resources Control Board and where adequate provision is made for the elimination of petroleum odors and water quality problems.

- Section 30232. Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.
- Section 30263
  (a) New or expanded refineries or petrochemical facilities not otherwise consistent with the provisions of this division shall be permitted if: (1) alternative locations are not feasible or are more environmentally damaging; (2) adverse environmental effects are mitigated to the maximum extent feasible; (3) it is found that not permitting such development would adversely affect the public welfare; (4) the facility is not located in a highly scenic or seismically hazardous area, on any of the Channel Islands, or within or contiguous to environmentally sensitive areas; and, (5) the facility is sited so as to provide a sufficient buffer area to minimize adverse impacts on surrounding property.

  (b) In addition to meeting all applicable air quality standards, new or expanded refineries or petrochemical facilities shall be permitted in areas designated as air quality maintenance areas by the State Air Resources Board and in areas where coastal resources would be adversely affected only if the negative impacts of the project upon air quality are offset by reductions in gaseous emissions in the area by the users of the fuels, or, in the case of an expansion of an existing site, total site emission levels, and site levels for each emission type for which national or state ambient air quality standards have been established do not increase.

  (c) New or expanded refineries or petrochemical facilities shall minimize the need for once-through cooling by using air cooling to the maximum extent feasible and by using treated waste waters from in plant processes where feasible.
- Policy 1A New Facilities and Expansion of Existing Sites
  - Section 1. No permit, entitlement, lease, or other authorization of any kind within the

County of San Luis Obispo which would authorize or allow the development, construction, installation, or expansion of any onshore support facility for offshore oil and gas activity shall be final unless such authorization is approved by a majority of the votes cast by a vote of the people of the County of San Luis Obispo in general or special election. For the purpose of this ordinance, the term "onshore support facility" means any land use, installation, or activity required to support the exploration, development, production, storage, processing, transportation, or related activities of offshore energy resources.

- Policy 24: Requirement for Petroleum Transportation
  - Offshore oil shall be transported to refining centers by pipeline, where feasible, rather than by petroleum tankers to minimize increased air pollutant emissions and the increased probability of oil spills.
  - Proposals for expanding, modifying or constructing new oil processing facilities shall be conditioned to require shipment of oil by pipeline when constructed, unless such transport would not be feasible for a particular operation as determined by the Pipeline Working Group (PWG), the operator and the county.
  - The county in conjunction with the OCS Pipeline Working Group shall examine the applicability and feasibility of designating existing marine terminals as nonconforming uses and requiring the shipment of oil through the new pipelines.
- Policy 25: Air Pollution Standards
  - Any expansion or modification of existing petroleum processing or transportation facilities or the construction of new facilities shall meet San Luis Obispo County Air Pollution Control District (APCD) standards. As a condition of approval, the APCD Officer may:
    - Require an air pollutant emission/oil throughput limitation by which allowable oil throughput through the facility is based upon the amount of air pollutant emissions.
    - Set limits on the timing of loading operations when projected oxidant levels exceed designated levels.
    - Require establishment of an ambient air monitoring system in a manner approved by the APCD to continuously monitor pollutants and record wind speed and direction.

Public Works

- Policy 1: Availability of Service Capacity
  - New development (including divisions of land) shall demonstrate that adequate public or private service capacities are available to serve the proposed development. Priority shall be given to infilling within existing subdivided areas. Prior to permitting all new development, a finding shall be made that there are sufficient services to serve the proposed development given the already outstanding commitment to existing lots within the urban service line for which services will be needed consistent with the Resource Management System where applicable. Permitted development outside the USL shall be allowed only if:

    - It can be serviced by adequate private on-site water and waste disposal systems; and
    - The proposed development reflects that it is an environmentally preferable alternative.
  - The applicant shall assume responsibility in accordance with county ordinances or the rules and regulations of the applicable service district or other providers of services for costs of service extensions or improvements that are required as a result of the project. Lack of proper arrangements for guaranteeing service is grounds for denial of the project or reduction of the density that could otherwise be approved consistent with available resources.

Coastal Watersheds

- Policy 1: Preservation of Groundwater Basins
  - The long-term integrity of groundwater basins within the coastal zone shall be protected. The safe yield of the groundwater basin, including return and retained water, shall not be exceeded except as part of a conjunctive use or resource management program which assures that the biological productivity of aquatic habitats are not significantly adversely impacted.

Hazards

- 30253. (Portion) New development shall:
  - Minimize risks to life and property in areas of high geologic, flood, and fire hazard.
  - Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.
- Policy 9: High Fire Risk Areas
  - Fire hazard areas shall be defined as those having potential for catastrophic fire. The county shall designate and show on the Hazards maps those high risk fire areas as delineated by the State Division of Forestry.
  - New residential development in high risk fire areas shall be required to be reviewed and conditioned by the Fire Warden to ensure that building materials, access, brush clearings and water storage capacity are adequate for fire flow and fire protection purposes.

Air Quality

- Policy 1: Air Quality
  - The county will provide adequate administration and enforcement of air quality programs and regulations to be consistent with the county's Air Pollution Control District and the State Air Resources Control Board.

4.5.1.6 South County Coastal Area Plan

The South County Coastal Area Plan identifies these standards pertaining to the Proposed Project.

- Permit Requirements. Any proposed modification or expansion of the existing Refinery or coke oven or the construction of partial oil and gas processing facilities to service off-shore derived oil and gas that involves land area beyond that presently developed requires Development Plan approval and shall be subject to the following:
  - Phasing plan for staging development indicating the anticipated time table and site plans for Project initiation, expansion possibilities, completion, consolidation possibilities, and decommissioning (Local Coastal Plan [LCP]).
  - A fire protection system approved by the governing authority (LCP).
  - Screening of the facilities from public view through height limitations, careful site design, artificial contoured banks and mounding, extensive landscaping, and decorative walls and fences (LCP).
  - Any part of the facilities that cannot effectively be screened by the above methods shall be painted with nonreflective paint of colors that blend with the surrounding natural landscape (LCP).
  - Oil spill contingency plan (using most effective feasible technology) indicating the location and type of cleanup equipment, designation of responsibilities for monitoring, cleanup, waste disposal and reporting of incidents and provisions for periodic drills by the operator, as requested by the County, to test the effectiveness of the cleanup and containment equipment and personnel (LCP).
- Limitation on Use. All uses are prohibited except petroleum refining and related industries (including partial oil and gas processing and related industries); coastal access ways; water wells and impoundments; and pipelines and power transmissions. No off-road vehicular use is permitted other than for management of the industrial and natural areas (LCP).
- Site Location. Site location shall minimize impacts to identified rare and endangered plant species and be located to provide a buffer from exposed dune areas on site. A qualified biologist shall survey the site and make recommendations on siting alternatives and appropriate mitigation (LCP).
- Buffer Zones. No facilities shall be located in the area west of the railroad, which shall serve as a protective, natural buffer separating the heavy industrial use from the recreational activities within the dunes. This buffer area shall be managed cooperatively between the property owners and the California Department of Parks and Recreation to encourage dune revegetation and stabilization within the buffer area. A buffer area shall be required to reduce impacts to the nearby residential areas (LCP).
- Air Pollutions Standards. Any expansion or modification of existing petroleum processing or transportation facilities or the construction of new facilities shall meet San Luis Obispo County Air Pollution District (APCD) standards (LCP).

4.5.1.7 Zoning

The San Luis Obispo County Code, Title 23 Coastal Zone Land Use, contains the County's Land

Use Ordinance. The Land Use Ordinance implements the policies of the General Plan, identifying allowable uses within each land use category and site planning and project design standards and review procedures. The policies of the Land Use Ordinance and the enforceable standards of the Land Use Ordinance work together to ensure the compatibility of uses. The Proposed Project Site has an industrial land use designation.

4.5.2 Regulatory Setting

This section summarizes applicable federal, state, and local land use planning policies and regulations regarding the Proposed Project.

4.5.2.1 Federal

The Federal Coastal Zone Management Act of 1972, as administered by the State of California, applies to the Proposed Project. Other federal agencies having regulatory authority that affect land use and growth issues include the U.S. Environmental Protection Agency (EPA), the U.S. Army Corp of Engineers (ACOE), and the U.S. Fish and Wildlife Service (USFWS).

4.5.2.2 State

The California Coastal Commission

The California Coastal Act (Act) of 1976 created the California Coastal Commission (CCC) and established planning and management policies for the protection of coastal resources. The Act requires local governments lying in the coastal zone to prepare local coastal programs (LCP) that provide for maximum public access to the coast and public recreation areas (see Section 30500 of the Act). Through the certification process of the local coastal programs, the CCC would identify sensitive coastal resources, determine whether these areas were of regional or statewide significance, identify potentially significant adverse impacts that could result to these coastal resources from development, and ensure that actions adequate to protect these resources are incorporated into the LCP.

After an LCP has been certified and all implementing actions have become effective, the Act delegates subsequent development review authority to the local agency whose program has been certified. However, such delegation does not apply to any development on any tidelands, submerged lands, or public trust lands lying within the coastal zone. Such lands are considered the original jurisdiction of the state. The act does not change the authority of the CSLC over lands within its jurisdiction.

The planning and management policies to protect coastal resources are described in Sections 30200 through 30264 of the Act. Sections 30210 through 30213 of the Act provide that the public's right of access to the sea is not to be interfered with by development unless it is inconsistent with public safety, military security, or the protection of coastal resources. Where appropriate and feasible, public facilities, including parking would be distributed throughout an area to minimize impact to any single area. Low-cost visitor and recreation facilities and low- and moderate-income housing opportunities would be encouraged.

Sections 30230 through 30236 of the Act provide that marine resources are to be maintained, enhanced, and, where feasible, restored. Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances would be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures would be provided for accidental spills. Facilities serving the commercial fishing and recreational boating industries would be protected and, where feasible, upgraded.

Pursuant to Sections 30240 through 30254 of the Act, land resources such as environmentally sensitive habitat areas and prime agricultural land would be protected. Archaeological and paleontological resources would also be protected. The scenic and visual qualities of coastal areas would be considered and protected when contemplating development. New development would maintain and enhance public access to the coast by having passages to roadways and transit opportunities.

Pursuant to Sections 30260 through 30264 of the Act, coastal-dependent industrial development would be encouraged to locate or expand within existing sites and long-term growth would be permitted where consistent with the area. Where new or expanded facilities are not otherwise consistent, they will be permitted if: (1) alternative locations are not feasible or are more environmentally damaging; (2) adverse environmental effects are mitigated to the maximum extent feasible; (3) it is found that not permitting such development would adversely affect the public welfare; (4) the facility is not located in a highly scenic or seismically hazardous area, on any of the Channel Islands, or within or contiguous to environmentally sensitive areas; and (5) the facility is sited so as to provide a sufficient buffer area to minimize adverse impacts on surrounding property.

Other State Agencies

Other state agencies having control over land use in San Luis Obispo County include the California Department of Parks and Recreation, the California Department of Fish and Game, and the California Department of Transportation. Additionally, the South Coast Air Quality Management District implements state and federal policies within the vicinity of the Proposed Project Site.

4.5.2.3 Local

County of San Luis Obispo

General Plan

In accordance with California state law, the County of San Luis Obispo adopted a General Plan to guide development within the County. The General Plan expresses the County's development goals; embodies public policy relative to the distribution of future land uses; provides a basis for local government decision making; and informs citizens, developers, and decision-makers of the ground rules pertaining to new development.

The existing General Plan land use map designates the Proposed Project Site as industrial. The

General Plan permits petroleum refining and related industries as a special use (S-5-P) in the industrial land use category.

Individual policies within the General Plan applicable to the Proposed Project are discussed in the Policy Consistency Analysis subsection.

South County Coastal Area Plan

The County General Plan Land Use Element includes multiple area plans that refine general policies of the Framework for Planning for each community. The Proposed Project Site is within the County's South Coastal Planning Area. The South County Coastal Area Plan identifies policies, programs, and standards that provide guidance for development specific to the planning area.

Chapter 6, Land Use, Section A, Rural Area Land Use of the South County Coastal Area Plan states the following regarding the Proposed Project Site:

> The large industrial area west and south of Highway 1 is currently occupied by the Santa Maria Oil Refinery (operated by Union Oil Company of California) and the Santa Maria Chemical Plant operated by the Union Chemical Division, Carbon Group. These uses occupy only a portion of the total area, and the large vacant areas provide a desirable buffer from adjacent uses and an area where wind-carried pollutants can be deposited on-site, thereby not affecting neighboring properties. This is particularly important to the agricultural uses in the Santa Maria Valley. Any proposed modification or expansion of the Refinery and coke ovens should be subject to Development Plan approval covering the entire property to designate buildable and open space areas. No major expansion or alterations to these operations are envisioned at this time. Proposed offshore oil and gas lease sales, however, may generate the need for onshore partial oil and gas processing facilities. The siting of such facilities may be appropriate in this area due to similarities in scale and use, adequate vacant lands, and proximity to areas being considered for lease.

Local Coastal Program

In compliance with the 1976 California Coastal Act, the County of San Luis Obispo prepared an LCP for the portion of County land within the coastal zone. The LCP guides future development within the County's coastal zone and makes recommendations for the preservation of resources in the zone.

Coastal Zone Land Use

The County Zoning Ordinance implements the General Plan and provides more specific criteria for development. The County of San Luis Obispo Land Use Ordinance is articulated in the County of San Luis Obispo Municipal Code, Title 23 Coastal Zone Land Use.

The County's Land Use Ordinance, Chapter 23.08.080 Industrial Uses (S-5), allows petroleum refining subject to Development Plan approval in areas with an Industrial land use designation.

The County's Land Use Ordinance, Chapter 23.08.094 Petroleum Refining and Related

Industries, and Marine Terminals and Piers, requires a Specific Plan except for:

> Additions within existing facilities or modifications to existing facilities mandated by local, state, or federal requirements or by a demonstrated need for replacement due to technological improvement or facility age that do not expand the capacity of a facility by more than 10 percent or expand the existing exterior boundary of the site.

In accordance with the County's Land Use Ordinance, Chapter 23.02.033 Minor Use Permits, a Minor Use Permit (D890530P) was granted for the Project Site in 1990 to allow a gland oil system, an upgraded sulfur unit, a coker steamout system, a refinery relief system, certain instrumentation, and a tank farm vapor recovery system. Conditions of Approval for the permit included:

> GEN 1: Refinery operations under this approval to be conducted at a maximum 44,500 barrels per day wet.
>
> GEN 3: Obtain a new development plan approval for any refinery modifications or expansion, any changes in maximum refining capacity or changes in maximum throughput from 44,500 BPD wet oil, or any other significant changes which in the county's sole judgment have the potential to cause significant impacts.

In accordance with the County's Land Use Ordinance, Chapter 23.02.034 Development Plan, a Development Plan (D890287D) was granted for the Project Site in 1990 to allow a modified process water stripper and storage tank, and a flare stack. Conditions of Approval for the Development Plan included:

> GEN 1: Refinery operations under this approval to be conducted at a maximum 44,500 barrels per day wet.
>
> GEN 3: Obtain a new development plan approval for any refinery modifications or expansion, any changes in maximum refining capacity or changes in maximum throughput from 44,500 BPD wet oil, or any other significant changes which in the county's sole judgment have the potential to cause significant impacts.

4.5.3 Significance Criteria

Based on the State of California Environmental Quality Act (CEQA) Guidelines (Appendix G), the Proposed Project would result in a significant impact if it:

- Physically divides an established community;
- Conflicts with established and proposed land use policies and adopted general or specific plans for purpose of avoiding or mitigating an environmental effect;
- Results in substantial quality of life effects on occupants of existing surrounding uses or is incompatible with existing surrounding land uses;
- Conflicts with any applicable habitat conservation plan or natural community conservation plan.

4.5.4 Proposed Project Impacts and Mitigation Measures

Impact #	Impact Description	Phase	Residual Impact
LU.1	Noise from throughput increase operations would be incompatible with the adjacent land uses.	Operations	Class II

Potential future operations would be in close proximity to land uses zoned as recreational, agricultural, residential land, and open space. As discussed in Section 4.3, Noise and Vibration, various operations and alarms at the Refinery generate noise in the community. The level of noise impacts on the community would not increase due to an increase in crude oil throughput at the Refinery. Alarm frequency would remain the same. Although use of equipment, such as the crude heaters, would increase, noise levels would not increase at receptors near the Refinery.

The project will not affect pump station operations along the pipeline routes from the Santa Maria Pump Station to the Refinery and from the Refinery north to the Bay Area.

The Santa Margarita Pump Station, located along the pipeline from the Refinery to the Bay Area, is located in a rural area in close proximity to residences. Natural gas engines operate the pumps and make substantially more noise than electricity driven pumps. Noise monitoring at the Santa Margarita Pump Station indicated that noise levels during the nighttime are audible to nearby residences, but this project would not produce a significant impact. Noise levels from the Santa Margarita Pump Station do not exceed the County Noise Element limit of 50 dBA as measured at the receptor's fenceline.

Mitigation Measures

Implement mitigation measure N-1.

Residual Impacts

The residual impacts would be less than significant with mitigation.

Impact #	Impact Description	Phase	Residual Impact
LU.2	Emissions and odors from operations could be incompatible with adjacent land uses.	Operations	Class II

Throughput increase operations at the SMF will not cause a change in odor events.

Released materials that cause odors can travel a substantial distance since the odor thresholds for materials can be as low as parts per billion. Odor impacts associated with accidental releases or from normal operations at the Refinery could impact surrounding areas. Increased processing of crude oil, leading to increased movements of sulfur and increased stack emissions, will not lead to increased frequency and/or duration of odor events. There will be no impact to adjacent land uses from this project.

Mitigation Measures

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Implement mitigation measure AQ-2. No additional mitigation measures are proposed.

Residual Impacts

The residual impacts would be less than significant with mitigation. \

4.5.5 Policy Consistency Analysis

The policy analysis contains a preliminary evaluation of the Proposed Project's consistency with selected General Plan policies. The County is responsible for deciding whether to approve, conditionally approve, or deny the Proposed Project. Among other considerations, the County will base its decision on the Project's consistency with applicable plans and policies. The assessment of the Project's consistency with the plans and policies below is preliminary. The County will make findings of fact concerning policy consistency during its deliberations on the Proposed Project.

4.5.5.1 San Luis Obispo County General Plan

Several goals and policies of the General Plan would be applicable to the Proposed Project.

Agricultural Element

Goal AG3: Protect Agricultural Lands

Policy AGP17 Agricultural Buffers: Protect land designated Agriculture and other lands in production agriculture by using natural or man-made buffers where adjacent to non-agricultural land uses in accordance with the agricultural buffer policies adopted by the Board of Supervisor.

Consistency Analysis: The Proposed Project is an industrial use with existing agricultural land uses nearby to the south, southwest, and east. Sufficient land use buffering exists between the subject property and surrounding properties. As the Proposed Project does not include any construction, new buildings or facility additions that could impact surrounding properties, no new land use buffering techniques are planned. Therefore, the Proposed Project is consistent with this goal.

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Policy AGP18 Location of Improvements: Locate new buildings, access roads, and structures so as to protect agricultural land.

Consistency Analysis: The Proposed Project does not include any construction, new buildings, facility additions or new access roads that could impact surrounding properties. Therefore, the Proposed Project is consistent with this goal.

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Land Use Element – Coastal Zone Framework for Planning[2]

Environment Goal: Maintain and protect a living environment that is safe, healthful and pleasant for all residents.

Consistency Analysis: Since 1955 the subject property's land use has been petroleum oil refining and operations have been conducted in a safe and healthful way. Over the years, improvements have been made to include four of the large petroleum storage tanks that were retrofitted with domed-roof vapor recovery systems in the early 1990s to reduce significant odor impacts. In 2007, ConocoPhillips permanently shut down the petroleum coke calciner, thereby reducing facility emissions of hazardous air pollutants to less than the major source threshold level. Additionally, the facility installed a new boiler in the utility plant to replace steam production from the calciner waste heat boiler. The Proposed Project would increase the permitted volume of processed crude oil at the existing refinery in a demonstrated safe and healthful way. Therefore, the Proposed Project is consistent with this goal.

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Air Quality Goal: Preserve, protect and improve the air quality of the county.

Consistency Analysis: The Applicant has demonstrated in the past an effort to preserve, protect and improve the air quality of the county. In 2007, to meet criteria pollutant requirements, rather than implementing control technology on the petroleum coke calciner, ConocoPhillips elected to permanently shut down the facility. This shutdown reduced facility emissions of hazardous air pollutants to less than the major source threshold level and also led to several equipment and operating condition changes in the permit. For example, the facility installed a new boiler in the utility plant to replace steam production from the calciner waste heat boiler. These actions exemplify the Applicant's continued desire to preserve, protect and improve the air quality in the county. Therefore, the Proposed Project is consistent with this goal.

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Distribution of Land Uses Goal: Encourage an urban environment that is an orderly arrangement of buildings, improvements, and open space appropriate to the size and scale of development for each community.

Consistency Analysis: The Proposed Project does not include any construction, new buildings, facility additions or new access roads that could impact the surrounding environment to include adjacent and nearby open space, industrial, agricultural, and residential land uses. Therefore, the Proposed Project is consistent with this goal.

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Residential Land Uses Goal: Preserve and enhance the quality of residential areas.

Consistency Analysis: The Proposed Project would not introduce any additional employees or substantial construction to the area and therefore, would not induce substantial growth in an area either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure), would not displace existing housing or people, requiring construction of replacement housing elsewhere or create the need for substantial new housing in the area. The

[2] For understanding and ease of administration, the Land Use Element and Land Use Plan portion of the Local Coastal Program have been combined into a single plan for the Coastal Zone portion of the county (General Plan 2009).

Proposed Project would also not require the expansion of existing roadways to accommodate increased traffic. Therefore, the Proposed Project is consistent with this goal.

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Commercial and Industrial Land Uses Goal: Designate commercial and/or industrial areas that are compatible with overall land use.

Consistency Analysis: The Proposed Project is an industrial land use and has been since at least 1955. Furthermore, the subject property is mostly adjacent to industrial land uses. Therefore, the Proposed Project is consistent with this goal.

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Public Services and Facilities Goal: Provide additional public resources, services and facilities to serve existing communities in sufficient time.

Consistency Analysis: The Proposed Project Site's land use has been petroleum oil refining since 1955. The Proposed Project would not require additional public resources. The Proposed Project would not use substantial amounts of fuel or energy as modifications to the Refinery would not be substantial. The SMF obtains all of its water from onsite wells and projects a potential one percent increase in water usage. Further, according to CALFIRE, fire protection appears to be adequate for the existing area. Therefore, the Proposed Project is consistent with this goal.

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Circulation Goal 1: Integrate land use and transportation planning.

Consistency Analysis: The Proposed Project would continue its industrial nature and continue to use the existing network of roadways leading to and from the Santa Maria Facility and US Highway 101. The increased traffic generated by the Proposed Project would not require any expansion or improvements to the roadway network. Therefore, the Proposed Project is consistent with this goal.

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Circulation Goal 2: Recognizing public transit and car pooling as very important components of the county's strategy to provide adequate circulation and to reduce dependency on the automobile.

Consistency Analysis: Santa Maria Facility operations currently involve 95 employees and 65 contractors during the week and 40 employees on weekends. Typically 10 employees work at the facility during nighttime. Although the facility is not accessible by public transit, the Applicant encourages its employees to carpool whenever possible. Therefore, the Proposed Project is consistent with this goal.

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Circulation Goal 3: Developing and coordinating transportation programs that reinforce federal, state, regional and local agency goals.

Consistency Analysis: Santa Maria Facility operations currently involve 95 employees and 65 contractors during the week and 40 employees on weekends. Typically 10 employees work at the facility during nighttime. Although the facility is not accessible by public transit, the Applicant encourages its employees to carpool whenever possible. Therefore, the Proposed Project is consistent with this goal.

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Implementation and Administration Goal: Improve the effectiveness of the planning process.

Consistency Analysis: Approval of the Proposed Project is partly contingent on successful review of the environmental impacts and associated mitigation measures. Further, this EIR is subject to public review and comment by affected stakeholders, which contributes to the effectiveness of the planning process. Therefore, the Proposed Project is consistent with this goal.

Resource Use and Energy Conservation Goal: Support the conservation of energy resources.

Consistency Analysis: The Proposed Project would not use substantial amounts of fuel or energy as modifications to the Refinery would not be substantial. Under the Proposed Project, electricity purchased from PG&E would decrease by a ratio similar to the increase in crude throughput; that is, down to ____ MWhr/yr (assuming onsite generation would be the same as 2007). Further, natural gas purchased from Southern California Gas would decrease by a ratio similar to the increase in crude throughput; that is, down to ____ mmscf. Therefore, the Proposed Project is consistent with this goal.

Economics Goal: Promote a strong, diverse, and viable local economy.

Consistency Analysis: The Proposed Project contributes to the local economy by providing a much needed energy resource, as well as jobs. The Santa Maria Facility operations currently involve 95 employees and 65 contractors during the week and 40 employees on weekends. Typically 10 employees work at the facility during nighttime. Therefore, the Proposed Project is consistent with this goal.

Land Use Goal 1: Reconciling discordant land uses by identifying the relationships between uses that minimize land use conflicts.

Consistency Analysis: The Proposed Project is an industrial land use adjacent to or nearby industrial, open space, recreation, agricultural, and residential land uses. The subject property's land use has been petroleum oil refining since 1955 and has not experienced any major land use conflicts with neighboring properties. The proposed throughput increase would not aggravate these land use conditions. Therefore, the Proposed Project is consistent with this goal.

Land Use Goal 2: Supporting preservation of the county's agricultural industry and the soils essential to agriculture.

Consistency Analysis: The Proposed Project would not convert existing agricultural land to other uses, impair agricultural use of nearby lands, or conflict with existing zoning. The Proposed Project would not involve soil movement or grading, and therefore would not result in exposure to or production of unstable earth conditions, result in soil erosion, topographic changes, loss of topsoil or unstable soil conditions. The Proposed Project would also not change rates of soil absorption, or the amount or direction of surface runoff or change the drainage patterns. Therefore, the Proposed Project is consistent with this goal.

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Land Use Goal 3: Supporting protection and preservation of county open space and recreational resources while providing for appropriate development.

Consistency Analysis: The Proposed Project does not include any construction, new buildings, facility additions or new access roads that could impact surrounding properties to include open space and recreational resources, such as the Pismo Dunes State Vehicular Recreation Area. Therefore, the Proposed Project is consistent with this goal.

Land Use Goal 4: Providing areas where agricultural, residential, commercial and industrial uses may be developed in harmonious patterns and with all the necessities for satisfactory living and working environments.

Consistency Analysis: The Proposed Project is an industrial land use adjacent to or nearby industrial, open space, recreation, agricultural, and residential land uses. The subject property's land use has been petroleum oil refining since 1955 and has not experienced any major land use conflicts with neighboring properties. The proposed throughput increase would not aggravate these land use conditions. Therefore, the Proposed Project is consistent with this goal.

Land Use Goal 5: Protecting coastal resources, public access to the shoreline and visitor-serving areas, as required by the California Coastal Act.

Consistency Analysis: The Proposed Project would not impact public access to the shoreline and visitor-serving areas since no new construction is proposed. Therefore, the Proposed Project is consistent with this goal.

Land Use Goal 6: Establishing density patterns keyed to both the physical and man-made characteristics of land.

Consistency Analysis: The Proposed Project does not include any construction, new buildings, facility additions or new access roads that could impact existing density patterns. The surrounding properties would not be adversely affected by the proposed throughput increase. Therefore, the Proposed Project is consistent with this goal.

Conservation and Open Space Element

Goal AQ 1: Per capita vehicle-miles-traveled countywide will be substantially reduced consistent with statewide targets.

Policy AQ 1.2 Reduce vehicle miles traveled: Require project subject to discretionary review to minimize additional vehicle travel.

Consistency Analysis: Currently, the Santa Maria Facility personnel generate approximately 160 roundtrips (320 one-way trips) per day. The Santa Maria Facility normal operations generate approximately 5 truck roundtrips (10 one-way trips) per day, not including green coke and sulfur-related trips. In 2009, the Santa Maria Facility had approximately 15,009 truck roundtrips related to green coke and sulfur, which comes to approximately 41 trucks per day, or 82 one-way truck trips per day. In total, the Santa Maria Facility generates approximately 206 vehicle

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roundtrips per day or 412 one-way vehicle trips per day.

The Proposed Project operations estimate an increase from 15,009 truck roundtrips per year to 15,845 truck roundtrips per year, which is an increase of 836 truck roundtrips per year. Therefore, although not significant, the Proposed Project may not be consistent with this policy.

Comment [S6]: 836/365 = 2.5/d, that is less than 4 trucks per day! 1

Policy AQ 1.9 Use of rail: Encourage and facilitate, where appropriate, the use of railways as an alternative to trucking materials out of the county by preserving existing services and rights-of-way and investigating the feasibility of increasing general freight traffic by developing additional loading facilities. Railways should also be encouraged for use by passengers.

Consistency Analysis: The Proposed Project's increase in throughput would result in an increase in shipments leaving the facility by either truck or railcar. However, there are no permit limits on the amount of truck versus rail transportation levels. Rail transportation is driven by market forces and availability of rail infrastructure in those areas where markets for the different Refinery products may exist In addition, under greenhouse gas mitigation in the Air Quality Section there is a requirement to use rail if rail is available. In order to assess potential impacts, as a worst-case scenario, it is assumed that the entire future production of green coke and sulfur would be transported by truck. Therefore, the Proposed Project may be found consistent with this policy.

Goal AQ 3: State and federal ambient air quality standards will, at a minimum, be attained and maintained.

Policy AQ 3.1 Coordinate with other jurisdictions: Coordinate with neighboring jurisdictions and affected agencies to address cross-jurisdictional and regional transportation and air quality issues.

Consistency Analysis: The Proposed Project was developed in cooperation with the San Luis Obispo County Air Pollution Control District (APCD). Regarding transportation, data and reports from Caltrans, San Luis Obispo County, the City of Santa Maria, and Santa Barbara County were analyzed in developing this EIR. Therefore, the Proposed Project is consistent with this policy.

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Policy AQ 3.2 Attain air quality standards: Attain or exceed federal or state ambient air quality standards (the more stringent if not the same) for measured criteria pollutants.

Consistency Analysis: The evaluation of the Project's air emissions identified mitigation measures to address air quality standards where thresholds would be exceeded. Therefore, the Project does not conflict with this policy.

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Policy AQ 3.4 Toxic exposure: Minimize public exposure to toxic air contaminants, ozone, particulate matter, sulfur dioxide, carbon monoxide, nitrogen oxides, and lead.

Consistency Analysis: The evaluation of the Project's air emissions did not identify significant increases to toxic air contaminants, ozone, particulate matter, sulfur dioxide, carbon monoxide, nitrogen oxides, and lead where thresholds would be exceeded. Therefore, the Project does not

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conflict with this policy.

Policy AQ 3.5 Equitable decision making: Ensure that land use decisions are equitable and protect all residents from the adverse health effects of air pollution.

Consistency Analysis: The Project may result in adverse air quality impacts; however, mitigation measures have been identified to address these impacts and their related effects on residents. Therefore, the Project does not conflict with this policy.

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Policy AQ 3.6 Strategic growth principles: Ensure that implementation of the Strategic Growth principles and goals are balanced with protection of sensitive receptors near high-volume transportation routes and sources of toxic emissions (i.e., railyards, downtown centers, gasoline development facilities, chrome platers, dry cleaners, and refineries).

Consistency Analysis: The Air Quality Section analyzed impacts associated with transportation routes and diesel truck emissions and their health effects on populations and found them to be less than significant. Therefore, the Project does not conflict with this policy.

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Policy AQ 3.7 Reduce vehicle idling: Encourage the reduction of heavy-vehicle idling throughout the county, particularly near schools, hospitals, senior care facilities, and areas prone to concentrations of people, including residential areas.

Consistency Analysis: The Project does not include idling of trucks during transportation or delivery of crude to the Santa Maria Pump Station. In addition, there are no sensitive receptors within 1,000 feet of the Pump Station. Therefore, the Project does not conflict with this policy.

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Policy AQ 3.8 Reduce dust emissions: Reduce PM10 and PM2.5 emissions from unpaved and paved County roads to the maximum extent feasible.

Consistency Analysis: The Project does not include construction that could lead to dust emissions, nor does it contain vehicles using unpaved roads. Therefore, the Project does not conflict with this policy.

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Goal AQ 4: Greenhouse gas emissions from County operations and communitywide sources will be reduced from baseline levels by a minimum of 15% by 2020.

Policy AQ 4.1 Reduce greenhouse gas emissions: Implement and enforce State legislative or regulatory standards, policies, and programs designed to reduce greenhouse gas emissions.

Consistency Analysis: State requirements for greenhouse gas (GHG) emissions have been evaluated and the Project would generate a significant amount of GHG emissions. However, air quality measures implemented as part of the Proposed Project will partially reduce these impacts. Regardless, the Project may conflict with these policies.

Policy AQ 4.2 Identify greenhouse gas emissions: Quantify, reduce, and mitigate greenhouse gas emissions.

Consistency Analysis: State requirements for greenhouse gas (GHG) emissions have been evaluated and the Project would generate a significant amount of GHG emissions. Therefore, the Project may conflict with these policies.

Policy AQ 4.4 Development projects and land use activities: Reduce greenhouse gas emissions from development projects and other land use activities.

Consistency Analysis: State requirements for greenhouse gas (GHG) emissions have been evaluated and the Project would generate a significant amount of GHG emissions. Therefore, the Project may conflict with these policies.

Goal BR 1: Native habitat and biodiversity will be protected, restored, and enhanced.

Policy BR 1.3 Environmental review: Require environmental review of development applications pursuant to CEQA and County procedures to assess the impact of proposed development on native species and habitat diversity, particularly special-status species, sensitive natural communities, wetlands, and important wildlife nursery areas and movement corridors.

Consistency Analysis: The Proposed Project would not be expected to cause any impacts to native species and habitat diversity, or to introduce barriers to the movement of resident or migratory fish or wildlife species, or hinder the normal activities of wildlife. Therefore, the Proposed Project is consistent with this policy.

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Policy BR 1.9 Preserve ecotones: Require that proposed discretionary development protects and enhances ecotones, or natural transitions between habitat types because of their importance to vegetation and wildlife. Ecotones of particular concern include those along the margins of riparian corridors, baylands and marshlands, vernal pools, and woodlands and forests where they transition to grasslands and other habitat types.

Consistency Analysis: The Proposed Project would not be expected to impact ecotones or natural transition between habitat types. Therefore, the Proposed Project is consistent with this policy.

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Goal BR 4: The natural structure and function of streams and riparian habitat will be protected and restored.

Policy BR 4.1 Protect stream resources: Protect streams and riparian vegetation to preserve water quality and flood control functions and associated fish and wildlife habitat.

Consistency Analysis: The Proposed Project would not change rates of soil absorption, or the amount or direction of surface runoff or change the drainage patterns, thereby not impacting streams, riparian vegetation, or associated fish and wildlife habitat. Therefore, the Proposed Project is consistent with this policy.

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Goal E 3: Energy efficiency and conservation will be promoted in both new and existing development.

Policy E 3.1 Use of renewable energy: Ensure that new and existing development incorporates

renewable energy sources such as solar, passive building, wind and thermal energy. Reduce reliance on non-sustainable energy sources to the extent possible using available technology and sustainable design techniques, materials, and resources.

Consistency Analysis: Although the Santa Maria Facility uses fuel gas produced from the refining operation as a fuel source, primarily to fire heaters and boilers for process heat and steam, renewable energy is not used. The Proposed Project would result in a net decrease of use of energy from the grid and result in an increase of use of energy produced at the Refinery. Therefore, the Proposed Project may be consistent with this policy.

Policy E 3.2 Energy efficient equipment: Require the use of energy-efficient equipment in all new development, including but not limited to Energy Star appliances, high-energy efficiency equipment, heat recovery equipment, and building energy management systems.

Consistency Analysis: The Santa Maria Facility continues to improve its energy efficiency. Currently, nearly half of the electricity used by the Santa Maria Facility is generated onsite by the power generating unit. Additionally, the facility uses fuel gas produced from the refining operation as a fuel source, primarily to fire heaters and boilers for process heat and steam. Recently, a new boiler was installed in the utility plant to replace steam production from the calciner waste heat boiler. Therefore, the Proposed Project may be consistent with this policy.

Policy E 3.3 Use of renewable energy for water and wastewater: Promote the use of renewable energy systems to pump and treat water and wastewater.

Consistency Analysis: The SMF obtains all of its water from on-site wells. SMF water usage is mainly used for cooling, boiler feed for steam production, and process use, such as coke drum cutting. The water treatment plant was recently upgraded by installing a reverse osmosis system and replacing a water softener unit, which reduced water demand from the Refinery well water system.

All water drainage, including storm run-off, is contained on site. The Santa Maria Facility (SMF) discharges water to the Pacific Ocean pursuant to waste discharge requirements in Regional Water Quality Control Board Order Number R3-2007-0002, adopted September 7, 2007. The Order serves as the permit under the National Pollutant Discharge Elimination System (NPDES).

All process wastewater and contaminated storm water from the facility flow to a treatment system consisting of oil/water separators, dissolved air flotation, trickling filter, extended aeration, and secondary clarification. The treated wastewater is discharged to the Pacific Ocean through an outfall terminating 1,700 feet offshore and 27 feet deep. Therefore, the Proposed Project is[2] consistent with this policy.

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Goal E 5: Recycling, waste diversion, and reuse programs will achieve as close to zero waste as possible.

Policy E 5.1 Source reduction and waste diversion: Encourage source reduction and diversion of solid waste generated to as near zero waste as possible, in order to reduce energy consumption.

Consistency Analysis: The Proposed Project's expansion relates to increased crude oil throughput by 10 percent and does not include any facility expansion or related construction. Therefore, the Proposed Project is not expected to result in significant non-hazardous solid waste increases. Only insignificant quantities of wastes associated with the throughput increase would be generated. The Project would not result in a need for new or physically altered waste handling facilities, and would be in compliance with applicable regulations. During operations, trash and rubbish would be collected in waste bins and disposed of by a local waste hauler. The Cold Canyon Landfill will probably be the primary landfill serving the Proposed Project should the proposed landfill increase be approved by the County. If not, both the Chicago Grade and City of Paso Robles landfills have sufficient capacity. Therefore, the Proposed Project is consistent with this policy.

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Goal E 7: Design, siting, and operation of non-renewable energy facilities will be environmentally appropriate.

Policy E 7.2 Facility upgrades and replacements: Encourage the upgrade or replacement of existing, older facilities to current safety and environmental standards where appropriate, support the decommissioning and redevelopment of existing, older facilities where current safety and environmental standards cannot be met and existing energy production could be replaced with renewable energy sources. Further, develop a cooperative working relationship with the utility and oil and gas industry, including workshops to provide information about the permitting process.

Consistency Analysis: Petroleum refining has been the primary land use at the subject property since 1955. During recent years, the SMF has been changed and modified, and upgraded to modernize the process and comply with changing environmental regulations. Significant upgrades included installing emission control devices like the tail gas unit, low nitrogen oxide burners, tank vapor recovery, and flare vapor recovery. The water treatment plant was also upgraded by installing a reverse osmosis system and replacing a water softener unit, which reduced water demand from the Refinery well water system. Also, changing the water effluent to a tankage system eliminated storing water in onsite surface impounds. The most recent upgrade, permanently shutting down the petroleum coke calciner in March 2007, decreased criteria and hazardous air pollutants in addition to reducing water usage.

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The Proposed Project's expansion relates to increased crude oil throughput by 10 percent and does not include any facility replacement, expansion or decommissioning. Therefore, the Proposed Project is consistent with this policy.

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Goal SL 1: Soils will be protected from wind and water erosion, particularly that caused by poor soil management practices.

Policy SL 1.2 Promote soil conservation practices in all land uses: Require erosion and sediment control practices during development or other soil-disturbing activities on steep slopes and ridgelines. These practices should disperse stormwater so that it infiltrates the soil rather than running off, and protect downslope areas from erosion.

Consistency Analysis: The Proposed Project would not involve soil movement or grading, and therefore would not result in exposure to or production of unstable earth conditions, result in soil erosion, topographic changes, loss of topsoil or unstable soil conditions. The Proposed Project would also not change rates of soil absorption, or the amount or direction of surface runoff or change the drainage patterns. Therefore, the Proposed Project is consistent with this policy.

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Goal WR 1: The County will have a reliable and secure regional water supply (IRWM).

Policy WR 1.14 Avoid net increase in water use: Avoid a net increase in non-agricultural water use in groundwater basins that are recommended or certified as Level of Severity II or III for water supply. Place limitations on further land divisions in these areas until plans are in place and funded to ensure that the safe yield will not be exceeded.

Consistency Analysis: The Santa Maria Facility obtains all of its water from on-site wells. Facility water usage is mainly used for cooling, boiler feed for steam production, and process use, such as coke drum cutting. The Santa Maria Facility currently uses less water than it has historically due to: (i) a recent water treatment plant upgraded that installed a reverse osmosis system and replaced a water softener unit, thereby reducing water demand from the Refinery well water system; and (ii) a March 2007 shutdown of the Carbon Plant that used water for cooling coke from the calcine process and green coke screening.

Prior to the calciner shutdown, the facility used approximately 459 million gallons of groundwater per year. Currently, usage is estimated to be 358 million gallons of groundwater per year. The proposed changes of increased crude feed and blending semi-refined crude oil into the crude feed would increase water use by approximately one percent, but would not increase water use above the 5-year baseline. Therefore, the Proposed Project is consistent with this policy.

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Goal WR 3: Excellent water quality will be maintained for the health of people and natural communities.

Policy WR 3.1 Prevent water pollution: Take actions to prevent water pollution, consistent with federal and state water policies and standards, including but not limited to the federal Clean Water Act, Safe Drinking Water Act, and National Pollutant Discharge Elimination System (NPDES).

Consistency Analysis: All water drainage, including storm run-off, is contained onsite. The Santa Maria Facility discharges water to the Pacific Ocean pursuant to waste discharge requirements in Regional Water Quality Control Board Order Number R3-2007-0002 (the Order), adopted on September 12, 2007. The Order serves as the permit under the National Pollutant Discharge Elimination System (NPDES). The SMF is currently in full compliance with the permit conditions. Accommodating the crude throughput increase would not require changes to the NPDES permit. Therefore, the Proposed Project is consistent with this policy.

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Goal WR 4: Per capita potable water use in the County will decline by 20 percent by 2020.

Policy WR 4.1 Reduce water use: Employ water conservation programs to achieve an overall 20% reduction in per capita residential and commercial water use in the unincorporated area by

2020. Continue to improve agricultural water use efficiency consistent with Policy AGP 10 in the Agricultural Element.

Consistency Analysis: The Santa Maria Facility obtains all of its water from on-site wells. Facility water usage is mainly used for cooling, boiler feed for steam production, and process use, such as coke drum cutting. The Santa Maria Facility currently uses less water than it has historically due to: (i) a recent water treatment plant upgraded that installed a reverse osmosis system and replaced a water softener unit, thereby reducing water demand from the Refinery well water system; and (ii) a March 2007 shutdown of the Carbon Plant that used water for cooling coke from the calcine process and green coke screening.

Prior to the calciner shutdown, the facility used approximately 459 million gallons of groundwater per year. Currently, usage is estimated to be 358 million gallons of groundwater per year. The proposed changes of increased crude feed and blending semi-refined crude oil into the crude feed would increase water use by approximately one percent, but would not increase water use above the 5-year baseline. Therefore, the Proposed Project is consistent with this policy.

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Policy WR 4.4 Reuse wastewater: The County will work with wastewater system operators to identify and implement programs for reuse of treated wastewater, particularly in landscaping, irrigation, parks, and public facilities.

Consistency Analysis: The Santa Maria Facility water treatment plant was recently upgraded by installing a reverse osmosis system and replacing a water softener unit, which reduced water demand from the Refinery well water system. All water drainage, including storm run-off, is contained on site. All process wastewater and contaminated storm water from the facility flow to a treatment system consisting of oil/water separators, dissolved air flotation, trickling filter, extended aeration, and secondary clarification. The treated wastewater is discharged to the Pacific Ocean through an outfall terminating 1,700 feet offshore and 27 feet deep. Section 4.7, Water Resources, contains mitigation in the event of severe drought that requires conservation and other measures to fully offset any potential increase in water usage by the Project. Therefore, the Proposed Project is consistent with this policy.

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Economic Element

Goal 1: Promote a strong and viable local economy by pursuing policies that balance economic, environmental, and social needs of the county.

Policy 1a: Pursue economic development activities that will benefit the economy while maintaining the quality of life.

Consistency Analysis: The Proposed Project contributes to the local economy by providing a much needed energy resource, as well as jobs. The Santa Maria Facility operations currently involve 95 employees and 65 contractors during the week and 40 employees on weekends. Typically 10 employees work at the facility during nighttime. Employment at the Santa Maria Facility allows employees and their families to maintain their quality of life, while at the same time reinvesting in the community through monetary circulation. Therefore, the Proposed Project is consistent with this policy.

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Policy 1i: Encourage businesses that promote the concept of sustainability.

Consistency Analysis: During recent years, the Santa Maria Facility has been changed and modified, and upgraded to modernize the process and comply with changing environmental regulations. Significant upgrades included installing emission control devices like the tail gas unit, low nitrogen oxide burners, tank vapor recovery, and flare vapor recovery. The water treatment plant was also upgraded by installing a reverse osmosis system and replacing a water softener unit, which reduced water demand from the Refinery well water system. Also, changing the water effluent to a tankage system eliminated storing water in onsite surface impounds. The most recent upgrade, permanently shutting down the petroleum coke calciner in March 2007, decreased criteria pollutants and reduced water usage. Therefore, the Proposed Project is consistent with this policy.

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Goal 2: Create a diverse economy

Policy 2a: In evaluating proposed plans and projects, consideration of potential economic benefits should be in balance with environmental and social considerations.

Consistency Analysis: The Proposed Project contributes to the local economy by providing a much needed energy resource, as well as jobs. These economic benefits are balanced with environmental and social considerations. Over the years, the Santa Maria Facility has consistently been changed, modified and upgraded to modernize the process and comply with changing environmental regulations. Further, the Proposed Project would not introduce any additional employees or substantial construction to the area and therefore, would not displace existing housing or people, require construction of replacement housing elsewhere or create the need for substantial new housing in the area. Therefore, the Proposed Project is consistent with this policy.

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Goal 3: Assure the provision of strategically-located opportunities for economic development.

Policy 3a: Encourage a pattern of commercial and/or industrial development that is consistent with the General Plan, convenient to patrons, realistically related to market demand and the needs of the community, and, when compatible, near areas designated for residential use.

Consistency Analysis: The Proposed Project is, in general, consistent with the General Plan and related to market demand as it provides a much needed energy resource, as well as jobs. Therefore, the Proposed Project is consistent with this policy.

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Noise Element

Goal 1: To protect the residents of San Luis Obispo County from the harmful and annoying effects of exposure to excessive noise.

Consistency Analysis: The EIR has identified noise mitigation for the Project to reduce impacts to less than significant levels. Implementation of these measures would minimize noise exposure and noise generation. Therefore, the Project does not conflict with this policy.

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Goal 3: To preserve the tranquility of residential areas by preventing the encroachment of noise-producing uses.

Consistency Analysis: The EIR has identified noise mitigation for the Project to reduce impacts to less than significant levels. Implementation of these measures would minimize noise exposure and noise generation. Therefore, the Project does[2] not conflict with this policy.

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Goal 5: To avoid or reduce noise impacts through site planning and project design, giving second preference to the use of noise barriers and/or structural modifications to buildings containing noise-sensitive land uses.

Consistency Analysis: The EIR has identified noise mitigation for the Project to reduce impacts to less than significant levels. Implementation of these measures would minimize noise exposure and noise generation. Therefore, the Project does[4] not conflict with this policy.

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Policy 3.3.1: The noise standards in this chapter represent maximum acceptable noise levels. New development should minimize noise exposure and noise generation.

Consistency Analysis: The EIR has identified noise mitigation for the Project to reduce impacts to less than significant levels. Implementation of these measures would minimize noise exposure and noise generation. Therefore, the Project does[6] not conflict with this policy.

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Policy 3.3.3: Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 3-1 within the outdoor activity areas are interior spaces of existing noise sensitive land uses.

Consistency Analysis: The EIR has identified noise mitigation for the Project to reduce impacts to less than significant levels. Implementation of these measures would minimize noise exposure and noise generation. Therefore, the Project does[8] not conflict with this policy.

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Policy 3.3.4: New development of noise-sensitive land uses shall not be permitted where the noise level due to existing stationary noise sources will exceed the noise level standards of Table 3-2, unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below the levels specified in Table 3-2.

Consistency Analysis: The EIR has identified noise mitigation for the Project to reduce impacts to less than significant levels. Implementation of these measures would minimize noise exposure and noise generation. Therefore, the Project does[10] not conflict with this policy.

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Policy 3.3.5: Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated … and shall be the responsibility of the developer of the stationary noise source.

Consistency Analysis: The EIR has identified noise mitigation for the Project to reduce impacts to less than significant levels. Implementation of these measures would minimize noise exposure and noise generation. Therefore, the Project does[12] not conflict with this policy.

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Policy 3.3.6: San Luis Obispo County shall consider implementing mitigation measures where existing noise levels produce significant noise impacts to noise-sensitive land uses or where new development may result in cumulative increases of noise upon noise-sensitive land uses.

Consistency Analysis: The EIR has identified noise mitigation for the Project to reduce impacts to less than significant levels. Implementation of these measures would minimize noise exposure and noise generation. Therefore, the Project does not conflict with this policy.

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Safety Element

Goal S-1: Attain a high level of emergency preparedness.

Policy S-1 Response: Support the response programs that provide emergency and other services to the public when a disaster occurs. The focus of response activities is saving lives and preventing injury, and reducing immediate property damage.

Consistency Analysis: The proposed throughput increase at the Santa Maria Facility would not increase fire risk and fire-fighting requirements. The Applicant proposes to utilize the existing fire protection system at the facility to provide a level of protection for the Proposed Project. However, a thorough audit of facility plans and current practices would help to ensure emergency readiness. Plans to be reviewed include Emergency Response Plans, Spill Prevention Plans and Oil Spill Response Plans, which may need to be updated to address the throughput increase and response actions due to the Proposed Project.

If an incident requires fire protection and emergency services, the closest fire stations to the Proposed Project Site are Fire Stations #22 and # 20. Fire Station #22 (Mesa Fire Station) is less than half-a-mile away, and is the jurisdictional station ("first in") for the Proposed Project Site. Fire Station #20 (Nipomo Fire Station) is approximately eight miles away and has an 8-minute response time. These response times comply with established significance criteria. According to CALFIRE, fire protection appears to be adequate for the existing area. Therefore, the Proposed Project is consistent with this policy.

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Policy S-2 Emergency Preparedness: Continue to improve preparedness programs that educate and organize people to respond appropriately to disasters. They include education and awareness programs for individuals, families, institutions, businesses, government agencies and other organizations.

Consistency Analysis: To provide a level of protection for the Proposed Project and the surrounding area, the Applicant proposes to utilize the facility's existing fire protection system, which includes Emergency Response Plans, Spill Prevention Plans and Oil Spill Response Plans. This continued effort will ensure the likelihood of an appropriate response to disasters. Therefore, the Proposed Project is consistent with this policy.

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Policy S-3 Coordination: Improve coordination among City, County and State programs, and among others working to reduce the risks of disasters. This should also include improved coordination with the news media. This will result in more effective preparedness, response and

recovery from disasters.

Consistency Analysis: To provide a level of protection for the Proposed Project and the surrounding area, the Applicant proposes to utilize the facility's existing fire protection system, which includes Emergency Response Plans, Spill Prevention Plans and Oil Spill Response Plans. Aspects of these plans include coordination with affected governmental agencies and the news media. These efforts will ensure the likelihood of an appropriate response to disasters. Therefore, the Proposed Project is consistent with this policy.

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Policy S-4 Information Systems and Research: Expand and keep current the database of safety related information. Knowledge about disasters and the area we live in is growing. New information must be made available to the public and decision makers. Regularly update the GIS data as new information becomes available.

Consistency Analysis: The Applicant maintains a database of safety-related plans, which are continually updated based on new information and regulations. The Applicant will continue to coordinate with the public and decision makers to ensure the safest working environment possible. Therefore, the Proposed Project is consistent with this policy.

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Policy S-5 Risk Assessment: Continue investigations that reduce or eliminate long term risks. Risk assessment activities, effectively carried out, can improve the efficiency and reduce the cost of response and recovery from disasters.

Consistency Analysis: The Applicant maintains a database of safety-related plans and emergency response plans, which are continually updated based on new information and regulations. The Applicant will continue to coordinate with the public and decision makers to ensure the safest working environment possible. Therefore, the Proposed Project is consistent with this policy.

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Goal S-4: Reduce the threat to life, structures and the environment caused by fire.

Policy S-14 Facilities, Equipment and Personnel: Ensure that adequate facilities, equipment and personnel are available to meet the demands of fire fighting in San Luis Obispo County based on the level of service set forth in the fire agency's master plan.

Consistency Analysis: The Applicant proposes to utilize the existing fire protection system at the facility to provide a level of protection for the Proposed Project. However, a thorough audit of facility plans and current practices would help to ensure emergency readiness. Plans to be reviewed include Emergency Response Plans, Spill Prevention Plans and Oil Spill Response Plans, which may need to be updated to address the throughput increase and response actions due to the Proposed Project.

If an incident requires fire protection and emergency services, the closest fire stations to the Proposed Project Site are Fire Stations #22 and # 20. Fire Station #22 (Mesa Fire Station) is less than half-a-mile away, and is the jurisdictional station ("first in") for the Proposed Project Site. Fire Station #20 (Nipomo Fire Station) is approximately eight miles away and has an 8-minute response time. These response times comply with established significance criteria. According to CALFIRE, fire protection appears to be adequate for the existing area. Therefore, the Proposed

Project is consistent with this policy.

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Policy S-15 Readiness and Response: The CDF/County Fire Department will maintain and improve its ability to respond and suppress fires throughout the County.

Consistency Analysis: If an incident at the Santa Maria Facility requires fire protection and emergency services, the closest fire stations to the Proposed Project Site are Fire Stations #22 and # 20. Fire Station #22 (Mesa Fire Station) is less than half-a-mile away, and is the jurisdictional station ("first in") for the Proposed Project Site. Fire Station #20 (Nipomo Fire Station) is approximately eight miles away and has an 8-minute response time. These response times comply with established significance criteria. According to CALFIRE, fire protection appears to be adequate for the existing area. Therefore, the Proposed Project is consistent with this policy.

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Policy S-16 Loss Prevention: Improve structures and other values at risk to reduce the impact of fire. Regulations should be developed to improve the defensible area surrounding habitation.

Consistency Analysis: The Applicant proposes to utilize the existing fire protection system at the facility to provide a level of protection for the Proposed Project. However, a thorough audit of facility plans and current practices would help to ensure emergency readiness. Plans to be reviewed include Emergency Response Plans, Spill Prevention Plans, Oil Spill Response Plans, and building safety-related plans, which may need to be updated to address the throughput increase and response actions due to the Proposed Project. Therefore, the Proposed Project is consistent with this policy.

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Goal S-5: Minimize the potential for loss of life and property resulting from geologic and seismic hazards.

Policy S-19 Reduce Seismic Hazards: The County will enforce applicable building codes relating to the seismic design of structures to reduce the potential for loss of life and reduce the amount of property damage.

Consistency Analysis: Although the Santa Maria Facility is not located in a California Department of Mines & Geology Earthquake Fault Zone, the facility meets applicable building and fire regulations. Compliance with applicable regulations will reduce the potential for loss of life and reduce the amount of property damage. Therefore, the Proposed Project is consistent with this policy.

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Policy S-20 Liquefaction and Seismic Settlement: The County will require design professionals to evaluate the potential for liquefaction or seismic settlement to impact structures in accordance with the currently adopted Uniform Building Code.

Consistency Analysis: Although the Santa Maria Facility is not located in a California Department of Mines & Geology Earthquake Fault Zone, the facility meets applicable building and fire regulations. Compliance with applicable regulations will reduce the potential for loss of life and reduce the amount of property damage. Further, the Proposed Project does not include any new building construction or redevelopment of existing structures. Therefore, the Proposed

Project is consistent with this policy.

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Goal S-6: Reduce the potential for harm to individuals and damage to the environment from aircraft hazards, radiation hazards, hazardous materials, electromagnetic fields, radon, and hazardous trees.

Policy S-26 Hazardous Materials: Reduce the potential for exposure to humans and the environment by hazardous substances.

Consistency Analysis: Santa Maria Facility procedures require that any spilled petroleum material be cleaned as soon as possible to minimize hydrocarbon emissions and odors, which can be harmful to humans and the environment. Clean-up materials are stored in closed containers in accordance with applicable regulations and disposed of as hazardous material in compliance with federal, state, and local regulations. The proposed change in crude throughput and semi-refined crude oil would not impact site contamination or the baseline.

Additionally, in accordance with the APCD Permit to Operate, metal surface coatings are not thinned or reduced with photochemically reactive solvents. Similarly, architectural coatings are not thinned or reduced with photochemically reactive solvents.

The Refinery processes oily waste onsite using the Mobile Oil Sludge Coking system. Oily waste from equipment and drain cleaning activities is sent off-site. These levels would not increase with the proposed throughput increase.

Therefore, the Proposed Project is consistent with this policy.

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4.5.5.2 San Luis Obispo County Local Coastal Program

In addition to those policies covered in the General Plan, the following sections of the Local Coastal Program would be applicable to the Proposed Project.

Energy and Industrial Development

Section 30262: Oil and gas development shall be permitted in accordance with Section 30260.

Consistency Analysis: Petroleum oil refining at the Santa Maria Facility has been active since 1955 and the facility currently operates in compliance with applicable regulatory standards and regulations. In addition, the Proposed Project would expand throughput within the existing site since alternative locations are not feasible. However, no construction or physical expansion of facilities would occur. Moreover, the Proposed Project mitigates adverse environmental effects to the maximum extent feasible. Therefore, the Proposed Project is consistent with this section.

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Section 30232: Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

Consistency Analysis: The proposed throughput increase at the Santa Maria Facility would not increase fire risk and fire-fighting requirements. The Applicant proposes to utilize the existing fire protection system at the facility to provide a level of protection for the Proposed Project. However, a thorough audit of facility plans and current practices would help to ensure emergency readiness. Plans to be reviewed include Emergency Response Plans, Spill Prevention Plans and Oil Spill Response Plans, which may need to be updated to address the throughput increase and response actions due to the Proposed Project.

Comment [e7]: This deals with spills not fires. This is not relevant in this section. 1

If an incident requires fire protection and emergency services, the closest fire stations to the Proposed Project Site are Fire Stations #22 and # 20. Fire Station #22 (Mesa Fire Station) is less than half-a-mile away, and is the jurisdictional station ("first in") for the Proposed Project Site. Fire Station #20 (Nipomo Fire Station) is approximately eight miles away and has an 8-minute response time. These response times comply with established significance criteria. According to CALFIRE, fire protection appears to be adequate for the existing area. Therefore, the Proposed Project is consistent with this section.

Comment [e8]: This deals with spills not fires. This is not relevant in this section. 2

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Section 30263: (a) New or expanded refineries or petrochemical facilities not otherwise consistent with the provisions of this division shall be permitted if: (1) alternative locations are not feasible or are more environmentally damaging; (2) adverse environmental effects are mitigated to the maximum extent feasible; (3) it is found that not permitting such development would adversely affect the public welfare; (4) the facility is not located in a highly scenic or seismically hazardous area, on any of the Channel Islands, or within or contiguous to environmentally sensitive areas; and, (5) the facility is sited so as to provide a sufficient buffer area to minimize adverse impacts on surrounding property.

Comment [F9]: Project does NOT involve new or expanded refineries. Merely a throughput increase, no expansion or construction. Don't believe this is appropriate. 5

Consistency Analysis: The Santa Maria Facility is an existing operational refinery. In accordance with issue area analyses in this EIR and the respective mitigation measures, the Santa Maria Facility strives to mitigate the environmental effects to the maximum extent feasible. The Santa Maria Facility delivers an established economic benefit by providing a much needed energy resource, as well as jobs to the local area. The facility is not located in a highly scenic area nor is it located in a California Department of Mines & Geology Earthquake Fault Zone. The existing facility does not and will not adversely impact surrounding properties. Therefore, the Proposed Project is consistent with this section.

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Section 30263: (b) In addition to meeting all applicable air quality standards, new or expanded refineries or petrochemical facilities shall be permitted in areas designated as air quality maintenance areas by the State Air Resources Board and in areas where coastal resources would be adversely affected only if the negative impacts of the project upon air quality are offset by reductions in gaseous emissions in the area by the users of the fuels, or, in the case of an expansion of an existing site, total site emission levels, and site levels for each emission type for which national or state ambient air quality standards have been established do not increase.

Consistency Analysis: Emissions analyzed in the Air Quality Section of this document for mobile sources were found to be less than significant with mitigation and as such are is consistent with this Policy.

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Section 30263: (c) New or expanded refineries or petrochemical facilities shall minimize the need for once-through cooling by using air cooling to the maximum extent feasible and by using treated waste waters from inplant processes where feasible.

Consistency Analysis: The Santa Maria Facility obtains all of its water from on-site wells. SMF water usage is mainly used for cooling, boiler feed for steam production, and process use, such as coke drum cutting. The water treatment plant was recently upgraded by installing a reverse osmosis system and replacing a water softener unit, which reduced water demand from the Refinery well water system.

Comment [e10]: This section is for new or expanding refineries. This project is not for a new or expanding refinery. It is a project for an existing refinery to operate at a higher flow rate. 1

All water drainage, including storm run-off, is contained on site. The Santa Maria Facility (SMF) discharges water to the Pacific Ocean pursuant to waste discharge requirements in Regional Water Quality Control Board Order Number R3-2007-0002, adopted September 7, 2007. The Order serves as the permit under the National Pollutant Discharge Elimination System (NPDES).

All process wastewater and contaminated storm water from the facility flow to a treatment system consisting of oil/water separators, dissolved air flotation, trickling filter, extended aeration, and secondary clarification. The treated wastewater is discharged to the Pacific Ocean through an outfall terminating 1,700 feet offshore and 27 feet deep. Therefore, the Proposed Project is consistent with this policy.

Comment [e11]: This information is not relevant. There are no changes being made to the cooling water system. 2

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Policy 1A: New Facilities and Expansion of Existing Sites

Section 1. No permit, entitlement, lease, or other authorization of any kind within the County of San Luis Obispo which would authorize or allow the development, construction, installation, or expansion of any onshore support facility for offshore oil and gas activity shall be final unless such authorization is approved by a majority of the votes cast by a vote of the people of the County of San Luis Obispo in general or special election. For the purpose of this ordinance, the term "onshore support facility" means any land use, installation, or activity required to support the exploration, development, production, storage, processing, transportation, or related activities of offshore energy resources.

Consistency Analysis: The Santa Maria Facility has historically processed offshore crude from the Outer Continental Shelf (OCS) and Point Pedernales, as well as crude from onshore sources.

ConocoPhillips purchases its OCS and Point Pedernales crude on the open market and it does not own or operate any offshore production facility off of California. Theoretically, if ConocoPhillips were to stop purchasing OCS and Point Pedernales crude, then that same crude would instead be purchased by and processed at another refinery. Refineries in the Los Angeles area receive OCS and Point Pedernales crude through the Plains-All American Pipeline.

Because there are multiple refineries that purchase and process OCS and Point Pedernales crude, it is possible to conclude that the Santa Maria Refinery is not required in order to support offshore energy resources and, therefore, is not subject to this policy.

Comment [k12]: Please see cover letted dated Oct. 31, 2011 for comments 5

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Policy 24: Requirement for Petroleum Transportation

Offshore oil shall be transported to refining centers by pipeline, where feasible, rather than by petroleum tankers to minimize increased air pollutant emissions and the increased probability of oil spills.

Proposals for expanding, modifying or constructing new oil processing facilities shall be conditioned to require shipment of oil by pipeline when constructed, unless such transport would not be feasible for a particular operation as determined by the Pipeline Working Group (PWG), the operator and the county.

Consistency Analysis: The Santa Maria Facility receives all crude oil for processing by pipeline from various sources, including the Outer Continental Shelf (69%), Point Pedernales (18%), Orcutt (6%), and truck deliveries to the Santa Maria Pump Station (7%). Therefore, the Proposed Project would be consistent with this policy.

Policy 25: Air Pollution Standards

Any expansion or modification of existing petroleum processing or transportation facilities or the construction of new facilities shall meet San Luis Obispo County Air Pollution Control District (APCD) standards. As a condition of approval, the APCD Officer may:

(a) Require an air pollutant emission/oil throughput limitation by which allowable oil throughput through the facility is based upon the amount of air pollutant emissions.

(b) Set limits on the timing of loading operations when projected oxidant levels exceed designated levels.

(c) Require establishment of an ambient air monitoring system in a manner approved by the APCD to continuously monitor pollutants and record wind speed and direction.

Consistency Analysis: Through this environmental document and its analysis the Refinery Throughput Increase would result in some emissions from the Refinery that can be offset through mitigation included in this document. Emissions from offsite mobile sources would increase, resulting in a significant impact that could be found to be potentially inconsistent with this policy.

Environmentally Sensitive Habitats

Policy 3: Habitat Restoration

The County or the Coastal Commission should require the restoration of damaged habitats as a condition of approval when feasible. Policy 11 discusses detailed wetlands restoration criteria . Consistency Analysis: The Proposed Project would not be expected to cause any impacts to native species and habitat diversity, or to introduce barriers to the movement of resident or migratory fish or wildlife species, or hinder the normal activities of wildlife. Therefore, the Proposed Project is consistent with this policy.

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Public Works

Policy 1: Availability of Service Capacity

New development (including divisions of land) shall demonstrate that adequate public or private service capacities are available to serve the proposed development. Priority shall be given to infilling within existing subdivided areas. Prior to permitting all new development, a finding shall be made that there are sufficient services to serve the proposed development given the already outstanding commitment to existing lots within the urban service line for which services will be needed consistent with the Resource Management System where applicable. Permitted development outside the USL shall be allowed only if:

(a) It can be serviced by adequate private on-site water and waste disposal systems; and

(b) The proposed development reflects that it is an environmentally preferable alternative.

The applicant shall assume responsibility in accordance with county ordinances or the rules and regulations of the applicable service district or other providers of services for costs of service extensions or improvements that are required as a result of the project. Lack of proper arrangements for guaranteeing service is grounds for denial of the project or reduction of the density that could otherwise be approved consistent with available resources.

Consistency Analysis: The Santa Maria Facility obtains all of its water from on-site wells. SMF water usage is mainly used for cooling, boiler feed for steam production, and process use, such as coke drum cutting. The water treatment plant was recently upgraded by installing a reverse osmosis system and replacing a water softener unit, which reduced water demand from the Refinery well water system.

All water drainage, including storm run-off, is contained on site. The Santa Maria Facility (SMF) discharges water to the Pacific Ocean pursuant to waste discharge requirements in Regional Water Quality Control Board Order Number R3-2007-0002, adopted September 7, 2007. The Order serves as the permit under the National Pollutant Discharge Elimination System (NPDES).

All process wastewater and contaminated storm water from the facility flow to a treatment system consisting of oil/water separators, dissolved air flotation, trickling filter, extended aeration, and secondary clarification. The treated wastewater is discharged to the Pacific Ocean through an outfall terminating 1,700 feet offshore and 27 feet deep. Therefore, the Proposed Project is consistent with this policy.

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Coastal Watersheds

Policy 1: Preservation of Groundwater Basins

The long-term integrity of groundwater basins within the coastal zone shall be protected. The safe yield of the groundwater basin, including return and retained water, shall not be exceeded except as part of a conjunctive use or resource management program which assures that the biological productivity of aquatic habitats are not significantly adversely impacted.

Consistency Analysis: The Santa Maria Facility obtains all of its water from on-site wells. SMF

water usage is mainly used for cooling, boiler feed for steam production, and process use, such as coke drum cutting. The water treatment plant was recently upgraded by installing a reverse osmosis system and replacing a water softener unit, which reduced water demand from the Refinery well water system.

All water drainage, including storm run-off, is contained on site. The Santa Maria Facility (SMF) discharges water to the Pacific Ocean pursuant to waste discharge requirements in Regional Water Quality Control Board Order Number R3-2007-0002, adopted September 7, 2007. The Order serves as the permit under the National Pollutant Discharge Elimination System (NPDES).

All process wastewater and contaminated storm water from the facility flow to a treatment system consisting of oil/water separators, dissolved air flotation, trickling filter, extended aeration, and secondary clarification. The treated wastewater is discharged to the Pacific Ocean through an outfall terminating 1,700 feet offshore and 27 feet deep. Therefore, the Proposed Project is consistent with this policy.

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Visual and Scenic Resources

Section 30251. The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

Consistency Analysis: The Proposed Project would not be expected to cause any impacts to visual or scenic resources. Therefore, the Proposed Project is consistent with this policy.

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Policy 1: Unique and attractive features of the landscape, including but not limited to unusual landforms, scenic vistas and sensitive habitats are to be preserved protected, and in visually degraded areas restored where feasible.

Consistency Analysis: The Proposed Project would not be expected to cause any impacts to unusual landforms, scenic vistas, or sensitive habitats. Therefore, the Proposed Project is consistent with this policy.

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Hazards

Section 30253: (Portion) New development – (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard:

Consistency Analysis: The Applicant proposes to utilize the existing fire protection system at the facility to provide a level of protection for the Proposed Project. However, a thorough audit of facility plans and current practices would help to ensure emergency readiness. Plans to be reviewed include Emergency Response Plans, Spill Prevention Plans and Oil Spill Response

Comment [e13]: This section is for new development . This does not apply. 10

Plans, which may need to be updated to address the throughput increase and response actions due to the Proposed Project.

If an incident requires fire protection and emergency services, the closest fire stations to the Proposed Project Site are Fire Stations #22 and # 20. Fire Station #22 (Mesa Fire Station) is less than half-a-mile away, and is the jurisdictional station ("first in") for the Proposed Project Site. Fire Station #20 (Nipomo Fire Station) is approximately eight miles away and has an 8-minute response time. These response times comply with established significance criteria. According to CALFIRE, fire protection appears to be adequate for the existing area.

The Santa Maria Refinery is not located in a flood hazard zone, as per County maps, and is not located in a California Department of Mines & Geology Earthquake Fault Zone. Therefore, the Proposed Project is consistent with this policy.

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Section 30253: (Portion) New development – (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Consistency Analysis: Petroleum oil refining at the Santa Maria Facility has been active since 1955 and the facility currently operates in compliance with applicable regulatory standards and regulations, including building and design codes. The Proposed Project does not include plans for any new building construction or redevelopment of existing structures that may warrant protective devices that would substantially alter natural landforms along bluff and cliffs. Therefore, the Proposed Project is consistent with this section.

Comment [e14]: This section is for new development. This does not apply 4

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Policy 9: High Fire Risk Areas

Fire hazard areas shall be defined as those having potential for catastrophic fire. The county shall designate and show on the Hazards maps those high-risk fire areas as delineated by the State Division of Forestry.

New residential development in high-risk fire areas shall be required to be reviewed and conditioned by the Fire Warden to ensure that building materials, access, brush clearings and water storage capacity are adequate for fire flow and fire protection purposes.

Consistency Analysis: The Proposed Project is within a Local Responsibility Area in a High Fire Hazard Zone. The Applicant proposes to utilize the existing fire protection system at the facility to provide a level of protection for the Proposed Project. However, a thorough audit of facility plans and current practices would help to ensure emergency readiness. Plans to be reviewed include Emergency Response Plans, Spill Prevention Plans and Oil Spill Response Plans, which may need to be updated to address the throughput increase and response actions due to the Proposed Project.

Comment [e15]: This is for "new residential development" this does not apply at a refinery. 7

If an incident requires fire protection and emergency services, the closest fire stations to the Proposed Project Site are Fire Stations #22 and # 20. Fire Station #22 (Mesa Fire Station) is less

than 0.5 miles away, and is the jurisdictional station ("first in") for the Proposed Project Site. Fire Station #20 (Nipomo Fire Station) is approximately 8 miles away and has an 8-minute response time. These response times comply with established significance criteria. According to CALFIRE, fire protection appears to be adequate for the existing area. Therefore, the Proposed Project is consistent with this policy.

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Air Quality

Policy 1: Air Quality

The county will provide adequate administration and enforcement of air quality programs and regulations to be consistent with the county's Air Pollution Control District and the State Air Resources Control Board.

Consistency Analysis: The APCD is the Co-Lead Agency for this Project and this EIR and as such it provides oversight to the Air Quality programs consistent with this policy.

4.5.5.3 South County Coastal Area Plan

The South County Coastal Area Plan identifies the following standards pertaining to the Proposed Project.

Permit Requirements: Any proposed modification or expansion of the existing refinery or coke oven or the construction of partial oil and gas processing facilities to service off-shore derived oil and gas that involves land area beyond that presently developed requires Development Plan approval.

Consistency Analysis: The Proposed Project does not include plans for any new building construction or redevelopment of existing structures, but it is subject to Development Plan approval per conditions of approval associated with Development Plan D890530P and Development Plan D890287D. Therefore, the Proposed Project is consistent with this requirement.

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Limitation on Use: All uses are prohibited except petroleum refining and related industries (including partial oil and gas processing and related industries); coastal access ways; water wells and impoundments; and pipelines and power transmissions. No off-road vehicular use is permitted other than for management of the industrial and natural areas.

Consistency Analysis: Petroleum oil refining at the Santa Maria Facility has been active since 1955 and the facility currently operates in compliance with applicable regulatory standards and regulations, including building and design codes. The Proposed Project will continue these operations by increasing the permitted volume of processed crude oil and processing previously refined gas/oil petroleum liquid under the definition of crude oil. Therefore, the Proposed Project is consistent with this limitation on use.

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Site Location: Site location shall minimize impacts to identified rare and endangered plant species and be located to provide a buffer from exposed dune areas on site. A qualified biologist

shall survey the site and make recommendations on siting alternatives and appropriate mitigation.

Consistency Analysis: The Santa Maria Facility is an existing operational refinery. In accordance with the analysis and respective mitigation measures in Section 4.9 Biological Resources, the Santa Maria Facility strives to mitigate the environmental impacts to identified rare and endangered plant species to the maximum extent feasible. These measures take into account the proximity from the Santa Maria Facility to the open space and recreational land use (Pismo Dunes State Vehicular Recreational Area) to the west, which are buffered by the railroad. Therefore, the existing facility does not and will not adversely impact surrounding properties. Therefore, the Proposed Project may be consistent with this section.

Comment [e16]: There is no change in site and no construction. Site location is not changing therefore this does not apply. 1

Buffer Zones: No facilities shall be located in the area west of the railroad, which shall serve as a protective, natural buffer separating the heavy industrial use from the recreational activities within the dunes. This buffer area shall be managed cooperatively between the property owners and the California Department of Parks and Recreation to encourage dune revegetation and stabilization within the buffer area. A buffer area shall be required to reduce impacts to the nearby residential areas.

Consistency Analysis: The Santa Maria Facility is an existing operational refinery located east of the Pismo Dunes State Vehicular Recreational Area and buffered by the railroad. Therefore, the existing facility does not and will not adversely impact the dunes. Therefore, the Proposed Project is consistent with this section.

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Air Pollutions Standards: Any expansion or modification of existing petroleum processing or transportation facilities or the construction of new facilities shall meet San Luis Obispo County Air Pollution District (APCD) standards.

Consistency Analysis: The Proposed Project will comply with all APCD permit requirements associated with the Refinery consistent with this policy.

4.5.6 Cumulative Impacts and Mitigation Measures

Projects that could create cumulative land use impacts are those that would contribute to an incompatibility with the land uses in the vicinity of the Santa Maria Facility. None of the proposed residential, commercial, industrial or institutional projects listed in Section 3.0, Cumulative Projects Description, would be incompatible in scale, use, or characteristics with the Proposed Project. Therefore, cumulative land use impacts are expected to be less than significant.

4.6 Transportation and Circulation

This section discusses the road transportation system in the vicinity of the Proposed Project and the impacts of the Proposed Project and alternatives on the transportation system. The analysis in this section is based on available transportation studies, California Department of Transportation (Caltrans) and San Luis Obispo County traffic data, computer modeling of roadway and intersections, local and regional maps, and discussions with appropriate agencies.

4.6.1 Environmental Setting

4.6.1.1 Background

The ConocoPhillips Santa Maria Facility (SMF) has been a petroleum oil refinery since its construction in 1955. The SMF is linked to the San Francisco-area Rodeo Refinery by a 200-mile pipeline through which semi-refined liquid products are transferred for upgrading into finished petroleum products. The SMF also produces solid petroleum coke that leaves the Refinery by rail or haul truck and recovered sulfur that is transported by haul truck.

In recent years, the SMF has made significant upgrades to include the installation of emission control devices, a reverse osmosis system, a new water softener unit, changing the water effluent to a tankage system, and eliminating the petroleum coke calciner.

The SMF is currently surrounded by industrial, recreational, agricultural, residential, and open space land uses. Except when shut down for maintenance, the SMF operates 24 hours per day, 365 days per year.

4.6.1.2 Methods of Describing Traffic

Transportation conditions are often described in terms of levels of service (LOS). LOS describes the existing volume of traffic on a roadway compared to the design capacity of the roadway. The design capacity of a roadway or intersection is defined as the maximum rate of vehicle travel (e.g., vehicles per hour) that can reasonably be expected along a section of roadway or through an intersection. Capacity depends on several variables, including road classification and number of lanes, location and presence of turning lanes, signal timing, road condition, terrain, weather, and driver characteristics. LOS is generally a function of the ratio of traffic volume to the capacity of the roadway or intersection or the delays associated with an intersection. The LOS ratings also use qualitative measures that characterize operational conditions within a traffic stream and their perception by motorists. These measures include freedom of movement, speed and travel time, traffic interruptions, types of vehicles, comfort, and convenience.

Trucks and intersections also affect LOS classifications. Trucks and other large, heavy vehicles or slower moving vehicles affect LOS because they occupy more roadway space and have reduced operating qualities compared to passenger cars. Since heavy vehicles accelerate slower than passenger cars, gaps form in traffic flows that affect the efficiency of the roadway.

Intersections present a number of variables that can influence LOS, including curb parking,

transit buses, turn lanes, signal spacing, pedestrians, stop sign arrangements, and signal timing.

The Highway Capacity Manual is widely used in traffic studies for predicting LOS for a range of roadways and intersections (TRB 2000). The Highway Capacity Manual establishes LOS classifications depending on roadway volume to capacity (V/C) ratios for different types of roadways and the volume to capacity ratio and delay at intersections. The Highway Capacity Manual is codified into software, the Highway Capacity Software by the Transportation Research Board. Highway Capacity Software was utilized in this analysis to assess project-related traffic inputs.

The LOS of a roadway or intersection is described on a scale from A to F, with A indicating excellent traffic flow quality and F indicating forced flow conditions and very slow speeds. Level E is normally the maximum design capacity that a roadway or intersection can accommodate. LOS A, B, and C are generally satisfactory. LOS D is tolerable in urban areas during peak hours due to the high cost of improving roadways to LOS C. Caltrans recommends providing a target LOS between LOS C and LOS D on state highway facilities (Caltrans 2002). San Luis Obispo County's current California Environmental Quality Act (CEQA) traffic impact thresholds consider LOS C acceptable for County rural roads in the Proposed Project area. Table 4.6-1 identifies LOS definitions and roadway volume to capacity ratios for different road types.

Analyzing intersections is more complicated than analyzing roadways. Intersections with stop signs involve analysis of conflicting traffic, vehicle gaps, vehicle movement priorities, shared lane capacities, and pedestrian influences. The approach detailed in the Highway Capacity Manual and codified in the Highway Capacity Software utilizes a probability approach to determine when gaps are available in traffic. The result is a volume to capacity ratio and a delay, both of which are used to determine LOS. Delay is the amount of time, in seconds, between when a vehicle stops at the end of the intersection queue and when the vehicle first enters the intersection. The distance between intersections is a complicating factor, among others. When two intersections are close together, the Highway Capacity Manual analysis approach is more uncertain. Table 4.6-1 also shows intersection LOS, volume to capacity ratio, and delay.

Determining a roadway's potential to present a traffic flow problem is a complicated process; therefore, a screening approach is often utilized. The screening approach involves comparing the roadway class with a traffic volume level for each LOS. The screening levels are developed by making generic assumptions for the data input in the Highway Capacity Manual calculations. The screening approach is only used for roadways and not for intersections.

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Table 4.6-1 Level of Service and Volume to Capacity Ratio Parameters

LOS	Traffic Conditions	Roadway Volume to Capacity Ratio				Intersection	
		Multi-Lane Freeway[a]	2-Lane Highway[b]	Arterial	Intersect	Volume to Capacity Ratio	Delay(s)
A	Free-flow conditions with unimpeded maneuverability. Stopped delay at signalized intersections is minimal.	0.30	0.15 - 0.26	0.00 - 0.60	<0.60	0 -0.6	< 10
B	In the range of stable flow, but the presence of other users in the traffic streams begins to be noticeable.	0.50	0.27 - 0.42	0.61 - 0.70	0.60 - 0.69	0.61 - 0.70	< 15
C	In the range of stable flow, but marks the beginning of the flow in which the operation of individual users becomes significantly affected by intersections with others in the traffic stream.	0.71	0.43 - 0.63	0.71 - 0.80	0.70 - 0.79	0.71 - 0.80	< 25
D	High-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a poor level of comfort.	0.89	0.64 - 0.99	0.81 - 0.90	0.80 - 0.89	0.81 - 0.90	< 35
E	Near capacity. Operations with significant delays and low average speeds.	1.00	> 1.00	0.91 - 1.00	0.90 - 0.99	0.91 - 1.00	< 50
F	Forced or breakdown flow. Operations with extremely low speeds, high delay.	—	—	> 1.00	> 1.00	> 1.00	> 50

[a] Volume to capacity ratio for level terrain when passing is allowed
[b] Volume to capacity ratio for vehicle speed of 65 miles per hour (mph)
Source: TRB 2000, Caltrans 2002, San Luis Obispo County 2009

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Table 4.6-2 shows the screening traffic volume levels for determination of LOS for roadways. Caltrans develops its own screening criteria for determining LOS on the roadways under Caltrans jurisdiction. Some factors that affect these capacities are intersections (in the case of surface roadways), degrees of access control, roadway grades, design geometries (horizontal and vertical alignment standards), sight distance, levels of truck and bus traffic, and levels of pedestrian and bicycle traffic.

Table 4.6-2 LOS Screening Classifications and Roadway Daily Volumes

Roadway Class	Number of Lanes	LOS Classes				
		A	B	C	D	E
Santa Barbara County						
Freeway	6	44,000	74,400	88,800	99,900	111,000
Freeway	4	29,600	49,600	59,200	66,600	74,000
Arterial	4	23,900	27,900	31,900	35,900	39,900
Arterial	2	12,000	14,000	16,000	18,000	20,000
Major	4	19,200	22,300	25,500	28,700	31,900
Major	2	9,600	11,200	12,800	14,400	16,000
Collector	2	7,100	8,200	9,400	10,600	11,800
Caltrans						
Freeway	per lane per hour	710	1,170	1,680	2,090	2,350

Sources: TRB 2000; Santa Barbara County 1996

4.6.1.3 Existing Conditions

SMF traffic traveling northbound from the Project Site uses the following route: State Route 1 (Willow Road which turns into Mesa View Drive into Cienaga Street) north to S. Halcyon Road; S. Halcyon Road, which turns into N. Halcyon Road, to E. Grand Avenue; east on E. Grand Avenue to the U.S. Highway 101 northbound ramp. This route is referred to as the Northbound Route. State Route 1 intersects twice with S. Halcyon Road. The southern segment of S. Halcyon Drive that is south of Arroyo Grande Creek prohibits truck traffic due to a significant grade up to the Nipomo Mesa (SLOC 2006).

SMF traffic traveling eastbound to State Route 166 from the Project Site uses the following route: State Route 1 (Willow Road) east to Willow Road (local); east on Willow Road to Pomeroy Road; south on Pomeroy Road to W. Tefft Street; east on W. Tefft Street to U.S. Highway 101 southbound ramp; south on U.S. Highway 101 to State Route 166 interchange; east on State Route 166. This route is referred to as the Eastbound Route.

SMF traffic traveling southbound toward Santa Barbara County from the Project Site uses the following route: State Route 1 (Willow Road/Guadalupe Road) east and then south to State Route 166; east on State Route 166 (Main Street in Santa Maria) to U.S. Highway 101 southbound Ramp at Bradley Road. This route is referred to as the Southbound Route.

Figure 4.6-1 shows the three traffic routes for the Proposed Project. The following subsections

discuss relevant roadways.

State Route 1 from the SMF entrance north to Halcyon Road is primarily a north-south, two-lane arterial; portions of the roadway have a median turning lane near certain intersections. State Route 1 from the SMF entrance east to Willow Road (local) is an east-west, two-lane arterial. State Route 1 south of Willow Road is a north-south, two-lane arterial. Stretching from Willow Road south to W. Clark Avenue, State Route 1 is locally known as Guadalupe Road. It becomes Cabrillo Highway south of the town of Guadalupe and Casmalia Road south of Black Road.

Halcyon Road is a county-managed, north-south, two-lane collector road with access from the Project Site via State Route 1 (Mesa View Drive). The intersection at S. Halcyon Road and State Route 1 is controlled by a four-way traffic signal.

Grand Avenue is an Arroyo Grande-managed, east-west, four-lane arterial with access from the Project Site via N. Halcyon Road. The intersection at Grand Avenue and N. Halcyon Road is controlled by a four-way traffic signal. The intersection at Grand Avenue and the U.S. Highway 101 northbound on-ramp is controlled by a four-way traffic signal.

El Camino Real is an east-west, four to five-lane arterial with access from the Project Site via N. Halcyon Road. The intersection at El Camino Road and N. Halcyon Road is controlled by a four-way traffic signal. El Camino Real provides access to U.S. Highway 101 southbound.

Brisco Road is a north-south, three-lane collector road with access from the Project Site via El Camino Real. The intersection at Brisco Road and El Camino Real is controlled by a four-way traffic signal. Brisco Road provides access to U.S. Highway 101 northbound.

Willow Road is a county-managed, east-west, two-lane minor arterial with access from the Project Site via State Route 1. The intersection at Willow Road and State Route 1 is controlled by a stop sign on Willow Road. Eastbound Willow Road ends at Pomeroy Road.

Pomeroy Road is a county-managed, north-south, two-lane collector road with access from the Project Site via Willow Road. The intersection at Pomeroy Road and Willow Road is controlled by a stop sign on Willow Road.

W. Tefft Street is a county-managed, east-west, five-lane (shared median) arterial with access from the Project Site via Pomeroy Road. The intersection at W. Tefft Street and Pomeroy Road is controlled by a three-way traffic signal. W. Tefft Street provides access to U.S. Highway 101.

State Route 166 is an east-west, two- to four-lane arterial that stretches between the towns of Guadalupe, Santa Barbara County, and Mettler, Kern County, where it connects with Interstate 5. State Route 1 and U.S. Highway 101 provide separate access from the Project Site to State Route 166.

Clark Avenue is and east-west arterial with access from the Project Site via State Route 1 (Casmalia Road). Clark Avenue is a two-lane road between State Route 1 (Casmalia Road) and N. Broadway Street. Clark Avenue is a four-lane road between N. Broadway Street and Stillwell

Road. Clark Avenue is a three-lane road between Stillwell Road and U.S. Highway 101. The intersection at State Route 1 (Casmalia Road) and Clark Avenue is controlled by a two-way stop sign on Clark Avenue. Clark Avenue provides access to U.S. Highway 101.

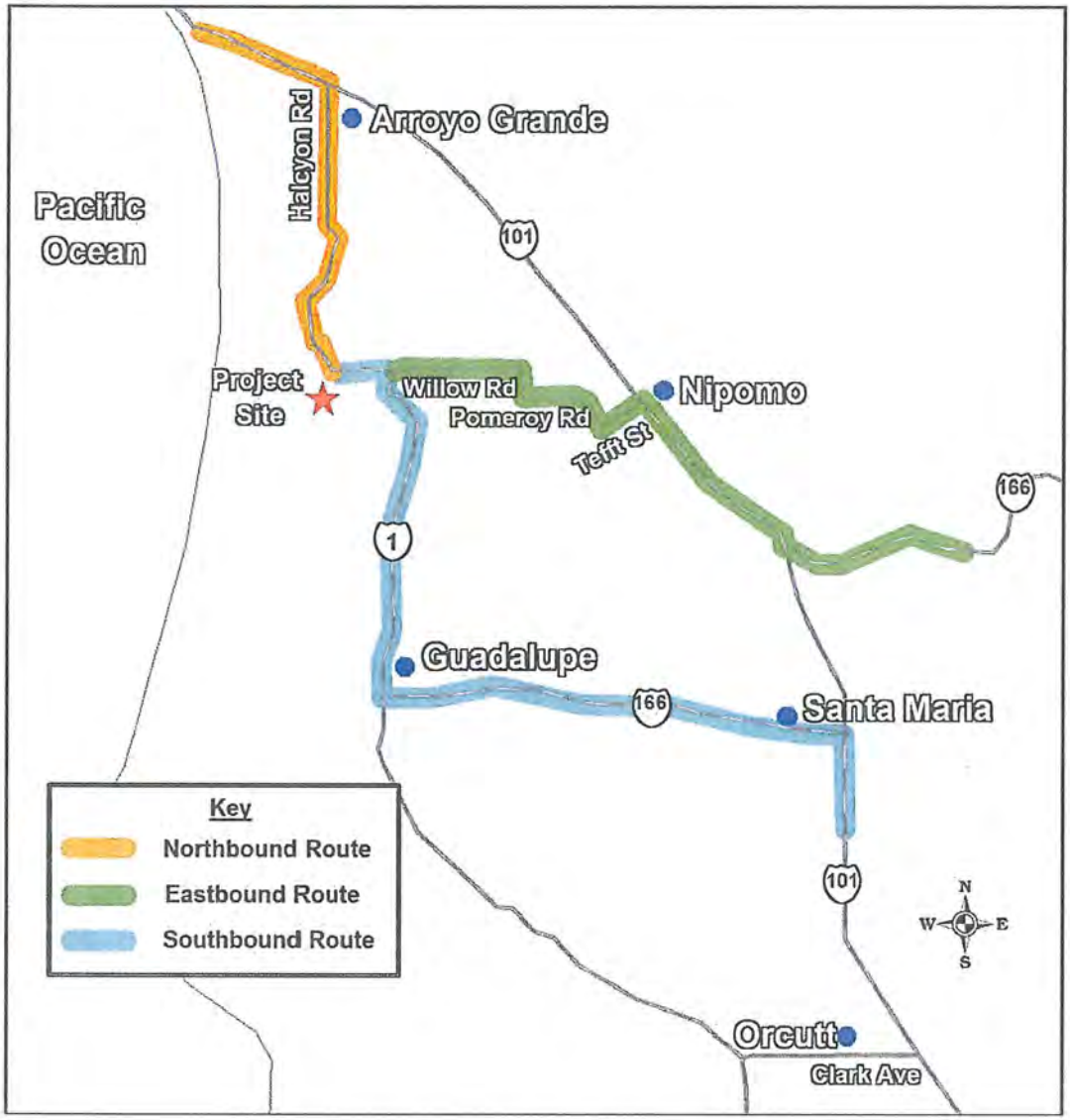
Highway 101 is a four- to six-lane highway that extends along the Pacific Coast between Los Angeles and San Francisco. The Brisco Road interchange (Exit 187) on Brisco Road provides access to U.S. Highway 101 from the Project Site for northbound traffic. The Tefft Street interchange (Exit 179) on W. Tefft Street provides access to U.S. Highway 101 from the Project Site for southbound traffic destined for State Route 166. The Exit 175 interchange on Highway 101 provides access to eastbound State Route 166. The Clark Avenue interchange (Exit 164) on E. Clark Avenue provides access to U.S. Highway 101 from the Project Site for southbound traffic into Santa Barbara County.

4.6.1.4 Project Area Overview

Existing Roadway Performance

Access to the SMF is via State Route 1, which is also called Mesa View Drive north of the SMF entrance and is called Willow Road east of the SMF entrance. Access to the freeway system from the SMF depends on whether the intended direction is north, east or south. Northbound traffic takes State Route 1 to Halcyon Road to E. Grand Avenue to U.S. Highway 101. Eastbound traffic takes State Route 1 to Willow Road (local) to Pomeroy Road to Tefft Street to U.S. Highway 101 to State Route 166. Southbound traffic takes State Route 1 to State Route 166 to U.S. Highway 101 at Bradley Road. Currently, the SMF personnel generate approximately 160 roundtrips (320 one-way trips) per day. The SMF normal operations generate approximately five truck roundtrips (10 one-way trips) per day, not including green coke and sulfur-related trips. In 2009, the SMF had approximately 15,009 truck trips (roundtrip) related to green coke and sulfur, which is approximately 41 trucks per day, or 82 one-way truck trips per day. In total, the SMF generates approximately 206 vehicle roundtrips per day or 412 one-way vehicle trips per day.

Figure 4.6-1 Traffic Routes



Recent information on roadway traffic volumes along the three traffic routes is available from Caltrans, San Luis Obispo County, and Santa Barbara County. Using Santa Barbara County thresholds, the traffic on each of the three routes generally operates at LOS A with two applicable segments of U.S. Highway 101 operating at LOC C and one segment on Pomeroy Road operating at LOS D (see Table 4.6-3).

Table 4.6-3 Existing Traffic for Project-Related Roadway Segments

Roadway	Capacity[a]	AADT	LOS
Northbound Route			
State Route 1 at SMF entrance	12,000 – 16,000 ADT	6,000	A
State Route 1 between Halcyon Road and Valley Road	12,000 – 16,000 ADT	5,186[e]	A
State Route 1 between Valley Road and Halcyon Road-South	12,000 – 16,000 ADT	4,190[e]	A
State Route 1 south of Halcyon Road-South	12,000 – 16,000 ADT	10,151[e]	A
Halcyon Road north of State Route 1	7,100 – 9,400 ADT	8,106[e]	B
U.S. Highway 101 at State Route 227 (Grand Avenue)	29,600 – 59,200 ADT	53,000	C
Eastbound Route			
State Route 1 at SMF entrance	12,000 – 16,000 ADT	6,000	A
Willow Road east of State Route 1	12,000 – 16,000 ADT	3,817[e]	A
Willow Road west of Pomeroy Road	12,000 – 16,000 ADT	4,304[e]	A
Pomeroy Road east of Olympic Way	7,100 – 9,400 ADT	6,388[e]	A
Pomeroy Road north of Sandydale Drive	7,100 – 9,400 ADT	11,040[e]	D
Pomeroy Road north of Tefft Street	7,100 – 9,400 ADT	9,240[e]	A
Tefft Street west of Mary Avenue	23,900 – 31,900[b] ADT	19,159[e]	A
Tefft Street west of U.S. Highway 101	23,900 – 31,900[b] ADT	21,024[e]	A
U.S. Highway 101 at Tefft Street Interchange	29,600 – 59,200 ADT	53,000	C
U.S. Highway 101 at Junction Route 166 East	29,600 – 59,200 ADT	56,000	C
Southbound Route			
State Route 1 at SMF entrance	12,000 – 16,000 ADT	6,000	A
State Route 1 at Oso Flaco Underpass	12,000 – 16,000 ADT	5,000	A
State Route 1 at Santa Barbara/San Luis Obispo County Line	12,000 – 16,000 ADT	5,000	A
State Route 1 at Guadalupe North City Limits	12,000 – 16,000 ADT	4,000	A
State Route 1 at Junction Route 166 East	12,000 – 16,000 ADT	2,200	A
State Route 166 at Bonita School Road	12,000 – 16,000 ADT	10,200	A
State Route 166 at Black Road	12,000 – 16,000 ADT	10,100	A
State Route 166 at Blosser Road	23,900 – 31,900 ADT	17,800	A
State Route 166 at State Route 135	23,900 – 31,900 ADT	19,000	A
State Route 166 at U.S. Highway 101	23,900 – 31,900 ADT	19,000	A

a. Approximate design capacities
b. 4-lane arterial plus shared median lane
c. Per Orcutt Community Plan
d. The LOS C threshold for three-lane roadway used is based on the median between a two-lane roadway (14,300 ADT) and a 4-lane roadway (34,000 ADT).
e. ADT

Sources: Caltrans 2009b; SLOC 2009e; SLOC 2007; HCS 1998; SBC 1996; SBC 2004; SBC 2010

Existing Intersection Performance

Intersections that could be utilized as part of the Project are those between the SMF and U.S. Highway 101 for each of the three traffic routes: the northbound route, the eastbound route, and the southbound route.

Table 4.6-4 Existing Traffic for Project-Related Roadway Intersections

Intersection	Control Type	A.M. Peak Hr		P.M. Peak Hr	
		V/C	LOS	V/C	LOS
Northbound Route					
State Route 1 (Mesa View Drive)/Halycon Road	Signal	31.1	C	25.1	C
State Route 1 (Mesa View Drive)/Gracia Way	OWSC	10.3	B	10.4	B
State Route 1 (Mesa View Drive)/Valley Road	OWSC	10.0	A	23.3	C
State Route 1 (Cienaga Street)/Halcyon Road (west)	AWSC	39.5	E	104.9	F
State Route 1 (Cienaga Street)/Halcyon Road (east)	AWSC	90.4	F	256.3	F
Eastbound Route					
Willow Road/Pomeroy Road	OWSC	9.2	A	9.8	A
Pomeroy Road/Sandydale Drive	OWSC	14.6	B	15.6	B
Pomeroy Road/Juniper Street	OWSC	13.5	B	13.7	B
Pomeroy Road/Tefft Road	Signal	24.4	C	23.7	C
Tefft Road/Mary Avenue	Signal	23.1	C	24.5	C
Tefft Road/U.S. Highway 101 Southbound Ramp	Signal	49.0	D	60.5	E
Southbound Route					
State Route 166/Black Road	OWSC	11.4	B	15.5	C
State Route 166/Pine Street	Signal	n/a	n/a	17.0	B
State Route 166/Lincoln Street	TWSC	n/a	n/a	10.4	B
State Route 166/Broadway	Signal	n/a	n/a	21.3	C
State Route 166/Town Center Drive	Signal	n/a	n/a	18.7	B
State Route 166/Miller Street	Signal	n/a	n/a	38.6	B
State Route 166/College Drive	Signal	n/a	n/a	0.69	B
State Route 166/Bradley Road	Signal	n/a	n/a	0.61	B

Sources: SLOC 2010; SLOC 2007; SLOC 2006; SMC 2010; SMC 2007a; SMC 2007b

4.6.2 Regulatory Setting

4.6.2.1 Federal

The federal government delegates the responsibilities of maintaining and regulating of roadways to state and local governments.

4.6.2.2 State

Caltrans maintains the state highway system, including U.S. Highway 101, State Route 166, and State Route 1, which provide access to collector, access, and local roads in the Proposed Project area. Caltrans generally regulates maximum load limits for trucks and safety requirements for oversized vehicles for operation on highways.

4.6.2.3 Local

San Luis Obispo Council of Governments

The San Luis Obispo Council of Governments (SLOCOG) is a joint powers authority with a goal of facilitating cooperative regional and subregional planning, coordination, and technical assistance on issues of mutual concern. SLOCOG is the designated Regional Transportation Planning Agency and thereby responsible for all regional transportation planning and programming activities, including developing the Regional Transportation Plan. The Regional Transportation Plan guides transportation policy and is updated every 5 years. SLOCOG plans to address greenhouse-gas emission reductions in the 2010 Regional Transportation Plan update to meet the requirements of Senate Bill 375 (SLOCOG 2010).

San Luis Obispo County General Plan

The 1979 Transportation Plan within the San Luis Obispo County General Plan incorporates the countywide Circulation Element and provides the following goals related to transportation:

- Goal 1: In developing the County Transportation Plan, the betterment of the quality of life shall be the yardstick against which all plans and programs are measured.
- Goal 2: The County Transportation Plan is patterned after the Regional Transportation Plan and, as such, should be compatible with plans of the several cities within the county.
- Goal 3: The transportation system should be a well-coordinated multimodal system that is sensitive to the needs and desires of its citizens. Similarly, transportation programs should serve to reinforce federal, state, regional, and local agency goals including land use, population, employment, urban development, and environment.
- Goal 4: The transportation system should be compatible with the environment, avoid the despoliation of irreplaceable resources, use available resources wisely, promote the aesthetic quality of the county, and minimize environmental changes.
- Goal 5: In developing the County transportation system, all proposals should be financially and politically feasible and have broad public support.
- Goal 6: Proposed transportation system should be designed to maximize safety and ensure a high quality of facilities using all economically and technically feasible means available.
- Goal 7: Transportation systems should minimize social, environmental, and economic disruption and be designed to meet the needs of all social groups (SLOC 1979).

The Land Use and Circulation Element of the San Luis Obispo County General Plan is currently being updated and is scheduled for Board of Supervisors consideration in August of 2012.

San Luis Obispo County Area Plan

The 1989 South County Coastal Area Plan discusses potential improvements to the roadway system in the coastal area. Specific goals and objectives are not identified.

San Luis Obispo County Municipal Code

The San Luis Obispo County Municipal Code implements the General Plan and provides more specific criteria for development. Traffic regulations, including traffic control devices and turning movements, are articulated in the San Luis Obispo County Municipal Code, Title 15, Vehicles and Traffic (SLOC 2009c). Title 23, Coastal Zone Land Use Ordinance, provides standards for proposed developments and new land uses to include parking, street, and frontage requirements. Title 13, Roads and Bridges – Streets and Sidewalks, establishes a road improvement fee to pay for road facilities and improvements related to new development. The County can offer a reimbursement agreement to a developer who constructs a road facility or improvement that exceeds the impact mitigation needs of the new development (SLOC 2009d).

4.6.3 Significance Criteria

According to Appendix G of the State CEQA Guidelines, traffic impacts would be considered significant if they:

- Cause an increase in traffic that 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);
- Exceed, either individually or cumulatively, a level of service standard established by the County congestion management agency for designated roads or highways;
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity; or
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

The County's General Plan and Coastal Zone Land Use Ordinance identify specific criteria for determining whether the potential traffic impacts of a project are significant. The criteria include LOS standards for intersections and roadways in the study area and parking requirements. As listed in Table 4.6-1, a total of six LOS designations, A through F, identify the point where volumes exceed the capacity of the roadway system. According to the county, the Proposed Project would result in a significant impact if it causes an intersection operating at satisfactory LOS C to operate at LOS D or worse, or contributes any traffic to a location already operating at LOS D, E, or F. Caltrans considers LOS C to be the worst acceptable LOS for a Caltrans roadway or intersection.

4.6.4 Project Impacts and Mitigation Measures

Impact #	Impact Description	Phase	Residual Impact
TR-1	Traffic associated with the Proposed Project would increase traffic on local roads and the freeway.	Operations	Class III

Comment [F1]: See cover letter... and adjust appropriately. 1

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Additional traffic would be generated as a result of the throughput increase operations; however, the number of additional trucks needed to transport produced coke and sulfur would be a nominal four trucks per day. The Proposed Project would not change traffic associated with workers or miscellaneous deliveries.

Currently, the SMF personnel generate approximately 160 roundtrips (320 one-way trips) per day. The SMF normal operations generate approximately five truck roundtrips (10 one-way trips) per day, not including green coke and sulfur-related trips. In 2009, the SMF had approximately 15,009 truck roundtrips related to green coke and sulfur, which is approximately 41 trucks per day, or 82 one-way truck trips per day. In total, the SMF generates approximately 206 vehicle roundtrips per day, or 412 one-way vehicle trips per day.

The Proposed Project operations estimate an increase from 15,009 truck roundtrips per year in 2009 to 19,162 truck roundtrips per year. A portion of this increase, from 15,009 to 17,732, is included in the existing SMF permit and CEQA document. Therefore, this EIR addresses the increase in traffic levels from the permit level of 17,732 to 19,162, an increase of 1,430 roundtrips per year, or approximately 3.9 trips per day. The increase over the 2009 traffic levels would be an additional 11.4 trucks per day.

This traffic level increase would not contribute to a change in LOS or contribute to a substantial change in traffic load. The only intersection that is at an LOS E is the intersection at Tefft and Highway 101 during the PM peak traffic hours. However, the total number of truck trips that could occur as a result of the throughput increase is 4 truck trips per day. In addition, not all of those truck trips would utilize the East Route associated with this intersection, with some going south and some going north, depending on market for the Refinery products. Finally, loaded trucks leaving the Refinery are unlikely to be reaching this intersection during PM peak hours since most trucks are loaded and depart the facility throughout the day. Because of the small number of added truck trips, the other potential routes that could be taken and the low likelihood of using the intersection during PM peak hours, no impacts are assumed. Along roadways, traffic would increase from 0.4 and 1.0 percent in Guadalupe at the Highway 166 interchange (currently an LOS of A). Impacts along the most congested roadways at Pomeroy, for example would increase less than 0.21 percent. Therefore, impacts to project-related local roads and the freeway would be *less than significant (Class III).*

Mitigation Measures

Comment [F2]: Please see comment letter dated Oct. 31, 2011 5

TR-1 Within 30 days of permit approval, the applicant shall pay South County Area 2 Road Impact Fees to the Department of Public Works for the proposed 0.78 peak hour trip increase in accordance with the latest adopted fee schedule. In addition, after the Willow

Road/Highway 101 interchange is completed, the applicant shall end the use of both their northbound and eastbound truck routes, as identified in this document, and shall use the Willow Road Interchange instead.

Residual Impacts

Residual impacts would *less than significant* (Class III). No mitigation is required. [1]

4.6.5 Mitigation Monitoring Plan

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
TR-1	Within 30 days of permit approval, the applicant shall pay South County Area 2 Road Impact Fees to the Department of Public Works for the proposed 0.78 peak hour trip increase in accordance with the latest adopted fee schedule. In addition, after the Willow Road/Highway 101 interchange is completed, the applicant shall end the use of both their northbound and eastbound truck routes, as identified in this document, and shall use the Willow Road Interchange instead.	Payment and Inspection of routes	Prior to permit issuance and during operations	San Luis Obispo County Public Works Department

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4.7 Water Resources

Comment [S1]: Please see cover letter dated October 31, 2011 for comment on Water Resources Section. 1

This section addresses the potential impacts related to increased water use and the impacts on the availability of groundwater for other groundwater uses in connection with the Proposed ConocoPhillips Santa Maria Facility Expansion Project (Proposed Project). This section addresses:

- Current and future water demand for the Refinery;
- Current and future water demand of the uses in the surrounding area, including agricultural, industrial, and residential;
- The capability of the ground water basins to supply the demand; and
- The potential impacts of increased pumping on neighboring wells.

This section will also address the Project's potential impacts to water quality. This discussion includes:

- Evaluating whether increased use of water from onsite wells could lead to seawater intrusion or subsidence.
- Assessing the potential for pipeline leakage along the existing pipeline route to impact water quality.
- Estimating potential impacts related to increased effluent disposed through the existing Regional Water Quality Control Board (RWQCB) permit.

In addition to any potential impacts, this section identifies mitigation measures that can reduce water usage to less than current levels and alternative methods to mitigate any impacts.

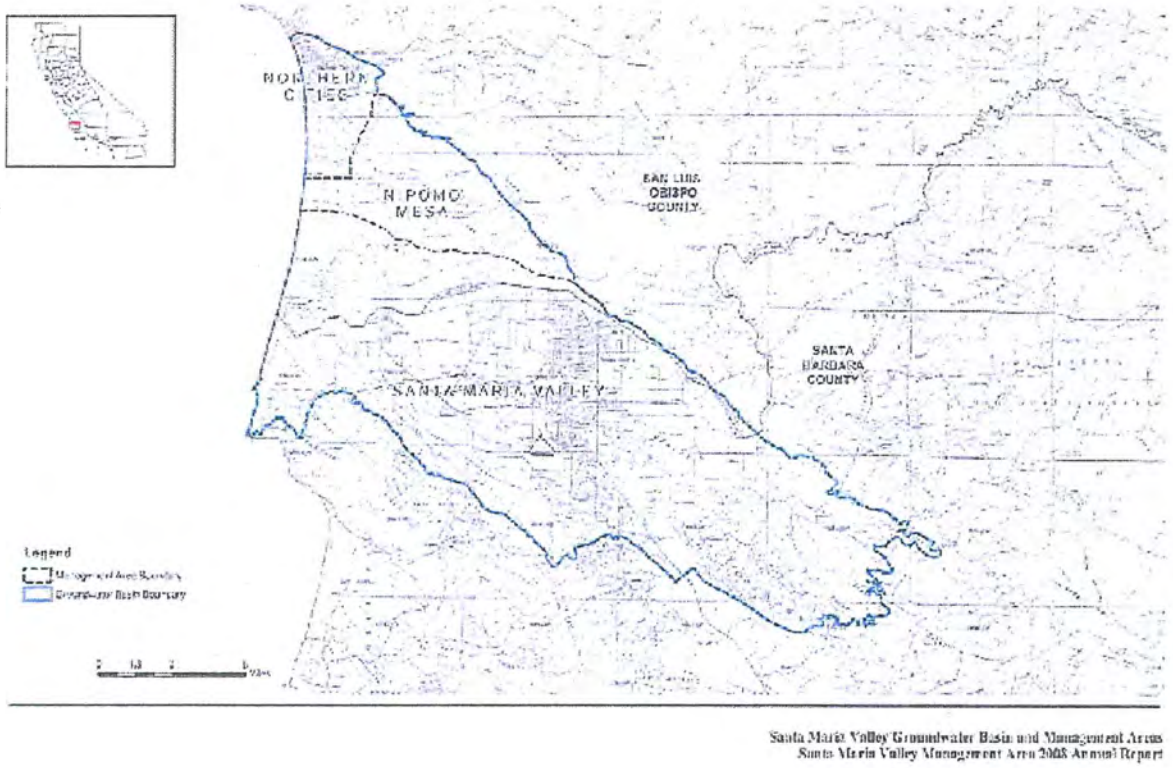
4.7.1 Environmental Setting

4.7.1.1 Water Quantity

The ConocoPhillips Santa Maria Facility (SMF) is approximately 2.5 square miles on the Arroyo Grande Mesa, west of State Route 1 in the County of San Luis Obispo. The facility is currently in use and bounded by industrial and residential uses to the north; industrial, agricultural and recreational (golf course) uses to the east; agricultural uses to the south; and open space and recreational uses to the west.

The site is on the coastal plain with little topographical relief. The site includes operational refining facilities, coastal dunes, and coastal dune vegetation. The Project Site is accessed via State Route 1 along the northern property boundary. The site is within the Santa Maria Groundwater Basin (SMGB). Figure 4.7-1 illustrates the approximate limits of the SMGB. Figures 4.7-2 and 4.7-3 depict the location of shallow groundwater wells and deep groundwater wells.

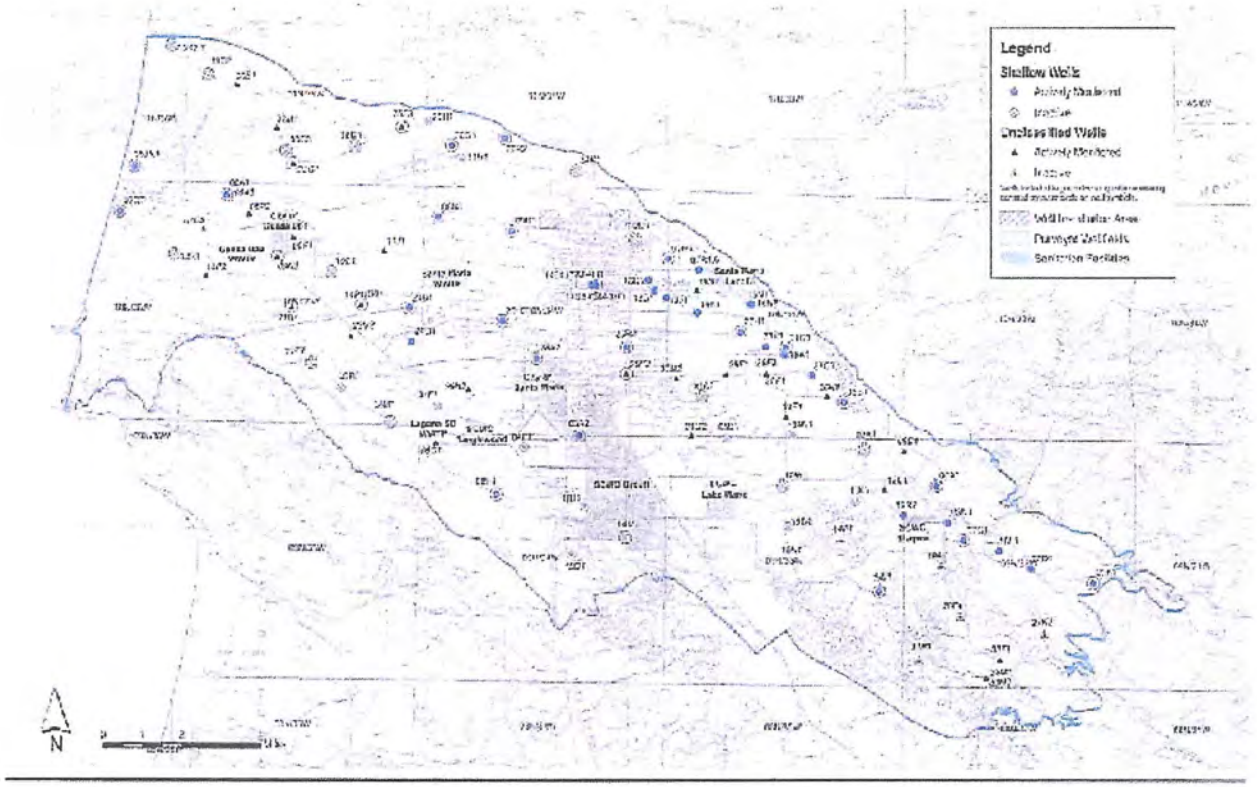
Figure 4.7-1 Santa Maria Groundwater Basin and Management Area



Santa Maria Valley Groundwater Basin and Management Areas
Santa Maria Valley Management Area 2008 Annual Report

Source: SMVMA 2008

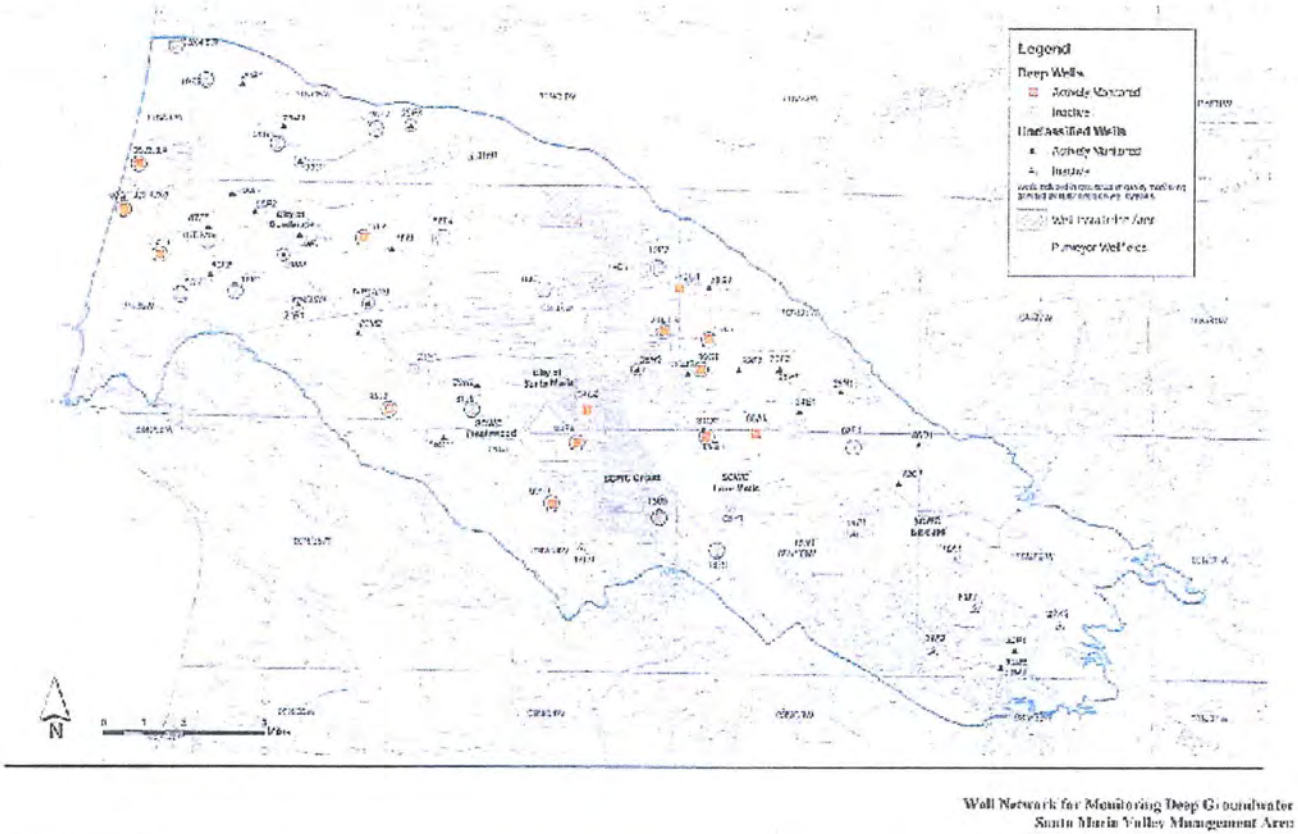
Figure 4.7-2 Santa Maria Basin – Well Network for Monitoring Shallow Groundwater



Well Network for Monitoring Shallow Groundwater
Santa Maria Valley Management Area

Source: SMVMA 2008

Figure 4.7-3 Santa Maria Basin – Well Network for Monitoring Deep Groundwater



Source: SMVMA 2008

Most of the SMGB is within the Santa Maria River Watershed, which extends eastward into the coastal range region and covers more than 453,000 acres. The basin is bound on the north by the San Luis and Santa Lucia Ranges, on the east by the San Rafael Mountains, on the south by the Solomon Hills and the Casmalia Hills, and on the west by the Pacific Ocean. The Santa Maria Valley is drained by the Sisquoc, Cuyama and Santa Maria Rivers and Orcutt Creek. Annual precipitation ranges from 13 to 17 inches with an average annual precipitation of 15 inches per year (California Groundwater Bulletin 118 2004). Natural recharge to the basin comes from seepage loses from the major streams, percolation of rainfall, and subsurface flow (CDWR 2002).

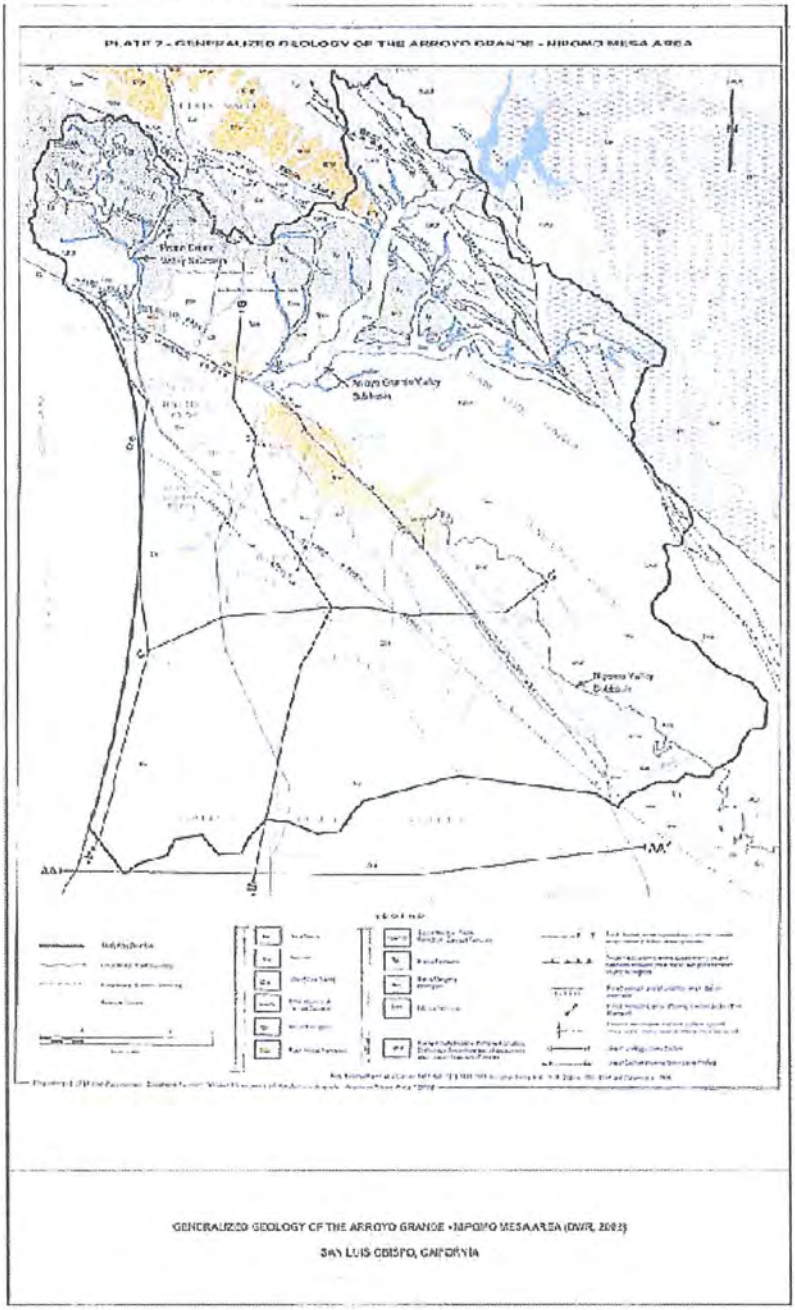
Over several million years during the middle Tertiary period, thick marine sediment deposition in a subsiding basin formed the SMGB. The basin was shaped and deformed by right-lateral, strike slip faulting. Subsequent tectonic compression of the basin resulted in large scale folding. Late Tertiary through relatively recent west-northwest trending reverse faults and thrust faults, local folding, uplift and tilting has further complicated the overall structure within the basin. The SMGB is the upper, water-bearing portion of the Santa Maria Geologic Depositional Basin. The aquifers are generally confined in the western portion of the basin by the Santa Maria River Fault.

The aquifer system in the basin consists of unconsolidated Plio-Pleistocene alluvial deposits including gravel, sand, silt, and clay that range in thickness from 200 to nearly 3,000 feet. The underlying consolidated rocks typically yield relatively insignificant quantities of water of poor quality in the local wells. Franciscan and Knoxville Formation of Jurassic and Cretaceous age, basement complex unconformably underlie the Tertiary and Quaternary deposits. The unconsolidated alluvial deposits in the SMGB comprising the aquifer system include the Careaga Sand, the Paso Robles Formation, the Orcutt Formation, the Quaternary Alluvium, and river channel deposits, sediments, terrace deposits, and wind-blown dune sands at or near the surface.

Figure 4.7-4 depicts the conceptual surface[1] geology for the area. Figures 4.7-5 thru 4.7-7 represent the conceptual geologic subsurface conditions of the primary aquifer system. These cross sections do not depict offsets of the basement rocks and aquifer units by faults (CDWR 2002). The sections suggest and reports discuss significant differences in water levels on opposite sides of the estimated trace of the Santa Maria River Fault, suggesting that the fault is to some degree a hydraulic barrier along the eastern margin of the Nipomo Mesa (CDWR 2002).

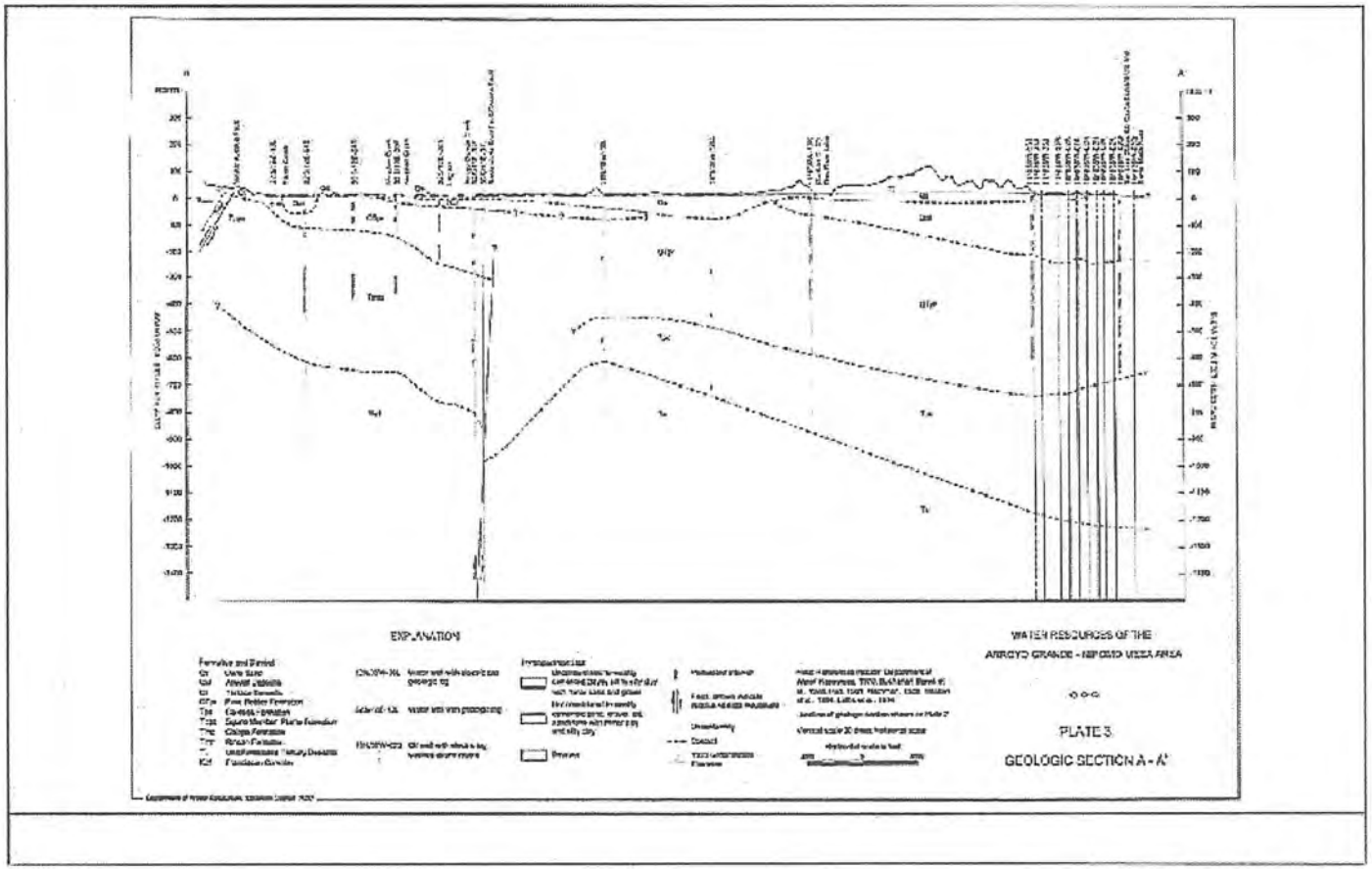
The aquifer characteristics of the SMGB are based on a review of several sources of information including the DWR report (CDWR 2002), a report on a ground water flow model and assessment of Santa Maria River Valley groundwater yield (Luhdorff & Scalmanini 2000), several reports regarding development of the Nipomo Mesa Areas (Cleath and Associates 1996a, 1998; ESA 1998). Many of these references rely heavily on estimates of aquifer properties reported by Worts (1951). Estimates of hydraulic conductivity are based on specific capacity values from driller's pumping tests and aquifer testing conducted on a few wells.

Figure 4.7-4 Generalized Geology of the Arroyo Grande – Nipomo Mesa Area



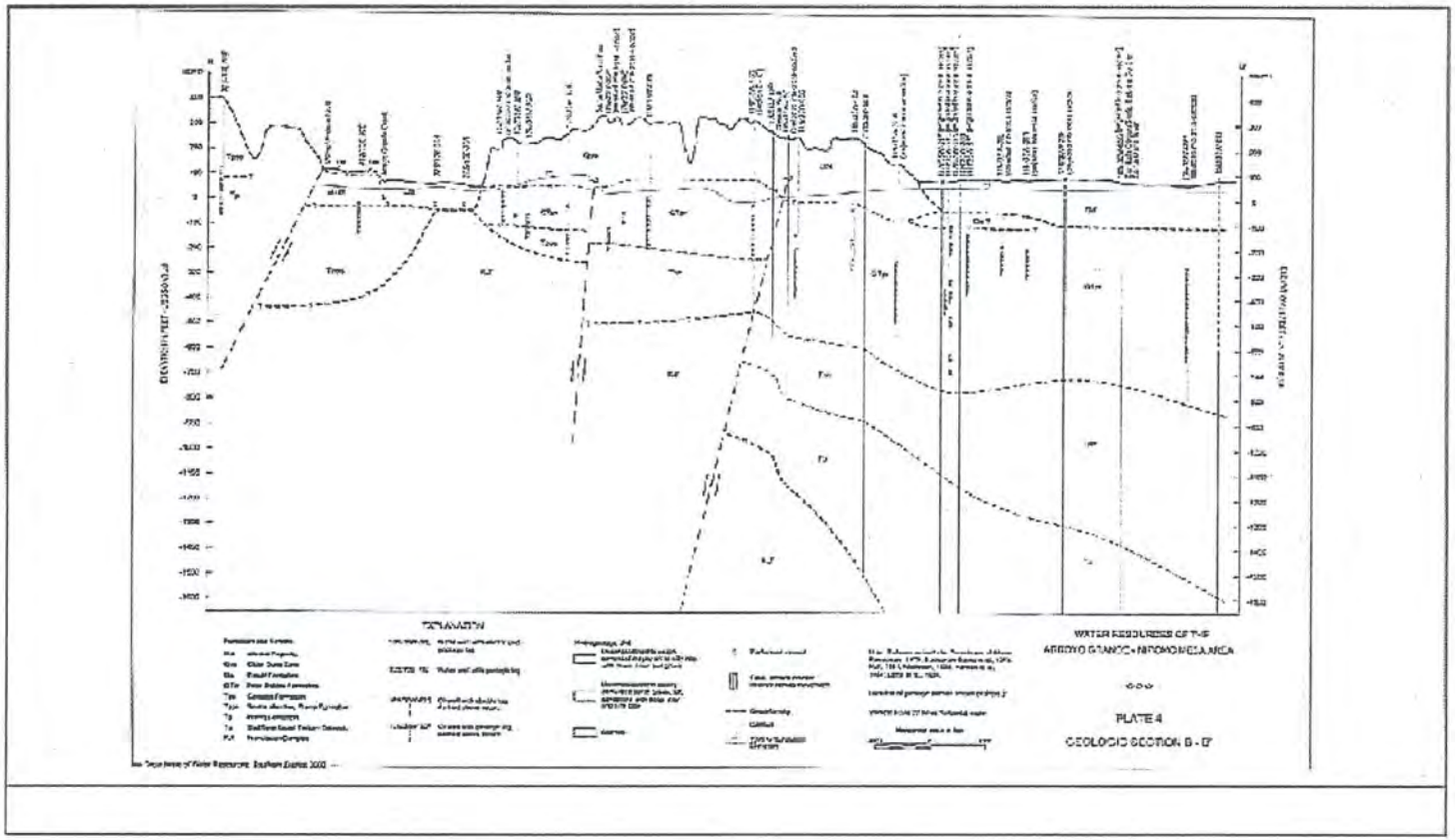
Source: CDWR 2002

Figure 4.7-5 Geologic Cross Section A – A'



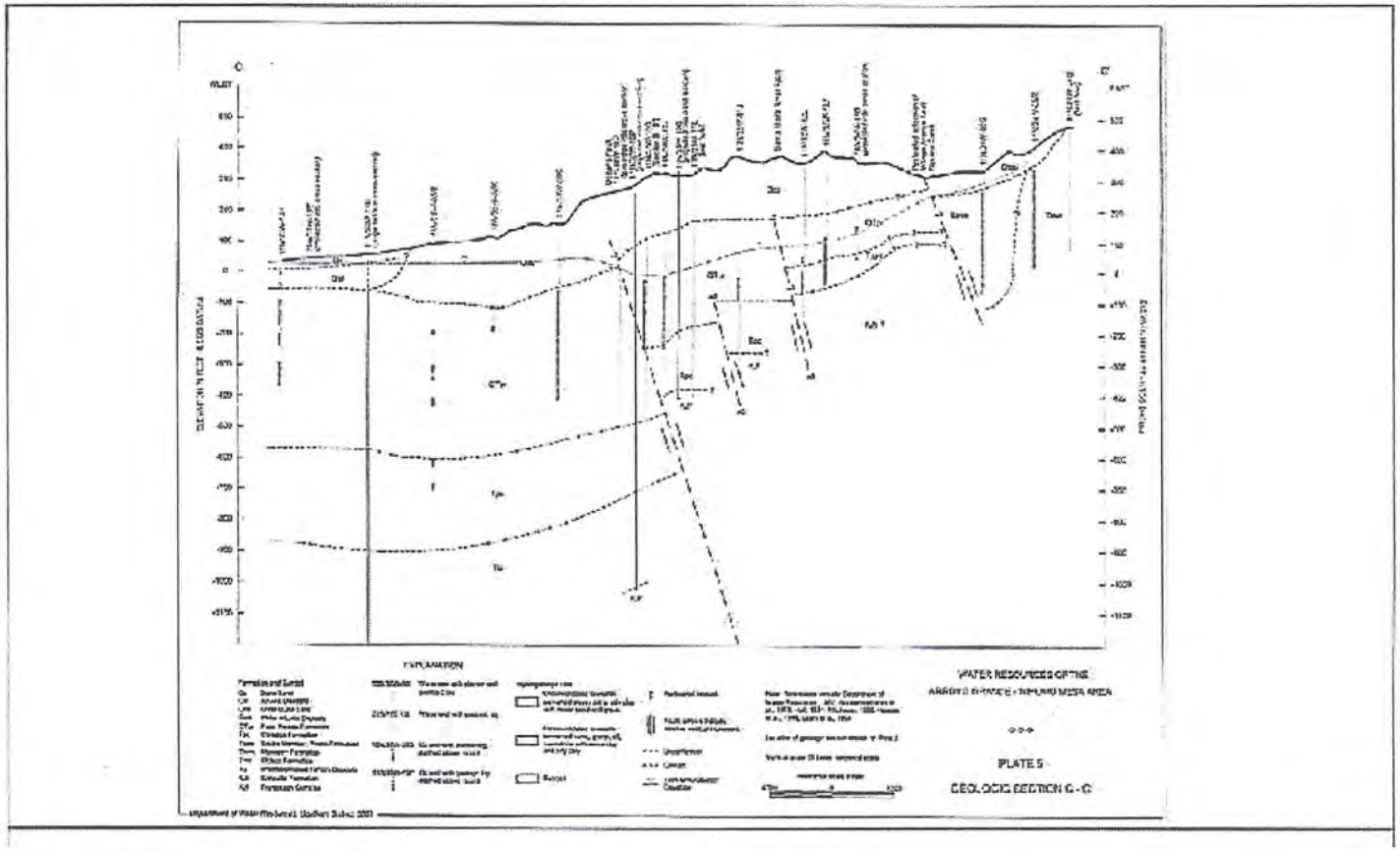
Source: CDWR 2002

Figure 4.7-6 Geologic Cross Section B – B'



Source: CDWR 2002

Figure 4.7-7 Geologic Cross Section C – C'



Source: CDWR 2002

Within the SMGB, the Paso Robles Formation is the thickest and most extensive aquifer in the basin. The report by Luhdorff and Scalmanini includes a map with hydraulic conductivity (K) values for the Paso Robles Formation at 20 locations (2000). In the Sisquoc plain, Orcutt Upland, and central Santa Maria River Valley, K ranges from 100 to 400 gallons per day per square foot (gpd/ft^2) (13 to 52 feet per day [ft/d]). Values are lower in the western portion of the Santa Maria River Valley and beneath Nipomo Mesa, where the reported values range from 15 to 110 gpd/ft^2 (2 to 15 ft/d). The wells are typically screened over hundreds of feet of the Paso Robles Formation, so these values are bulk averages for the formation.

The Quaternary Alluvium is the most permeable aquifer, although few testing data seem to be available to estimate hydraulic conductivity. Luhdorff & Scalmanini show seven locations with estimates of hydraulic conductivities. As for the Paso Robles Formation, data indicate that the hydraulic conductivity of the Alluvium generally decreases to the west. Values of 4500 gpd/ft^2 (600 ft/d) are typical in the Sisquoc plain, while 2,000 gpd/ft^2 (265 ft/d) is typical for the lower portion of the alluvium near Guadalupe. Typical thickness for the Quaternary Alluvium in the Santa Maria River Valley is 100 to 200 feet. Near Guadalupe, the upper portion of the alluvium is generally fine-grained and acts as a hydraulic confining layer above the lower alluvium and Paso Robles Formation.

The California Department of Water Resources initially monitored groundwater levels in the SMGB in the 1930s. Most of the available water level data is from pumping wells, and operations and methodology details were not reported according to current standards. Therefore, the data is of limited use except where long time records are available for wells, in which case, trends can be established.

Major declines in groundwater levels in Santa Maria River Valley wells and decrease of the groundwater hydraulic gradient toward the ocean occurred again between the mid-1940s and late-1960s. Drops in water level of 40 to 60 feet were common in wells during this period (CDWR 2002, Luhdorff & Scalmanini 2000).

Over the years, the transition between unconfined and confined conditions had generally migrated west. Total dissolved solids (TDS) in groundwater east of Guadalupe were less than 1,000 milligrams per liter (mg/l) in the 1930s, but increased to greater than 3,000 mg/l by 1975 (Santa Barbara County Water Agency 1996, 1999). Increasing groundwater pumping and possible surface water diversions to support flourishing agricultural development in Santa Maria River Valley contributed to the drop in groundwater levels, the decrease in flows in the Santa Maria River, and the increase in TDS in groundwater. However, the most important factor appears to be a decrease in recharge due to a prolonged period of less than average rainfall from 1945 to 1970.

Substantial recovery of groundwater levels in the Santa Maria River Valley occurred in the 1970s and 1980s. Management of Cuyama River floodwater flows by Twitchell Dam began in 1959 and is credited with increasing recharge to the Santa Maria River Valley and helping to arrest the decline in groundwater levels. Reported estimates of supplemental recharge since construction of the dam range from 20,000 acre-feet per year (AF/Y) to 38,000 AF/Y (Dames

and Moore 1991, Luhdorff & Scalmanini 2000). However, these estimates of supplemental recharge are much too large relative to the Cuyama River Flows. Supplemental recharge due to control of storm water flows cannot exceed the total average flow below the dam, and is likely a relatively small portion of the total average flow. Available gauging data for Cuyama River below Twitchell Dam indicate average annual flow from 35,000 to 39,500 AF/Y.

Prior to, as well as after construction of Twitchell Dam, most of the water in the Santa Maria River infiltrated the Santa Maria Valley prior to reaching the mouth at the Pacific Ocean. River water flowed all the way to the ocean only during extended periods of high runoff. Even prior to the construction of the dam, this occurred on average only several days per year. Based on comparison of Santa Maria River flow records before and after construction of the dam, it is estimated that management of Cuyama River discharge at Twitchell Dam enhances average recharge to the Santa Maria River Valley aquifers by no more than 10,000 to 15,000 AF/Y. Based on the rainfall data, it appears that long-term variation of rainfall has had much more influence on groundwater levels in Santa Maria than Twitchell Dam.

Luhdorff & Scalmanini report that hydrograph records for the period from the early 1980s to late 1990s show successive periods of decline and recovery that are not consistent with perennial overdraft (2000). Reported estimates of the annual yield of the basin include 120,000 AF and 124,000 AF from1968 to1989, which Luhdorff & Scalmanini reports as the approximate sustainable perennial yield (Santa Barbara County 1996, 2000, 2002; Ahlroth 1995; Luhdorff & Scalmanini 2000). Based on estimates, average demand (groundwater pumping) in the Santa Maria River valley was 96,200 AF/Y from 1945 to 1970 and 140,000 AF/Y in 2000 (Luhdorff & Scalmanini 2000).

Water balance evaluations for SMGB using hydrologic conditions based on 45-year period from 1935 to 1979 are reported to indicate average annual deficits of 6,000 AF for historical water demand conditions, and 20,000 AF for water demands projected into the future from the late 1990s (Santa Barbara County 1992, 1994, 1996, 2000, 2002). However, this estimated deficit is reduced by importation of water to Santa Barbara County beginning in 1996 from the State Water Project (SWP). Santa Barbara County estimated that the SWP imported 12,000 AF of water to the SMGB in 1999. This reduces the estimated deficit from 20,000 to 8,000 AF/Y. Recharge enhancement by Twitchell Dam will essentially erase any deficit. However, the recharge enhancement provided by management of flood water discharge from Twitchell Dam may diminish in the future due to depletion of Cuyama River flows by groundwater pumping in Cuyama Valley and decrease in storage capacity with accumulation of sediment in Twitchell Reservoir (CDWR 2003, SAIC et al. 2003).

Luhdorff & Scalmanini report specific yield values in the range of 8 to 13 percent, and assume a reasonable value of storativity of 0.0001 for portions of the aquifers system under confined conditions (2000).

The Nipomo Community Services District (NCSD) was formed in 1965 to provide a domestic water source for the Nipomo area. The District is divided into the Blacklake and Town Divisions. Six wells serve the Town Division, approximately 3,000 accounts with an average consumption per account of 0.64 acre feet per year (AFY). Two wells serve the Blacklake

Division, 580 accounts with an average consumption per account of 0.68 AFY.

From 1990 to 2003, water usage increased 58 percent (NCSD 2004). The water budget for the Nipomo Hydrologic Sub Area, the primary source of domestic water from the SMGB in this area, is in overdraft, which has created a groundwater depression (CDWR 2002, NCSD 2004). Table 4.7-1 provides the usage in 2006 and projected future build-out usage.

Table 4.7-1 Existing and Future Water Usage

	2006	Future Built-Out
Water Service Area	4,648 acres	9,178 acres
Average Water Duty Factor	0.65 AFY/acre[a]	0.68 AFY/acre
Average Day Demand	3,000 AFY	6,200 AFY
	2.67 MGD[b]	5.57 MGD

a. AFY = acre feet per year
b. MGD = million gallons per day
Sources: NCSD 2007, NMMA 2008, NCSD 2009, Wallace et al. 2010

The SMF currently uses 981,000 gallons of water per day. The proposed 10 percent increase in production is anticipated to increase water utilization by an additional one percent, which corresponds to 9,900 gallons per day. The Nipomo Hydrologic Sub Area has approximately 84,000 acre-feet of water storage above mean sea level (DWR 2002). At the present time, despite overdraft conditions and unconfined (or low head conditions), there are no reports of saltwater intrusion that would contaminate the groundwater supply.

Ground subsidence at the Refinery or the surrounding area has not been reported by either the Applicant or any available published records by the United States Geologic Survey related to groundwater pumping in the region.

4.7.1.2 Water Quality

The site currently houses the Refinery, pipelines, and related equipment. All crude oil is delivered by pipeline. The Refinery produces semi-refined liquid products, petroleum coke, elemental sulfur, and fuel gas. The two semi-refined liquid products, gas oil and pressure distillate, are sent via pipeline to a San Francisco Refinery. Petroleum coke is shipped via truck or railcar. Sulfur is shipped via truck and all produced fuel gas is recovered and used for energy at the Refinery.

The Proposed Project does not include any new construction or equipment, and the existing equipment will remain the same. The Proposed Project includes increased processing and refining crude oil by approximately 10 percent. The Project would not change the characteristics or quantity of any liquid or solid waste. Accordingly, any additional waste generated would be handled in accordance with all local, state, and federal regulations. However, a pipeline leak or spill related to shipping could be larger in volume as a result of increase in materials generated. Based on effluent monitoring results from the Applicant, daily effluent ranged from 0.001 million gallons per day (MGD) on several days to a maximum effluent flow of 0.544 MGD. Similar effluent flow rates were reported in 2007 and 2008. Onsite total coke volume is limited

to 4,000,000 cubic feet. Accordingly, coke is shipped daily to keep inventory below regulated thresholds.

Impacts to water quality would be significant if spill volume increased along the pipeline route due to the Proposed Project. The Refinery operates under the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Permit No. CA0000051 to minimize potential pollutants to the groundwater and outfall areas.

The facility maintains two separate collection systems: one system processes wastewater and contact stormwater and the second system collects non-contact stormwater. The process water sewer system collects process wastewater and precipitation runoff from the oil storage tank dikes and the operating units. This wastewater flows by gravity to a waste treatment plant that also performs the groundwater remediation. The wastewater plant includes three oil-water separators, two surge tanks, dissolved air flotation, a trickling filter, an Orbal aeration system, and a secondary clarifier. The treated wastewater is discharged to the Pacific Ocean.

The NPDES permit summarizes the final effluent limitations for the discharge. In addition to the effluent limitations, additional mass loading credits for storm runoff, which is commingled with process wastewater, can be granted. During wet weather, runoff effluent credits are provided according to the NPDES facility permit. Effluent limitations are included in the NPDES permit depending on the whether the effluent is less than or greater than 0.285 MGD, respectively with additional monthly average effluent limitations imposed in Table 9 of the NPDES facility permit.

A non-contact stormwater sewer system collects precipitation runoff from streets and unimproved areas, which are not subject to oil spills; the runoff then flows by gravity to an evaporation pond. The corresponding sludge is recycled at the adjacent coke facility.

Groundwater quality varies significantly across the basin (Santa Barbara County 1996, 1999). TDS in the groundwater generally increases from east to west. In the vicinity of the Santa Maria Valley, the basin is classified as vulnerable to nitrate contamination, and in places concentrations of nitrate have increased from less than 30 mg/l in the 1950s to more than 100 mg/l in the 1990s. The Careaga Sand, the basal member of the system of alluvial sand, is generally considered to have poor water quality (Dames and Moore 1991). In general, high TDS, sulfate, or chloride content impairs groundwater in some parts of the basin (CDWR 2002). However, no contaminates of hydrocarbons or heavy metals listed in the applicants effluents semi-annual effluent result for the past three years have been reported in the water sample testing to date.

4.7.2 Regulatory Setting

4.7.2.1 Federal Policies and Regulations

Safe Drinking Water Act of 1974

The Safe Drinking Water Act of 1974 (SDWA) was implemented by the EPA and is the primary federal regulation controlling drinking water quality in every public water system in the United States. The SDWA authorizes the EPA to establish and enforce guidelines for drinking water to

protect against both naturally occurring and manmade contaminants.

The SDWA was originally implemented in 1974 with significant amendments in 1986 and 1996. The SDWA originally set standards for the treatment of individual constituents, including pesticides, trihalomethanes, arsenic, selenium, radionculides, nitrates, toxic metals, bacteria, viruses, and pathogens. The amendments to the SDWA made some significant changes, most of which resulted in more stringent protection of drinking water sources. The amended SDWA also greatly enhanced the existing law by implementing operator training, funding for water system improvements, and public information as important components of safe drinking water.

The Clean Water Act

The Clean Water Act of 1972 (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulates quality standards for surface waters. Under the CWA, the EPA has implemented many pollution control standards for industries, as well as water quality standards for all contaminants in surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a National Pollutant Discharge Elimination System (NPDES) permit is obtained from the EPA.

4.7.2.2 State Policies and Regulations

Senate Bill 610, Water Supply Assessment.

Senate Bill (SB) 610 was passed on January 1, 2002, amending California law to require detailed analysis of water supply availability for large development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to meet project demands.

SB 610 also requires the preparation of a Water Supply Assessment (WSA) for a project that is subject to CEQA. The lead agency for the project is required to identify the public water system that might supply water to the project and then to request a WSA from the water supplier. If there is no public water system and the project meets the definition of "project" as defined in SB 610, then the lead agency must prepare the assessment. The County addresses the requirements of SB 610 in the following discussion and also the analysis of impact WR-1.

Is the Proposed Project Subject to CEQA?

Yes. As presented in this EIR, the Proposed Project requires permits issued by a public agency and is, therefore, subject to CEQA.

Is the Proposed Project a "Project" under SB 610?

A Proposed Project meets the definition of "Project" according to Water Code Section 10912 if it is:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed hotel or motel, or both, having more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use project that includes one or more of the projects specified in this subdivision; or
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project (DWR 2003b).

Based on these criteria, the Proposed Project is not a project according to the intent of the definition. While the Proposed Project would be within an industrial facility, it would not be an "industrial plant" with more than 1,000 persons or an "industrial park" planned to house more than 1,000 persons. Finally, the water demand for the Proposed Project would not be equivalent to or greater that the amount of water required by a 500 dwelling unit project. As proposed, the ConocoPhillips Santa Maria Refinery Throughput Increase Project would require up to a one percent increase in water use. Current water use averages approximately 981,000 gallons per day, and the one percent increase would be approximately 9,900 gallons per day. A project of 500 dwelling units would use approximately 134,000 gallons per day. Therefore, the Proposed Project increase in water use would be significantly less than the threshold amount to require the Water Supply Assessment according to SB610.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB) are the principal state agencies with primary responsibility for the coordination and control of water quality. The SWRCB enforces the water quality standards set forth in the CWA for the State of California on behalf of the federal EPA. Most SWRCB objectives are based on the California Code of Regulations, Title 22 State Drinking Water Standards. The City of Whittier lies within Region 4, the Los Angeles Regional Water Quality Control Board.

The Porter-Cologne Water Quality Control Act of 1987

The Porter-Cologne Water Quality Control Act governs water quality in California is by assigning the overall responsibility for water rights and water quality protection to the SWRCB to develop and enforce water quality standards. The EPA delegated to California the authority to issue NPDES permits for all areas within its boundaries, except Native American territories.

Safe Drinking Water and Toxic Enforcement Act of 1986

The Safe Drinking Water and Toxic Enforcement Act provides two ways to administratively list chemicals known to the state to cause cancer or reproductive toxicity. A chemical can be listed if a body considered to be authoritative by the state's qualified experts, such as the EPA or Food and Drug Administration, formally identifies the chemical as causing cancer or reproductive toxicity A chemical can also be listed if a state or federal agency has formally required labeling or identifying that chemical as causing cancer or reproductive toxicity. The criteria for listing these chemicals are outlined in 22 CCR Section 12902.

Groundwater Management Act of 1992

The Groundwater Management Act, commonly referred to as Assembly Bill (AB) 3030, is designed to provide local public agencies with increased management authority over groundwater resources. Groundwater is a valuable natural resource within California, and AB 3030 ensures safe production and quality by encouraging local agencies to work cooperatively to manage groundwater resources within their jurisdictions (Water Code Section 10750).

4.7.2.3 Local Policies and Regulations

San Luis Obispo County

The County of San Luis Obispo encompasses approximately 3,300 square miles of land and has more than 260,000 residents. The San Luis Obispo County Water Resources Division is the County's management authority to ensure sustainable water uses, reliable water supplies, and better water quality. The Water Resources Division has incorporated the Integrated Regional Water Management Plan, which promotes coordination with statewide water planning efforts.

4.7.3 Significance Criteria

The following hydrology and water resources impacts would be deemed significant if the Proposed Project would:

- Violate any water quality standards or waste discharge requirements;
- Substantially change the quality of groundwater;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or offsite;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or substantially increase the rate of runoff in a manner that would result in flooding on or offsite; or
- Create, contribute, or alter hydrologic characteristics of the area producing runoff that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

4.7.4 Project Impacts and Mitigation Measures

Impact #	Impact Description	Phase	Residual Impact
WR.1	The Proposed Project one percent increase in water usage may impact the current and future availability of groundwater for other users, including agricultural and residential users.	Operation	Class II

Comment [F2]: Please see cover letter dated October 31, 2011 for comment on section highlighted in yellow and consider the Nipomo Mesa Water agreement. 1

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The rights to extract water from the SMGB have been disputed since the 1990s, resulting in several legal proceedings and culminating with a multi-pronged lawsuit resolved in 2008 (Lead Case No. 1-97-CV-770214). The Nipomo Mesa Management Area Technical Group (NMMATG), which represents various groups and organizations, was formed as a result of a legal judgment to monitor water usage and produce annual reports for the SMGB. To date, the TG has produced two reports for the Nipomo Mesa Management Area, one in 2008 and recently the second report for 2009 (included as Appendix C). These reports provide a breakdown of the available data for the SMGB, production records, and data presented herein.

Based on the 2009 report, the estimated production of groundwater was 12,200 acre-feet (AF) in 2009 (NMMATG 2009). Of the 12,200 AF of groundwater produced, the Applicant reported production of 1,200 AF, approximately 9.8 percent of the total production (NMMATG 2009). The Applicant's use was 17 percent of the total production from individual landowners, public water purveyors, and industrial uses, which constituted 6,740 AF, or 55 percent of total water production.

The groundwater production for all users steadily increased from 4,400 AF per year in 1975 to 10,500 AF per year in 2000. However, the 2009 estimated production rate is 400 AF less than 2008 (NMMATG 2009). The annual report suggests that the continued build-out of the Woodland Development would have resulted in higher production. However, reduced production by Golden State Water Company and Nipomo Community Service District as a result of conservation efforts and reduced climatic demands contributed to a lower than anticipated increase.

The NMMATG annual reports include provisions for the rights to use the groundwater, development of the groundwater monitoring programs, and development of plans and programs to respond to Potentially Severe and Severe Water Shortage Conditions. Table 4.7-2 lists the projected potential future water use in the basin. Currently, no projected increase is predicted for Rural Water Company, and no estimates are available for future agricultural uses.

Table 4.7-2 Potential Future Water Usage in the SMGB

Party	2009 Use	Projected 2030 Use
Nipomo Community Services District	2,560 AF	6,300 – 7,900 AF
ConocoPhillips Santa Maria Refiner (Applicant)	1200 AF	1400 AF
Woodlands Development	810 AF	1600 AF
Golden State Water Company	1290 AF	1940 AF

Source: NMMATG 2009

The Proposed Project increase in water demand is anticipated to increase water utilization to 1,400 AF (approximately 10,000 gallons per day). The 2009 annual report identified this increase in volume as less than the historical peak pumping rate for the Applicant. With the existing capacity of the Nipomo Hydrologic Sub Area, the existing reservoir can provide the additional water. The Proposed Project increase in water demand during normal to drier than average climatic conditions, given the current management plans and agreements, will be a less than significant impact.

If prolonged drought conditions cause potentially severe to severe water shortages, any increase in water use could pose a potentially significant, but mitigable impact. Mitigation measures reducing the potential impacts from water-supply demand during severe drought conditions are available. The Nipomo Community Service District is currently developing the Water Intertie Project to bring supplemental water to parties within the Nipomo Mesa Management Area. The water line project involves the construction of approximately 5 miles of new water main to transport up to 3,000 AF of new water from the City of Santa Maria. If this pipeline is built, the potential adverse impacts of water demand during potentially severe to severe water shortage periods would be reduced or eliminated.

Comment [F3]: Please see cover letter dated October 31, 2011 for comment on section highlighted in yellow. 1

Nonetheless, mitigation measures would be applicable during potentially severe water shortage conditions as defined by the Nipomo Mesa Management Area and the Nipomo Urban Water Management Plan.

Mitigation Measures

WR-1 Please see cover letter dated October 31, 2011 for comment on section highlighted in yellow.

Comment [F4]: Please see cover letter dated October 31, 2011 for comment on section highlighted in yellow. 2

- *Designs for and implementation of modification of the existing facility, to re-use the existing water. The SMF currently implements two systems to treat runoff and water used during operations. The water could be further treated and re-used as part of additional conservation activities. Additional plans and reports would be required for the treatment activities.*

- *Identification of general measures available to reduce water usage for Refinery Operations.*

- *Other measures as appropriate to offset the increased use of water related to the Proposed Project during severe drought conditions, which may include purchase of water rights from other users, conservation efforts, use of reclaimed water, or additional water treatment and reuse as needed.*

Deleted: *The Applicant shall develop a Water Management Plan, which shall include best management practices and water conservation measures, including the use of reclaimed water and surface runoff retention basin water for Refinery uses, dust suppression, and landscaping uses, as available. The Applicant shall make changes to the Water Management Plan if requested by the County Director of Planning. The Water Management Plan shall include implementation of measures consistent with the Nipomo Mesa Management Area Water Shortage Conditions and Response Plan. The plan shall provide guidelines on managing all future water use during severe drought years. Once it is determined that a severe drought condition exists, restricted (drought) water usage measures shall remain in effect until it is shown satisfactorily to the County that the severe drought condition no longer exists. This plan shall include:* 3

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Residual Impacts

The residual impacts from water demand would be adverse but not significant during all years except where potentially severe to severe drought climatic conditions exist. Under conditions of prolonged drought, the impact would be *less than significant with mitigation* (Class II).[7]

Impact #	Impact Description	Phase	Residual Impact
WR.2	The Proposed Project increase in groundwater pumping of onsite wells may exceed sustained pumping capacities of existing wells and drawdown onsite wells and wells on neighboring properties.	Operations	Class III

Comment [F5]: Please see cover letter dated October 31, 2011 for comment on section highlighted in yellow. 1

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Water wells within the SMGB are screened over alluvial and bedrock approximately 1,500 feet below mean sea level under the Santa Maria River and approximately 200 feet above mean sea level under the northeastern edge of the Nipomo Mesa (DWR 2002). Wells in the Nipomo Mesa and Santa Maria area are screened for hundreds of feet within alluvial and Paso Robles Formation bedrock. Hydraulic conductivity is estimated to be approximately 15 to 110 gpd/ft^2 in the western portion of the Santa Maria River Valley increasing to 100 to 400 gpd/ft^2 in the central Santa Maria River Valley (Luhdorff and Scalmanini 2002).

The existing wells have considerably greater capacity and production capabilities than the current and projected uses. In addition, the NMMATG has adopted a Well Management Plan and protocol for establishing and measuring groundwater level measurements. To date, no drawdown or adverse effects have been noted and none are anticipated based on the available data and well conditions. However, the well monitoring program will continue to document and verify these findings. Therefore, the existing water wells have sufficient capacity to provide the additional water demand supply for the Proposed Project.

Impacts due to increased groundwater pumping on the adjacent properties would *be less than significant* (Class III).

Mitigation Measures

No mitigation measures are required.

Residual Impacts

There would be no residual impacts.

Impact #	Impact Description	Phase	Residual Impact
WR.3	The Proposed Project may have significant impacts on water quality.	Operations	Class II

Comment [F6]: Please see cover letter dated October 31, 2011 for comment on section highlighted in yellow. 5

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The Proposed Project does not include any new construction or equipment and the existing equipment would remain the same. The Proposed Project includes increased processing and refining crude oil by approximately 10 percent. The Project would not change the characteristics or quantity of any liquid or solid waste. Accordingly, any additional waste generated would be handled in accordance with all local, state, and federal regulations. However, a pipeline leak or spill related to shipping could be larger in volume as a result of increase in materials generated.

Impacts to water quality would be significant if spill volume increased along the pipeline route

due to the Proposed Project. The Refinery operates under the Environmental Protection Agency National Pollutant Discharge Elimination System (NPDES) Permit No. CA0000051 to minimize potential pollutants to the groundwater and outfall areas.

In addition, the facility maintains two separate collection systems: one system processes wastewater and contact stormwater and the second system collects non-contact stormwater. The process water sewer system collects process wastewater and precipitation runoff from the oil storage tank dikes and the operating units. This wastewater flows by gravity to a waste treatment plant that also remediates the groundwater. The wastewater plant includes three oil-water separators, two surge tanks, dissolved air flotation, a trickling filter, an Orbal aeration system, and a secondary clarifier. The treated wastewater is discharged to the Pacific Ocean.

The increased crude oil refined at the site would be managed under the same spill prevention guidelines currently in place at the Refinery. In addition, any increased process water shall be treated in the existing treatment system. Therefore, there will be a less than significant impact with implementation of the following mitigation measures.

Mitigation Measures

WR-3.1 Ensure that any additional increased process water is treated by the wastewater treatment system in conformance with the NPDES Permit.

WR-3.2 Existing spill management precautions shall be amended as needed to mitigate an increased spill size due to the increased amount of crude oil processing as reviewed and approved by San Luis Obispo County Planning and Building and San Luis Obispo County Water Resources Division.

Residual Impacts

There would be no residual impacts.

Comment [e7]: NPDES permit limit is not being changed. This needs to be removed. 1

Comment [S8]: Not needed. Existing spill management plan is appropriate as no new storage tank required, no construction, no need to change SPCC requirements and no change in containment. All adequate as exist. 2

Comment [e9]: SMR SPCC plan already addresses the maximum spill size which is based on maximum oil onsite. The volume of oil onsite will not change because the size of equipment will not change. This can be removed 3

Comment [e10]: This implies that a leak now is not significant, but after the throughput increase a pipeline leak would become significant. There is essentially no change in significance. There are preventative measures in place now for a significant leak. 4

4.7.5 Cumulative Impacts and Mitigation Measures

Current operations at the Refinery pump approximately 1,200 AF per year, which is not the highest historic use by the Applicant (NMMATG 2009). The proposed one percent increase in water use, which corresponds to approximately 1,400 AF per year, has been included in the NCSD and NMMATG studies of future groundwater demands. These parties expect to provide the necessary groundwater demand increase from the SMGB. In general, the existing wells have adequate capacity to pump the additional water demand.

In the event of potentially severe to severe climatic drought conditions, parties in previous litigation adopted a Water Shortage Condition and Response Plan, and the measures included will provide the necessary contingencies to mitigate the water shortage. In addition, this document includes other alternatives that could be implemented to conserve or treat water as appropriate to compensate for the additional volumes needed as part of the Proposed Project during severe drought conditions. Finally, NCSD is developing plans for a pipeline to deliver

additional water to the area to reduce or alleviate any future water shortages.

Finally, the SMF collects and treats stormwater and water used in the plant operations and discharges the treated water under an NPDES Permit. This treatment and permitting process ensures that the potential pollutants to the groundwater and outfall areas are minimized.

Thus, no cumulative significant impacts to the groundwater supply, existing wells, or water quality are expected.

4.7.6 Mitigation Monitoring Plan

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
WR-1	The Applicant shall develop a Water Management Plan, which shall include best management practices and water conservation measures, including the use of reclaimed water and surface runoff retention basin water for Refinery uses, dust suppression, and landscaping uses, as available. The Applicant shall make changes to the Water Management Plan if requested by the County Director of Planning. The Water Management Plan shall include implementation of measures consistent with the Nipomo Mesa Management Area Water Shortage Conditions and Response Plan. The plan shall provide guidelines on managing all future water use during severe drought years. Once it is determined that a severe drought condition exists, restricted (drought) water usage measures shall remain in effect until it is shown satisfactorily to the County that the severe drought condition no longer exists.	Terms outlined in Water Shortage Conditions and Response Plan. Design documents and plans	During times of Potentially Severe to Severe climatic conditions where groundwater conditions are sufficient low as to permit seawater intrusion	County of San Luis Obispo Nipomo Mesa Management Area Technical Group
WR-3.1	Ensure that any additional increased process water is treated by the wastewater treatment system in conformance with the NPDES Permit.	Inspection	During operations	San Luis Obispo County Water Resources Division
WR-3.2	Existing spill management precautions shall be amended as needed to mitigate an increased spill size due to the increased amount of crude oil processing as reviewed and approved by San Luis Obispo County Planning and Building and San Luis Obispo County Water Resources Division.	Review of existing precaution measures	Prior to permit	San Luis Obispo County Water Resources Division

Comment [F11]: Please see cover letter dated October 31, 2011 for comment on section highlighted in yellow. 1

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5.0 ConocoPhillips Project Alternatives Analysis

The California Environmental Quality Act (CEQA), Section 15126.6, requires an Environmental Impact Report (EIR) to describe a reasonable range of alternatives to a Project or to the location of a Project that could feasibly attain its basic objectives and evaluate the comparative merits of the alternatives. This section discusses a range of alternatives to the Proposed Project, including alternative sites and a "No Project Alternative." Criteria used to evaluate the range of alternatives and remove certain alternatives from further consideration are addressed. The CEQA Guidelines, Section 15126.6, provide direction for the discussion of alternatives to the Proposed Project. This section requires:

- A description of "...a range of reasonable alternatives to the Project, or to the location of a Project, which would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the comparative merits of the alternatives" (15126.6(a)).
- A setting forth of alternatives that "...shall be limited to ones that would avoid or substantially lessen any of the significant effects of the Project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the Project" (15126.6(f)).
- A discussion of the "No Project" alternative, and "...If the environmentally superior alternative is the "No Project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (15126.6(e)(2)).
- A discussion and analysis of alternative locations "...that would substantially lessen any of the significant effects of the Project need to be considered for inclusion in the EIR" (15126.6(f)(2)(B)).

This document has used an alternative screening analysis to define a reasonable range of alternatives to be evaluated in the EIR. The alternatives screening analysis provides a detailed explanation of why some of the alternatives were rejected from further analysis and assures that only the environmentally advantageous alternatives are evaluated and compared in the EIR.

This screening methodology also uses the *"rule of reason"* approach to alternatives as discussed in State CEQA Guidelines (Section 15126.6(f)). The rule of reason approach has been defined to require that EIR address a range of feasible alternatives that have the potential to diminish or avoid adverse environmental impacts. The State CEQA Guidelines state:

> The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the Project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the Project (Section 15126.6(f)).

In defining feasibility of alternatives, the State CEQA Guidelines state:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects

with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (Section 15126.6(f)(1)).

If an alternative was found to be technically infeasible, then it was dropped from further consideration. This was the primary feasibility factor that was used to eliminate an alternative without further screening analysis.

In addition, CEQA states that alternatives should "*...attain most of the basic objectives of the project* ..." (Section 15126.6(a)). If an alternative was found to not obtain the basic objective, then it was also eliminated.

The use of a screening analysis for the alternatives ensures that the full spectrum of environmental concerns is adequately represented, and that a reasonable choice of alternatives is selected for evaluation in the EIR.

Given the CEQA mandates listed above, the remainder of this section covers: (1) a brief description of a range of reasonable alternatives to the Proposed Project; (2) a screening analysis that summarizes and compares the significant environmental effects of each alternative; and (3) an environmental analysis of the alternatives that were selected for further consideration in the EIR.

5.1 Description of Alternatives and Screening Analysis

A variety of alternatives for the Project were considered in a screening analysis to determine potential alternatives that might produce fewer significant impacts than the Proposed Project. The approach taken was to list a wide number of possible alternatives and then screen those to only the alternatives that would satisfy the following:

- The alternative is technically feasible;
- The alternative would lessen the potentially significant impacts of the Proposed Project; and
- The alternative would attain most of the basic objectives of the Project.

Since detailed analyses of the alternatives and the Proposed Project have not been completed at this stage of analysis, this assessment is preliminary and based on the best judgment of the preparers.

Alternatives considered included those associated with throughput increase quantities, transportation modes, product-unloading locations, and the use of different product transportation routes.

This section further discusses seven alternatives, including:

- No Project Alternative;
- Reduced Refinery Throughput Increase;

- Increased Rail Transport;
- Santa Maria Refinery Truck Unloading;
- Summit Pump Station Truck Unloading ;
- Orcutt Pump Station Truck Unloading; and
- Alternative Transportation Routes.

Table 5-1 lists the alternatives considered and eliminated from further consideration and those that are analyzed in the document. Figure 5-1 shows the locations of the alternatives.

Table 5-1 Evaluation and Selection of Potential Alternatives

Alternatives Eliminated from Consideration	Alternatives Evaluated in this EIR
Reduced Refinery Throughput Increase Increased Rail Transport Santa Maria Refinery Truck Unloading Orcutt Pump Station Truck Unloading	No Project Alternative Summit Pump Station Truck Unloading Alternative Transportation Routes

5.2 No Project Alternative

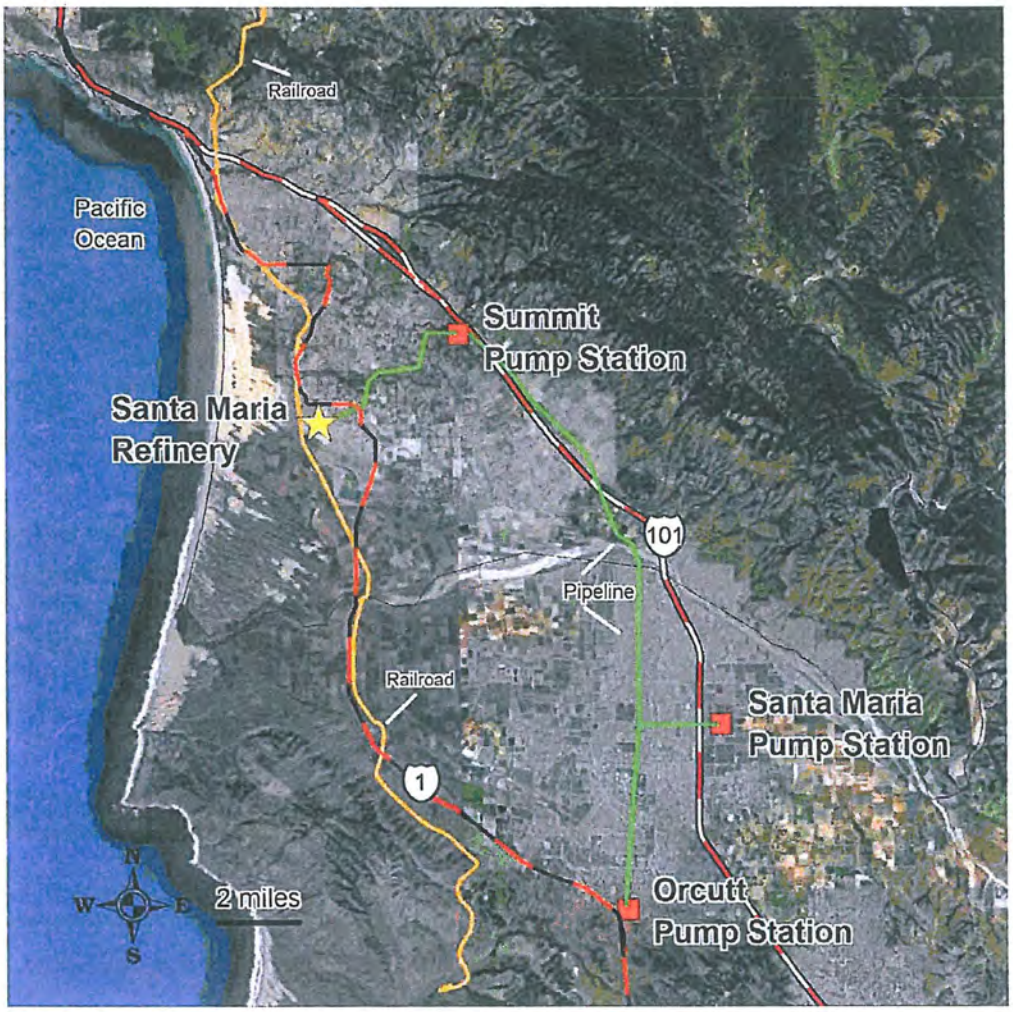
The CEQA Guidelines require that the specific alternative of the "No Project" be evaluated along with its impacts as part of the EIR (CEQA Guidelines Section 15126.6(e) (1)). For projects other than a land use or regulatory plan, the No Project Alternative is the circumstances under which the Project does not proceed. If disapproval of the Project under consideration would result in predictable actions by others, such as the proposal for another Project, this No Project consequence should be discussed (CEQA Guidelines Section 15126.6(e)(3)(B)). The CEQA Guidelines go on to say that the Lead Agency should analyze the impacts of the No Project Alternative by projecting what would reasonably be expected to occur in the foreseeable future if the Proposed Project was not approved (Guidelines Section 15126.6(e)(3)(C)).

The Applicant's Proposed Project is to increase the permitted volume of processed crude oil and to process previously refined gas/oil petroleum liquid under the definition of crude oil at the Santa Maria Refinery.

With the No Project Alternative, the throughput increase and the importing of previously refined oil would not occur at the Santa Maria Refinery. Under the No Project Alternative, no new activity would take place at the Santa Maria Refinery.

Since CEQA requires that the No Project Alternative be analyzed in the EIR, it is assumed that this alternative would be carried forward for review in the EIR and therefore, this alternative does not need to be addressed in the screening analysis.

Figure 5-1 Location of Alternatives



5.3 Reduced Refinery Throughput Increase

With this alternative, the Project would be limited to a five percent throughput increase of crude oil at the Santa Maria Refinery, instead of the Proposed Project 10 percent increase. The daily maximum limit of crude oil would increase to 46,725 barrels per day. The 12-month rolling average of crude throughput would increase to 17,054,625 barrels per year.

As with the Proposed Project, current suppliers would provide increased volumes of crude oil but only half the increase of the Proposed Project. Several different sources could supply previously refined gas/oil petroleum liquid, including a Refinery in Bakersfield. Trucks and rail trips would still transport coke and other products away from the Refinery (similar to the ongoing process at the Santa Maria Refinery). Previously refined gas/oil petroleum liquids would be trucked to the Santa Maria Pump Station by the supplier and added to the pipeline in the same manner currently used for crude oil from Arroyo Grande and other production area sources.

Both crude oil and previously refined oil/gas petroleum liquid would be processed at the Refinery under the Proposed Project. Crude oil processing could increase whether or not any previously refined gas/oil petroleum liquid is imported from suppliers in Bakersfield or other areas and utilized at the Santa Maria Refinery. Conversely, throughput volumes of crude oil may not increase since some of the current crude oil throughput volumes would be replaced with previously refined gas/oil petroleum liquid. No changes to the overall processing methods are proposed.

As with the Proposed Project, this alternative could cause the following changes at the Santa Maria Refinery:

- An increase in materials and volumes of crude oil shipped via pipeline from the Santa Maria Pump Station to the Santa Maria Refinery;
- An increase in volume of products leaving the Santa Maria Refinery for the ConocoPhillips Rodeo Refinery via pipeline;
- An increase in volume of green coke and sulfur production; and
- An increase in shipments of green coke and sulfur leaving the facility by either truck or railcar.

As with the Proposed Project, this alternative could cause an increase in truck trips from the Refinery. The Project could result in an increase in truck trips to/from the Santa Maria Pump Station to transport crude or previously refined gas/oil. The project may increase truck trips from the Refinery to transport an increase in solid petroleum coke and sulfur. In addition, processes at the Refinery would emit more pollutants since more crude oil could be processed. It should be noted that the Santa Maria Refinery provides a site for processing of local crudes that may otherwise have to travel farther to be processed.

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Impacts associated with this Project would be somewhat smaller in magnitude than the Proposed Project impacts but nonetheless similar. Truck trips and air emissions would decrease compared to the Proposed Project, but would still represent an increase in truck trips and air emissions above the baseline. However, since this alternative is simply a scaled-back version of the

Proposed Project, it would not have any environmental benefits compared to the Proposed Project and it would not achieve all the objectives of the Project. Consequently, this alternative has been eliminated from further consideration.

5.4 Increased Rail Transport

Under this alternative, an increased amount of solid petroleum coke and recovered sulfur would leave the Santa Maria Refinery by rail, thereby reducing the number of truck trips. Logistically, transporting solid petroleum coke via railcars includes multiple-unit trains, typically 22 cars carrying approximately 100 tons each. Under this alternative, the amount of coke shipped by rail would be set at a minimum level and similar rail requirements would apply to recovered sulfur transport.

Solid petroleum coke would be shipped outside of San Luis Obispo County via railcar to customers as fuel or onto ships for export. Major petroleum coke destinations include Mojave, Victorville, Cupertino, Fontana, Lebec, Gorman, and Long Beach. When market conditions allow and as logistically possible, recovered sulfur would be shipped outside of San Luis Obispo County via railcar to customers in the agricultural industry or loaded on ships for export. Sulfur destinations include the San Joaquin Valley, from Bakersfield to Fresno, and Long Beach.

Since 2003, no recovered sulfur has been transported via rail, while approximately twice as much solid petroleum coke was transported by truck than by rail. The feasibility of this scenario as a viable alternative would depend on the ability of customers to receive rail transport at their respective locations.

This alternative could reduce impacts by potentially reducing truck transport requirements, which would result in reduced air emissions and truck traffic. However, for destinations in the Central Valley, the coke may need to be offloaded and then subsequently transported by truck from Los Angeles, negating any potential reduction in impacts. In addition, market forces primarily dictate the choice to utilize rail over truck, because destinations that can utilize rail prefer it since it is less expensive. Therefore, this alternative is considered not feasible and has been eliminated from further consideration.

5.5 Santa Maria Refinery Truck Unloading

Under this alternative, the majority of the 10 percent increase in crude oil needed for the throughput increase would come from the Arroyo Grande, San Ardo, and other oil fields north of the Refinery. The crude oil would be delivered directly to the Santa Maria Refinery by truck and would bypass pipeline delivery via the Santa Maria Pump Station.

The trucks associated with the 10 percent increase in crude oil needed for the throughput increase that would typically deliver crude oil to the Santa Maria Pump Station would be re-routed to the Refinery from the Santa Maria Pump Station.

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This alternative would require construction of an offloading rack, vapor recovery systems and

new storage tanks in addition to new pumps and compressors for a new Refinery crude offloading unit. However, it would reduce air emissions from trucks transporting crude oil from northern oil fields (such as Arroyo Grande and San Ardo) since the distance from these northern fields to the Refinery is approximately 10 miles less than transporting the crude oil to the Santa Maria Pump Station. The Santa Maria Pump Station is farther south than the Refinery. However, this alternative would also increase truck traffic along area roadways between U.S. Highway 101 and the Refinery. Given the amount of community concern over truck traffic near the Refinery and the current heavy level of truck traffic contributing to noise and traffic issues, increased truck traffic in the vicinity of the Refinery would have greater impacts than the Proposed Project. Therefore, this alternative has been eliminated from further consideration.

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5.6 Summit Pump Station Truck Unloading

Under this alternative, the majority of the 10 percent increase in crude oil needed for the throughput increase would come from the Arroyo Grande and San Ardo Oil Fields north of the Refinery. This alternative would require construction of an unloading rack, vapor recovery systems that include pumps, compressors and new storage tanks at the Summit Pump Station. It would also require operating attendants and security staff thereby increasing daily traffic to the site. However, crude oil would be unloaded by truck at the Summit Pump Station rather than at the Santa Maria Pump Station. Crude oil unloaded at the Summit Pump Station would then be transferred via pipeline to the Santa Maria Refinery.

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The Summit Pump Station currently consists of only pumps and minimal storage tanks. Therefore, it would be necessary to construct a new truck unloading facility, most likely including increased crude oil storage facilities. The new truck loading facility would be designed to unload one truck at a time and be constructed to hold a 2-day supply of crude oil (i.e., 10,000 barrels in a single 10,000-barrel tank). The new truck loading facility, consisting of a truck loading rack and a 10,000-barrel crude oil storage tank, would require permitting from the APCD. Due to increased truck traffic along area roads, the access road to the Summit Pump Station would also require improvement.

This alternative could have the potential benefit that in addition to the transportation of crude oil associated with the10 percent increase proposed by the Project, existing truck trips would also be re-routed to the Summit Pump Station from the Santa Maria Pump Station.

This alternative would reduce air emissions from trucks transporting crude oil from northern oil fields (such as Arroyo Grande and San Ardo) since the distance from these northern fields to the Summit Pump Station is approximately 13 miles less than the distance to the Santa Maria Pump Station. The Santa Maria Pump Station is farther south than the Summit Pump Station. However, this alternative would also increase truck traffic along area roadways between U.S. Highway 101 and the Summit Pump Station. However, the potential air quality benefits of this alternative justify retaining it for further consideration.

5.7 Orcutt Pump Station Truck Unloading

Under this alternative, crude oil from fields to the south of the Refinery in the Santa Maria and

Orcutt areas, such as Greka, would be unloaded by truck at the Orcutt Pump Station instead of at the Santa Maria Pump Station. Crude oil unloaded at the Orcutt Pump Station would then be transferred via pipeline to the Santa Maria Refinery. Under this scenario, crude oil delivered by truck to the Santa Maria Pump Station from northern fields, such as Arroyo Grande and San Ardo, would continue to be transferred to the Santa Maria Pump Station by truck.

The Orcutt Pump Station currently consists of only one unheated floating roof tank with a capacity of 23,000 barrels. Therefore, it would be necessary to construct a truck loading facility designed to unload one truck at a time (TRP 2002). The truck loading facility would require a truck loading rack to receive crude oil, which would require permitting by the APCD.

Based on 2009 truck trip numbers, annual crude deliveries to the Orcutt Pump Station by trucks from Greka and other southern fields would amount to approximately 1,300 truck trips under this alternative. These would not be new truck trips; existing truck trips would be re-routed to the Orcutt Pump Station from of the Santa Maria Pump Station.

This alternative would reduce air emissions from trucks transporting crude oil from southern oil fields since these southern fields are closer to the Orcutt Pump Station than the Santa Maria Pump Station. The Santa Maria Pump Station is approximately 5 miles farther north than the Orcutt Pump Station. However, many of the southern fields are near the Santa Maria Pump Station, particularly the Cat Canyon fields, and fields close to the Orcutt Pump Station currently utilize the Orcutt Pump Station by transporting their crude oil in pipelines already connected to the Orcutt Pump Station. Therefore, the benefits of this alternative appear limited and it has been eliminated from further consideration.

5.8 Alternative Transportation Routes

This alternative evaluation considers alternative access roads leaving the Santa Maria Refinery traveling north, south and east for shipments of green coke and sulfur. The following access route alternatives are alternatives to the access routes included under the Proposed Project:

- Northbound Route Alternative;
- Eastbound Route Alternative; and
- Southbound Route Alternative.

5.8.1 Northbound Route Alternative

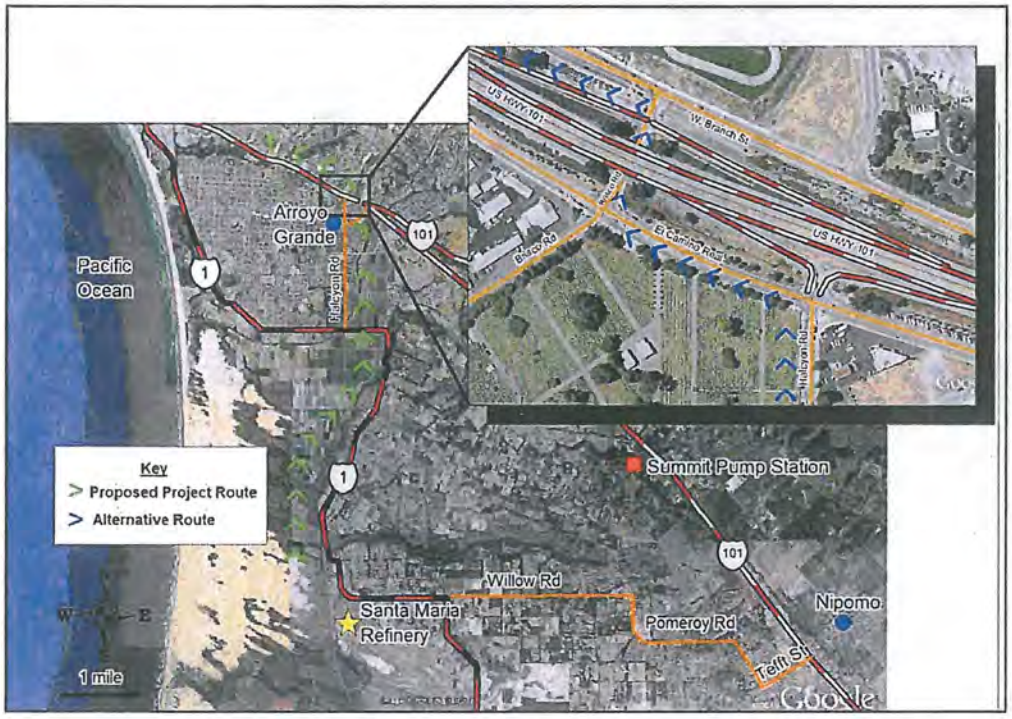
Under this alternative, northbound U.S. Highway 101 would be accessed via Brisco Road as opposed to Grande Avenue under the Proposed Project (see Figure 5-2).

Santa Maria Refinery traffic traveling northbound from the Project site would use the following route: State Route 1 (Willow Road which turns into Mesa View Drive into Cienaga Street) north to S. Halcyon Road; S. Halcyon Road, which turns into N. Halcyon Road, to El Camino Real; west on El Camino Real to Brisco Road; and north on Brisco Road to U.S. Highway 101 NB ramp. State Route 1 intersects S. Halcyon Road twice. Truck traffic is prohibited on the segment

of S. Halcyon Drive south of Arroyo Grande Creek due to a significant grade up to the Mesa (SLOC 2006).

Impacts would most likely increase under this alternative since the access to Brisco Road and Highway 101 onramps is constrained and would present potential maneuvering challenges, as well as reduce intersection levels of service with the addition of trucks headed to and from the Refinery. Therefore, this alternative route has been eliminated from further consideration.

Figure 5-2 Northbound Route Alternative



5.8.2 Eastbound Route Alternative

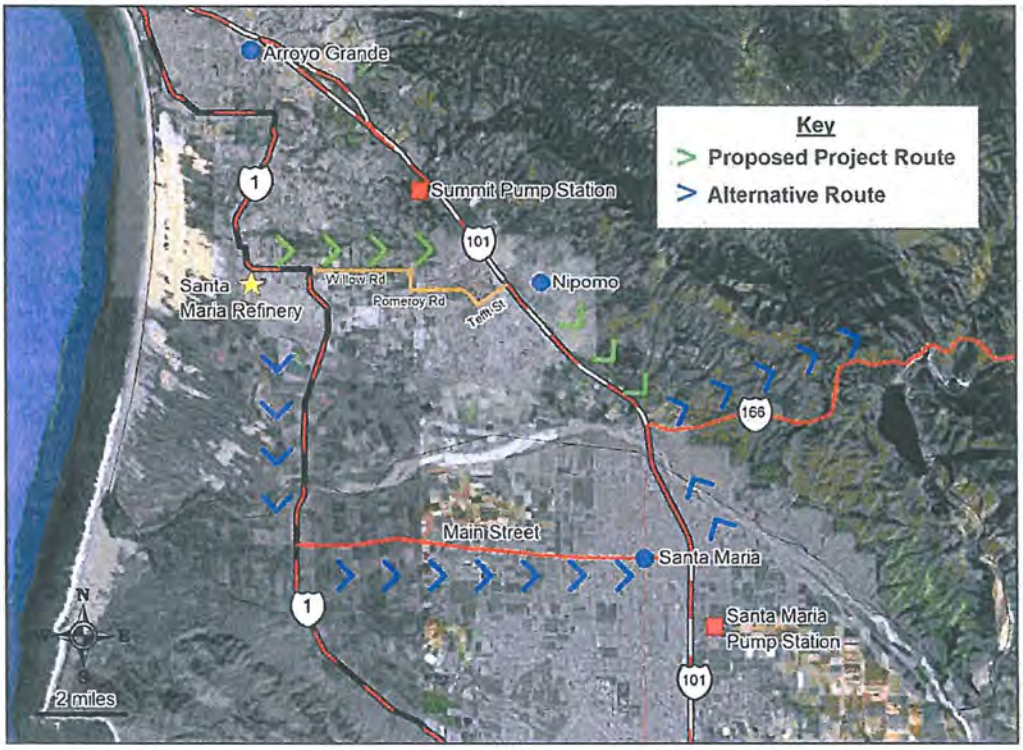
Under this alternative, eastbound State Route 166 would be accessed via Guadalupe and Santa Maria as opposed to Nipomo under the Proposed Project. See Figure 5-3.

Santa Maria Refinery traffic traveling eastbound to State Route 166 from the Project site would use the following route: State Route 1 (Willow Road, which turns into Guadalupe Road) east and then south to State Route 166 (W. Main Street) in Guadalupe; east on State Route 166 to U.S. Highway 101 in Santa Maria; north on U.S. Highway 101 to State Route 166 (Cuyama Highway); and east on State Route 166.

Although this route would decrease traffic impacts along Willow Road, Pomeroy Road, and

Tefft Street, impacts would increase along Main Street in Santa Maria. Therefore, the benefits of this alternative route are minimal and it has been eliminated from further consideration. However, it may be considered as a mitigation measure in the traffic analysis if traffic levels become unacceptable along the Willow Road, Pomeroy Road, and Tefft Street route.

Figure 5-3 Eastbound Route Alternative



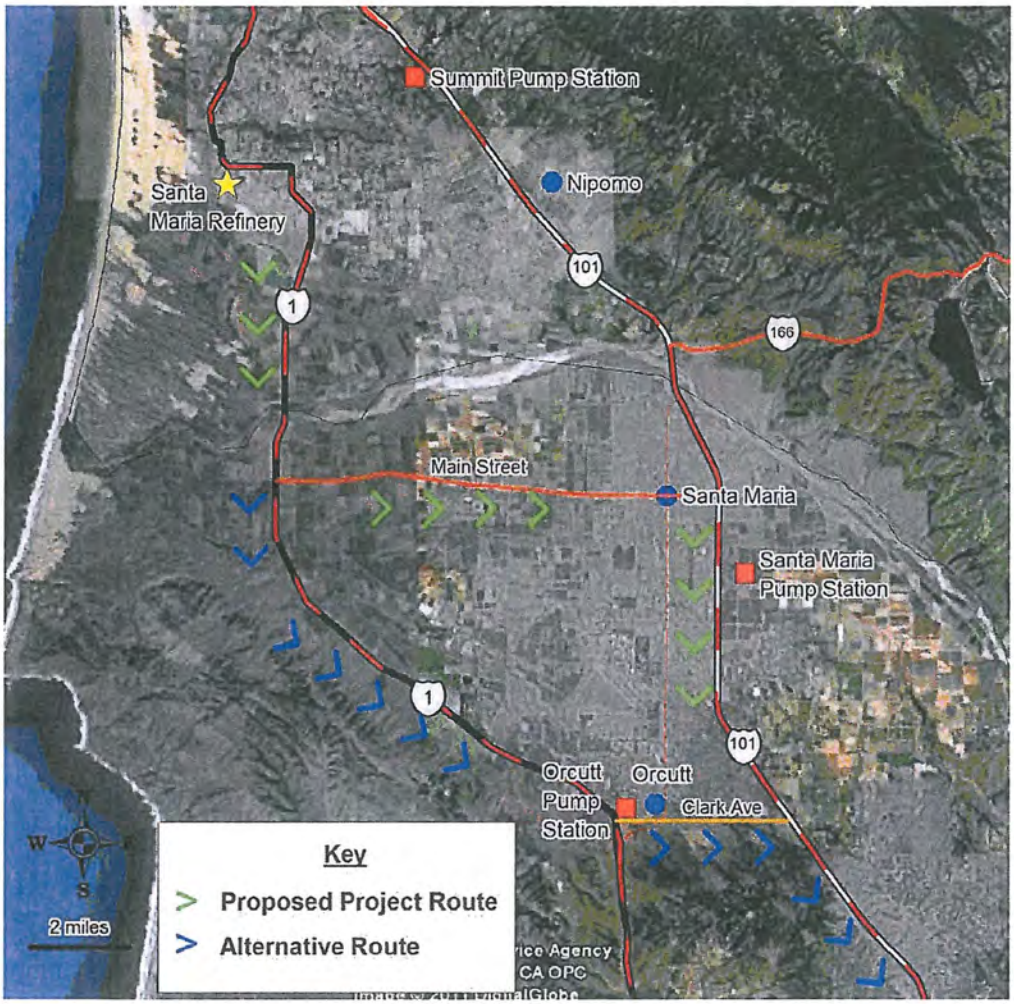
5.8.3 Southbound Route Alternative

Under this alternative, southbound U.S. Highway 101 would be accessed via Orcutt as opposed to Santa Maria under the Proposed Project. See Figure 5-4.

Santa Maria Refinery traffic traveling southbound to U.S. Highway 101 from the Project site would use the following route: State Route 1 (Willow Road, which turns into Guadalupe Road then Cabrillo Highway and lastly Casmalia Road) east and then south to W. Clark Avenue; and east on W. Clark Avenue (which becomes E. Clark Avenue) to U.S. Highway 101 SB ramp.

Since this alternative route avoids most residential areas and reduces traffic along Main Street through Santa Maria, it has been retained for further analysis.

Figure 5-4 Southbound Route Alternative



5.9 Impacts of Alternatives

Table 5-2 shows the estimated impacts of the alternatives relative to the Proposed Project for the respective issue areas.

Table 5-2 Alternative Screening Analysis – Impacts Relative to Proposed Project (Non-Transportation Routes)

Comment [F1]: Please see comments in cover letter dated Oct. 31, 2011 1

Issue Area	Reduced Refinery Throughput Increase	Increased Rail Transport	Santa Maria Refinery Truck Unloading	Summit Pump Station Unloading	Orcutt Pump Station Unloading
Air Quality	Less Reduced crude throughput and semi-refined crude oil would generate fewer emissions.	Similar Fewer truck trips would result in reduce vehicle emissions. However, this could generate more truck trips in other areas depending on market forces and destinations.	Less Less distance traveled by trucks would generate fewer emissions. New Construction required 2	Less Less distance traveled by trucks would generate fewer emissions. New Construction required, 3	Similar Not clear the extent to which the Orcutt is closer to the fields than Santa Maria.
Hazardous Wastes	Same Reduced crude throughput and semi-refined crude oil would not impact site contamination or the baseline.	Same	Same	Same	Same
Noise and Vibration	Less Fewer truck trips and subsequent loading would result in less vehicle-related noise and vibration.	Similar Fewer truck trips near the Refinery could reduce noise and vibration, nut more rail trips and additional trucks in other areas could also increase noise and vibration.	More Increase truck trips and subsequent unloading near the Refinery residential areas would generate more vehicle-related noise and vibration. The Santa Maria Pump Station is not located in residential areas.	More Truck trips and subsequent unloading would generate more vehicle-related noise and vibrations at the Summit Pump Station residential receptors compared to the Proposed Project.	More Truck trips and subsequent unloading would generate more vehicle-related noise and vibrations at the Orcutt Pump Station compared to the Proposed Project, which is located in a more residential area than the Santa Maria Pump Station.
Public Safety	Same	Same	Same	Same	Same

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Issue Area	Reduced Refinery Throughput Increase	Increased Rail Transport	Santa Maria Refinery Truck Unloading	Summit Pump Station Unloading	Orcutt Pump Station Unloading
Public Services	Same	Same	Same	Same	Same
Transportation	Less Fewer truck trips would result compared to the Proposed Project.	Less Fewer truck trips would result compared to the Proposed Project.	[1] New Construction required More Truck trips would increase compared to the Proposed Project along area and residential roadways.	[2] New Construction Required. Need to add pumps and Vapor Recovery system with compressors. [3] More Truck trips and subsequent unloading would generate more vehicle trips at the Pump Station and along residential areas compared to the Proposed Project.	More Truck trips and subsequent unloading would generate more vehicle trips at the Pump Station and along residential areas compared to the Proposed Project.
Water Quality	Same	Same	Same	Same	Same
Water Quantity	Less May require less water if the Refinery throughput is less than the Proposed Project	Same	Same	Same	Same
Biological Resources	Same	Same	Same	Same	Same
Land Use	Same	Same	New Construction required [4] More Increased truck trips and subsequent unloading would increase activities at the Project site compared to the Proposed Project.	New Construction required [5] More Truck trips and subsequent unloading would increase activities at the Pump Station compared to the Proposed Project.	More Truck trips and subsequent unloading would increase activities at the Pump Station compared to the Proposed Project.

6.0 Comparison of Proposed Project and Alternatives

This chapter summarizes the environmental advantages and disadvantages associated with the Proposed Project and the alternatives. Based upon this discussion, the environmentally superior alternative is selected as required by the California Environmental Quality Act (CEQA.). The State CEQA Guidelines, Section 15126 (d) (2), state that if the environmentally superior alternative is the No Project Alternative, then the next most environmentally preferred alternative must also be identified.

CEQA does not provide specific direction regarding the methodology of comparing alternatives and the Proposed Project. Each Project must be evaluated for the issues and impacts that are most important; this will vary depending on the project type and the environmental setting. Issue areas with significant long-term impacts are generally given more weight in comparing alternatives. Impacts that are short-term (e.g., construction-related impacts) or those that are mitigable to less than significant levels are generally considered to be less important.

This comparison is designed to satisfy the requirements of State CEQA Guidelines, Section 15126.6(d), Evaluation of Alternatives, which state that:

> The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed..

In accordance with State CEQA Guidelines Section 15126.6(d), this Environmental Impact Report (EIR) provides sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project and the other alternatives. Assumptions made regarding the alternatives' descriptions could differ from actual proposals and the analyses are not presented with project-level detail. Different alternative Project configurations and a project-level environmental analysis could result in different conclusions from those presented herein.

The following methodology was used to compare alternatives and the Proposed Project in this EIR:

- **Step 1: Identification of Alternatives**. Alternatives screening process (described in Section 5.0) identified a range of alternatives to the Proposed Project. That screening analysis selected alternatives for further consideration. The No Project Alternative is also evaluated in the EIR as required by CEQA.
- **Step 2: Determination of Environmental Impacts**. The environmental impacts of the selected alternatives are identified in Section 6.1.
- **Step 3: Comparison of Proposed Project with Alternatives**. Section 6.1 also analyzes the impacts that could occur with the alternatives selected for further review. This section discusses how these impacts would vary for each alternative relative to the Proposed Project.

- **Step 4: Selection of the Environmentally Superior Alternative.** Section 6.2, Environmentally Superior Alternative, provides a detailed comparison of the environmental effects of the Proposed Project and the selected alternatives.

6.1 Environmental Analysis of Selected Alternatives

Section 5.0, Alternatives, considered the following six alternatives:

- No Project;
- Reduced Refinery Throughput Increase;
- Increased Rail Transport;
- Santa Maria Refinery Truck Unloading;
- Summit Pump Station Truck Unloading; and
- Orcutt Pump Station Truck Unloading.

Based on the screening analysis in Section 5.0, Alternatives, one alternative (in addition to the No Project Alternative), the Summit Pump Station Truck Unloading Site, was selected for further evaluation in this EIR.

The alternative transportation routes considered in Section 5.0, Alternatives, are

- Northbound Route Alternative;
- Eastbound Route Alternative; and
- Southbound Route Alternative.

Based on the screening analysis in Section 5.0, the Southbound Route Alternative was selected for further evaluation.

The remainder of this section analyzes the environmental impacts of the alternatives selected for further evaluation.

6.1.1 No Project Alternative

Under the No Project Alternative, no increase in throughput would take place at the Santa Maria Refinery. With the No Project Alternative, crude oil throughput would not increase and previously refined oil would not be imported at the Santa Maria Refinery. The Applicant's Proposed Project is to increase the permitted volume of processed crude oil and to process previously refined gas/oil petroleum liquid under the definition of crude oil at the Santa Maria Refinery.

Therefore, impacts associated with the Project's throughput increase would not occur and the area would remain in its current condition.

6.1.2 Summit Pump Station Truck Unloading Alternative

The following sections discuss impacts to each issue area associated with the Summit Pump Station Truck Unloading Alternative.

6.1.2.1 Air Quality

This alternative would require ConocoPhillips to construct new storage tanks under a vapor recovery system. It would also require installation of pumps and compressors at the residential site. The site would then need to be manned to ensure proper operation and prevent vandalism. However, the proposed alternative would reduce air emissions from trucks transporting crude oil from northern oil fields (such as Arroyo Grande and San Ardo). The Summit Pump Station is farther north than the Santa Maria Pump Station and, therefore, the distance from these northern fields to the Summit Pump Station is less than the distance to the Santa Maria Pump Station. However, this alternative would increase trucking distances for trucks coming from the south. The average crude volume-weighted distance associated with this alternative would be 56 miles, compared to 66 volume-weighted miles for current operations and the Proposed Project, which is a savings of approximately 10 miles per truck trip. This correlates to a savings of approximately 16 pounds per day of NOx emissions for all the truck trips. Impact AQ.1 would remain significant, and although NOx emissions associated with this alternative would be less than the Proposed Project emissions, the truck emissions would still be a significant impact (Class I). Mitigation measures AQ-1.1 and AQ-1.2 would still apply.

Odor issues related to the Santa Maria Facility (SMF) would be the same as impact AQ.2 and mitigation measure AQ-2 would still apply. However, the installation of a crude oil tank could increase odor issues at the Summit Pump Station.

Impact #	Impact Description	Residual Impact
AQ.a1	Alternative operations at the Summit Pump Station could increase odor events.	Class II

Construct new crude oil tank, vapor recovery system and installing pumps and compressos at the Summit Pump Station could increase the frequency of noise and odor events for residences in the vicinity. Crude oil tanks can leak vapors from the seals each time the floating roof lowers with changing crude oil levels. Leaked vapors from crude oil tanks would be a significant impact that could be mitigated by installing vapor recovery units and appropriate seals, and proper maintenance on the tank.

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Mitigation Measures

AQ-a1 *The Applicant shall install vapor recovery units and emission controlling seals on the crude oil tank and ensure proper maintenance on the crude oil tank. The Odor Control Plan, created pursuant to mitigation measure AQ.2-1, shall include these measures.*

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Residual Impacts

Implementing the recommended mitigation measure would help minimize odor events from the Summit Pump Station. Impacts would be less than significant with mitigation.

Impact AQ.3 related to greenhouse gases would be similar to the Proposed Project, although with the shorter truck travel distances, it would be marginally less severe.

Impact AQ.4 related to toxic risk would be the same as for the SMF and mitigation measure AQ-4 would still apply. The transportation of crude oil along Dale Avenue to the Summit Pump Station would increase the emissions of diesel particulates along Dale Avenue and would impact residences in the area. Modeling associated with truck traffic along area routes indicates that the truck traffic would not be high enough to exceed the Air Pollution Control District thresholds for health risk.

6.1.2.2 Public Safety and Hazardous Materials

This alternative would include the construction and operation of a new truck unloading facility to include a truck loading rack and a 10,000-barrel crude oil storage tank. Impacts associated with a crude oil spill and subsequent fire could impact the area around the Summit Pump Station. Residences and public roadways are within 250 feet of the Summit Pump Station. Thermal impacts from a crude oil fire would not reach residences; however, a crude oil fire could cause wildfire impacts to the area since the Summit Pump Station is in a heavily vegetative area. A wildfire could cause impacts to nearby residences.

Impact PSHM.1 related to accidental releases of hazardous materials from the SMF would be the same as the Proposed Project. However, impacts associated with a crude oil fire could be significant due to the heavily vegetative area.

Impact #	Impact Description	Residual Impact
PSHM.a1	Alternative operations at the Summit Pump Station could increase the risk of fire in the area.	Class II

Installing a crude oil tank at the Summit Pump Station could increase the risk of crude oil fires at the Summit Pump Station. Although the frequency of crude oil fire is low, and thermal radiation would not impact residences, a fire could impact nearby vegetation causing subsequent impacts to residences. This could be a significant impact.

Mitigation Measures

PSHM-a1 *The Applicant shall install fire detection and fire fighting capabilities, including fire foam systems, at the Summit Pump Station, and shall implement vegetative fuel modifications to reduce the potential for a crude fire to impact nearby residences.*

Residual Impacts

Implementing the recommended mitigation measure would help to ensure that a crude oil fire at

the Summit Pump Station would not impact nearby residences. Impacts would be less than significant with mitigation.

Impact PSHM.2 related to transportation of product along local and area roadways would be the same as the Proposed Project and would be less than significant.

6.1.2.3 Noise and Vibration

Noise impacts of this alternative would be the same as **impact N.1** related to noise impacts from the Proposed Project.

Under this alternative, crude oil from oilfields north of the SMF would be unloaded by truck at the Summit Pump Station rather than at the SMF. Impacts would be more severe than those associated with the Proposed Project. **Impact N.2**, related to transportation noise, would be more severe since truck trips and subsequent unloading would generate vehicle-related noise at the Summit Pump Station. Residential receptors are within 250 feet of the Summit Pump Station and the unloading noise would create impacts at these receptors. However, unloading noise is not expected to be substantial and the impact would be less than significant.

Although the area is rural, it is close to U.S. Highway 101, which currently creates a relatively high background noise level. The San Luis Obispo County Noise Element indicates that some of the residences in this area are within the 60- to 65-dBA Ldn contour for U.S. Highway 101. This alternative would introduce an estimated five trucks per hour, which would produce an approximately 57-dBA hourly average noise level during the daytime 50 feet from Dale Avenue. Considering the 60-dBA background noise from U.S. Highway 101, noise levels at the residences closest to Dale Avenue would increase less than 2 dBA, which would be less than a significant impact.

However, the noise associated with trucks moving along Dale Avenue to access the Summit Pump Station would have a greater impact on residences than current operations or the Proposed Project at the Santa Maria Pump Station since there are no residences along the route. Noise impacts would therefore be more severe, but still less than significant.

6.1.2.4 Public Services and Utilities

This alternative would include the construction and operation of a new truck unloading facility to include a truck loading rack and a 10,000-barrel crude oil storage tank.

Impact PS.1 related to increased water use during throughput increase operations would be the same as the Proposed Project. Therefore, impacts related to an increased demand for water would remain less than significant.

Impact PS.2 related to increased wastewater during throughput increase operations would be the same as the Proposed Project and would remain less than significant.

Impact PS.3 related to increased solid waste generation during throughput increase operations would remain unchanged from the Proposed Project and would remain less than significant.

Impact PS.4 related to increased electricity consumption during throughput increase operations would remain unchanged from the Proposed Project since operations would require the same energy levels. Therefore, impacts from increased electricity demand would remain less than significant.

Impact PS.5 related to increased fossil fuel consumption and production during throughput increase operations would remain unchanged from the Proposed Project since operations would require the same energy levels. Therefore, impacts from increased fossil fuel use would remain less than significant.

Impact PS.6 related to fire protection and emergency response would remain unchanged from the Proposed Project at the SMF. However, installing crude storage facilities at the Summit Pump Station would increase the risk of wildfire at the heavily vegetated site and would increase fire response issues in the area surrounding the Summit Pump Station. However, these impacts could be mitigated and the storage of crude oil would not exceed the capabilities of area fire response agencies. Therefore, impacts related to fire water supplies, fire protection and emergency response would remain less than significant.

6.1.2.5 Land Use and Policy Consistency Analysis

Under this alternative, trucks would unload crude oil from oilfields north of the SMF at the Summit Pump Station rather than at the SMF. Impacts would be greater than those associated with the Proposed Project since truck trips and subsequent unloading would increase activities at the Summit Pump Station compared to the Proposed Project.

Impact LU.1 related to increased noise levels in the area due to operational increases would remain unchanged from the Proposed Project and would remain less than significant with mitigation.

Impact LU.2 related to the increased frequency or duration of odor events due to operational activities would remain unchanged from the Proposed Project and would remain less than significant with mitigation.

6.1.2.6 Water Resources

This alternative would include the construction and operation of a new truck unloading facility to include a truck loading rack and a 10,000-barrel crude oil storage tank. Water resource impacts would also be similar to the Proposed Project since the unloading facility at the Summit Pump Station would not use any water resources.

6.1.2.7 Transportation

Under this Alternative, trucks would unload crude oil from oilfields north of the SMF at the Summit Pump Station rather than at the SMF. Truck traffic would increase at the Thompson Road and U.S. Highway 101 intersection, at the Thompson Road and Dale Avenue intersection, and along Dale Avenue. Currently, none of those intersections or roadways are impacted by

traffic. However, impacts would be greater than those associated with the Proposed Project, since truck trips and subsequent unloading would generate more vehicle trips at the Summit Pump Station along residential areas compared to the Proposed Project. The current unloading location at the Santa Maria Pump Station is in an agricultural area and there are no residences nearby.

Impact T.1 related to increased traffic on local roads and the freeway, would be more severe than the Proposed Project as more vehicle trips along residential areas at the Summit Pump Station would be generated. However, impacts would be less than significant.

6.1.2.8 Other Issue Areas

Under this alternative, crude oil would be stored at the Summit Pump Station in a new crude oil tank. The installation and operation of the tank could cause aesthetic impacts to nearby residences. However, these impacts could be mitigated with vegetative plantings. The pump station currently includes some smaller tanks, as well as a building, fencing, and some other industrial structures.

Construction activities associated with installing the tank could disturb cultural artifacts. However, construction would occur within the fence line of the Summit Pump Station. Archeologists present to observe the construction excavations and grading could mitigate these impacts.

There would not be any impacts associated with the remaining issue areas.

6.1.3 Southbound Route Alternative

Under the Southbound Route Alternative, southbound U.S. Highway 101 would be accessed through Orcutt, rather than Santa Maria under the Proposed Project.

Santa Maria Refinery traffic traveling southbound to U.S. Highway 101 from the Project Site would use the following route: State Route 1 (Willow Road, which turns into Guadalupe Road then Cabrillo Highway and lastly Casmalia Road) east and then south to W. Clark Avenue; and east on W. Clark Avenue (which becomes E. Clark Avenue) to U.S. Highway 101 southbound ramp.

This alternative route avoids most residential areas and reduces traffic along Main Street through Santa Maria.

6.1.3.1 Air Quality

This alternative would reduce air emissions from trucks transporting solid petroleum coke and recovered sulfur from the SMF southbound to customers outside of San Luis Obispo County by avoiding traffic congestion along Main Street in Santa Maria. However, since the route is a similar distance, impacts to air quality would be similar.

6.1.3.2 Public Safety and Hazardous Materials

The Southbound Route Alternative would not produce any additional or different impacts to safety and risk over the Proposed Project.

6.1.3.3 Noise and Vibration

The Southbound Route Alternative would not produce any additional impacts to noise and vibration over the Proposed Project.

6.1.3.4 Public Services and Utilities

The Southbound Route Alternative would not produce any additional impacts to public services over the Proposed Project.

6.1.3.5 Land Use and Policy Consistency Analysis

The Southbound Route Alternative would not produce any additional impacts to land use and policy consistency over the Proposed Project.

6.1.3.6 Transportation

The Southbound Route Alternative would avoid the use of the intersection of Main Street/Highway 166 and Broadway Street in Santa Maria, which currently operates at a level of service of C. However, traffic from the Proposed Project could cause an impact at this intersection. Therefore, this alternative would not produce any additional impacts to transportation compared to the Proposed Project and would create minor advantages by avoiding a partially impacted intersection.

6.1.3.7 Water Resources

The Southbound Route Alternative would not produce any additional impacts to aesthetics and visual resources over the Proposed Project.

6.1.3.8 Other Issue Areas

The Southbound Route Alternative would not produce any additional impacts to other issue areas.

Comparison of Proposed Project and Alternatives

The CEQA Guidelines (Section 15126.6 [d]) require that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project. The Guidelines (Section 15126.6 [e][2]) further state, in part, that "if the environmentally superior alternative is the 'No Project Alternative,' the EIR shall also identify an environmentally superior alternative among the other alternatives."

The following discussion compares impacts associated with the Proposed Project with those associated with the No Project Alternative and the other alternatives. These impacts are

identified as a result of the analysis provided in Chapter 4.0, Environmental Analysis, and Section 6.0. An alternative would be considered superior to the Proposed Project if there would be a reduction in impact classification. In cases where the impact from an alternative is in the same class as for the Proposed Project, differences in severity of the impact are analyzed.

Table 6-1 compares the Proposed Project and each of the alternatives for each impact identified in the issue areas. For impacts that are the same classification, an increase or decrease in severity is denoted with an up or down arrow, respectively.

Table 6-1 Summary of Environmental Impacts for the Proposed Project and Alternatives

Comment [F1]: Please review this and consider comments in cover letter dated Oct. 31, 2011 1

NI = No Impact; NA = Not Applicable; NC = Not Classified

↑↓ = Increase/decrease in severity

- For the Summit Pump Station Truck Unloading and the Southbound Route alternatives, these are alternatives to the Proposed Project components and are listed with a dash if they would not affect the Proposed Project impacts.

Impact #	Impact Description	Proposed Project	Summit Pump Station Truck Unloading	Southbound Route	Explanation
Section 4.1 Air Quality					
AQ.1	Operational Emissions	I	I↓	I	The Summit Pump Station would reduce emissions as trucks would travel less distance on average.
AQ.2	Odor Events	II	II↑	II	Alternatives would be similar except that a crude oil tank could increase the frequency of odor events at Summit
AQ.3	GHG Emissions	I	I↓	I	GHG would be similar for the project and alternatives except that the Summit alternative would have less GHG as trucks would not have to travel as far..
AQ.4	Toxic Emissions	II	II↑	II	Toxic emissions would be similar except that the Summit alternative would place up to 50 trucks per day close to residences. Modeling along area routes indicates that this impact would be less than significant.
Section 4.2 Public Safety and Hazardous Materials					
PSHM.1	Accidental releases	III	III	III	Accidental releases would be the same for all scenarios.
PSHM.2	Transportation risks along roads	III	III	III↓	Transportation risks for the Southbound Route may be less due to less traffic and population.
Section 4.3 Noise and Vibration					
N.1	Noise from Pumping Stations	II	II↑	II	Noise from the Summit Station would increase noise in the area, although less than the thresholds with mitigation.

Table 6-1 Summary of Environmental Impacts for the Proposed Project and Alternatives

Comment [F1]: Please review this and consider comments in cover letter dated Oct. 31, 2011 1

NI = No Impact; NA = Not Applicable; NC = Not Classified

↑↓ = Increase/decrease in severity

- For the Summit Pump Station Truck Unloading and the Southbound Route alternatives, these are alternatives to the Proposed Project components and are listed with a dash if they would not affect the Proposed Project impacts.

Impact #	Impact Description	Proposed Project	Summit Pump Station Truck Unloading	Southbound Route	Explanation
Section 4.4 Public Services					
PS.1	Increased water use	III	III	III	Increased water use would be the same for the Proposed Project and Summit Pump Station Truck Unloading Alternative.
PS.2	Increased wastewater	III	III	III	Increased wastewater production would be the same for the Proposed Project and Summit Pump Station Truck Unloading Alternative.
PS.3	Increased solid wastes	III	III	III	Increased solid waste generation would be the same for the Proposed Project and Summit Pump Station Truck Unloading Alternative.
PS.4	Increased electricity consumption	III	III	III	Increased electricity consumption would be the same for the Proposed Project and Summit Pump Station Truck Unloading Alternative.
PS.5	Increased fossil fuel consumption and production	III	III	III	Increased fossil fuel consumption for the Summit Pump Station would be less due to the shorter trip.
PS.6	Fire protection and emergency services	III	III	III	Fire protection and emergency services would be the same for the Proposed Project and Summit Pump Station Truck Unloading Alternative.
Section 4.5 Land Use and Policy Consistency Analysis					
LU.1	Noise incompatible with adjacent land uses	II	II↑	II	Noise from the Summit Station would increase noise in the area, although less than the thresholds with mitigation.
LU.2	Odors incompatible with adjacent land uses	II	II↑	II	Odors at the Summit Pump Station would increase.

Table 6-1 Summary of Environmental Impacts for the Proposed Project and Alternatives

Comment [F1]: Please review this and consider comments in cover letter dated Oct. 31, 2011 1

NI = No Impact; NA = Not Applicable; NC = Not Classified

↑↓ = Increase/decrease in severity

- For the Summit Pump Station Truck Unloading and the Southbound Route alternatives, these are alternatives to the Proposed Project components and are listed with a dash if they would not affect the Proposed Project impacts.

Impact #	Impact Description	Proposed Project	Summit Pump Station Truck Unloading	Southbound Route	Explanation
Section 4.6 Transportation and Circulation					
T.1	Operations traffic on local roads and freeway	III	III↑	III↓	Truck trips and subsequent unloading would generate more vehicle trips at the Summit Pump Station and along residential areas compared to the Proposed Project. Transportation impacts for the Southbound Route may be fewer due to less traffic and population.
Section 4.7 Water Resources					
WR.1	Water usage increase	II	II	II	Increased water use would be the same for the Proposed Project and Summit Pump Station Truck Unloading Alternative.
WR.2	Drawdown of onsite wells	III	III	III	Increased water use would be the same for the Proposed Project and Summit Pump Station Truck Unloading Alternative.
WR.3	Water quality	III	III	III	Water quality impacts would be the same for the Proposed Project and Summit Pump Station Truck Unloading Alternative.

6.3 Environmentally Superior Alternative Analysis

The approach taken in this EIR is to provide an assessment of a number of different alternatives to the components of the Proposed Project, including:

- alternative product unloading sites; and
- alternative transportation routes.

The Environmentally Superior Alternative analysis then combines these alternative components together, along with potentially relevant components of the Proposed Project, to present an Environmentally Superior Alternative.

CEQA does not provide specific direction regarding the methodology of comparing alternatives and the Proposed Project. Each project must be evaluated for the issues and impacts that are most important; this will vary depending on the project type and the environmental setting. Issue areas that are generally given more weight in comparing alternatives are those with significant long-term impacts. Impacts that are short-term (e.g., construction-related impacts) or those that are mitigable to less than significant levels are generally considered to be less important.

This comparison is designed to satisfy the requirements of State CEQA Guidelines Section 15126.6(d), Evaluation of Alternatives, which states that:

> The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the Project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the Project as proposed.

In accordance with State CEQA Guidelines Section 15126.6(d), this EIR provides sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project and the other alternatives. Assumptions made regarding the alternatives' descriptions could differ from actual proposals and the analyses are not presented with project-level detail. Different alternative project configurations and a project-level environmental analysis could result in different conclusions from those presented herein.

To facilitate a clear understanding of the relative merits of the various alternatives, this discussion highlights the major differences between the significant impacts of the Proposed Project and the various alternatives. The alternatives that were described in Section 5.0 and evaluated in this section address two aspects of alternatives: alternative locations for unloading product trucked to the SMF and alternative transportation routes.

6.3.1 Proposed Project Versus Alternatives

In addition to the No Project Alternative, alternatives to the specific project components were addressed, including:

- Summit Pump Station Truck Unloading Alternative; and
- Southbound Route Alternative.

Each of these is compared to the respective Proposed Project component to assess the respective advantage or disadvantage over the Proposed Project and alternatives.

A comparison of the advantages and disadvantages of these alternatives compared to the Proposed Project is provided in Table 6-1. A discussion of each alternative compared to the Proposed Project follows.

6.3.1.1 Proposed Project Versus the No Project Alternative

With the No Project Alternative, the throughput increase and the importing of previously refined oil would not occur at the Santa Maria Refinery. Under the No Project Alternative, no new activity would take place at the Santa Maria Refinery. None of the impacts associated with the Proposed Project would occur. No new impacts would occur under the No Project Alternative.

6.3.1.2 Proposed Project Versus the Summit Pump Station Truck Unloading Alternative

The Summit Pump Station Truck Unloading Alternative has advantages over the Proposed Project because crude oil truck trips from the north would be re-routed to the Summit Pump Station from the Santa Maria Pump Station, thereby shortening the length of each trip, conserving fuel, and reducing air emissions. This alternative would reduce average crude oil transportation distances from 66 miles to 56 miles. Although the level of impact would remain the same (significant, Class I), the severity of the air quality impact would be reduced.

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Comment [F2]: Please see cover letter dated Oct. 31, 2011 for discussion of transportation reductions. [2]

This alternative creates disadvantages compared the Proposed Project associated with air quality odors and public safety due to fires. The introduction of crude oil storage at the Summit Pump Station would increase the frequency of releases that can cause odor events and complaints. Also, the crude oil storage would increase the risk of fires impacting nearby vegetation and, consequently, residences. Both of these impacts would be significant, but odor mitigation and fire prevention and design measures could mitigate them to less than significant levels.

This alternative also presents disadvantages compared to the Proposed Project associated with new construction required,[3] air quality, public safety, noise from trucks, and transportation issues for residences. Each of these issues would be less than significant, but they would be more severe than the Proposed Project.

6.3.1.3 Proposed Project Versus the Southbound Route Alternative

This is an alternative to the Proposed Project component of southbound truck traffic leaving the SMF and utilizing Main Street/Highway 166 in Santa Maria to connect to U.S. Highway 101. This alternative would access U.S. Highway 101 via Clark Avenue in Orcutt.

The Southbound Route Alternative is also advantageous compared to the Proposed Project since

this alternative route avoids most residential areas and reduces traffic along Main Street through Santa Maria. It also avoids the intersection of Main Street/Highway 166 and Broadway Street in Santa Maria, which currently operates at level of service of C. Although the level of impact would remain less than significant, the severity of the impact would be less than the Proposed Project.

This alternative has a similar impact on all other issues areas compared to the Proposed Project. This alternative creates no disadvantages compared to the Proposed Project.

6.3.2 Environmentally Superior Alternative

The No Project Alternative would be the environmentally superior alternative since it would not generate any impacts. However, the No Project Alternative would not meet any of the objectives of the Proposed Project. CEQA requires that if the environmentally superior alternative is the No Project Alternative, then the next most environmentally preferred alternative must also be identified.

The Summit Pump Station Truck Unloading Alternative has the advantages of reducing air emissions, but air emissions would remain significant. The disadvantages include the impacts on nearby residences of odor, fire, toxic emissions, noise, and transportation, although none of these impacts would be significant after mitigation. These disadvantages outweigh the benefits of reduced air emissions. Therefore, this alternative has not been selected as the environmentally superior alternative.

The Southbound Route Alternative has the advantage over the Highway 166 route for southbound traffic since the alternative would avoid a partially impacted intersection within Santa Maria. The Applicant could specify their preferences for this route in contracts with trucking companies and contractors. Therefore, the Proposed Project with use of the Southbound Route Alternative is the Environmentally Preferred Alternative.

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7.0 Other CEQA-Mandated Sections

The California Environmental Quality Act (CEQA) requires evaluations of irreversible or irretrievable commitment of resources and project related growth-inducing impacts. The following sections evaluate the Proposed Project in light of these requirements. Chapter 4.0 discusses potentially significant environmental impacts, as described in the State CEQA Guidelines section 15126.2(a) and (b).

7.1 Significant Irreversible Environmental Changes That Would be Caused by the Proposed Project Should It be Implemented

Section 15126.2(c) of the State CEQA Guidelines states that significant irreversible environmental changes, which would be involved with a Proposed Project, may include the following:

- Uses of non-renewable resources during the initial and continued phases of the project that would be irreversible because a large commitment of such resources makes removal or non-use thereafter unlikely;
- Primary impacts and, particularly, secondary impacts that commit future generations to similar uses; and
- Irreversible damage, which may result from environmental accidents, associated with the project.

The purpose of the Proposed Project is to increase throughput of crude oil at a refinery destined for markets in California. Thus, the Proposed Project by definition involves use of nonrenewable resources. The Proposed Project would require consumption of non-renewable resources during operation (i.e., natural gas and fossil fuels). However, the main goal of the Proposed Project is to refine the non-renewable oil and gas resources using existing facility infrastructure on an established refinery. Therefore, the non-renewable resources demand by the Proposed Project is not considered to be significant since the refinery would process more nonrenewable oil and gas than it would consume.

The Proposed Project would directly increase the volume of oil and gas refined locally, but would not increase the overall consumption of oil or gas. The production from the Proposed Project would be used to satisfy existing demand.

7.2 Growth-Inducing Impacts

Section 15126.2(d) of the State CEQA Guidelines states that growth-inducing impacts of the Proposed Project must be discussed in the Environmental Impact Report. In general terms, a project may induce spatial, economic, or population growth in a geographic area if it meets any of these four criteria:

- Removal of an impediment to growth (e.g., establishment of an essential public service or the provisions of new access to an area);

- Economic expansion or growth (e.g., changes in revenue base, employment expansion);
- Establishment of a precedent-setting action (e.g., an innovation, a change in zoning or general plan amendment approval); or
- Development or encroachment in an isolated area or one adjacent to open space (being different from an "infill" type of project).

Should a project meet any one of these criteria, it can be considered growth inducing. The impacts of the Proposed Project are evaluated below with regard to these four growth-inducing criteria.

7.2.1 Removal of an Impediment to Growth

Future development at the Proposed Project Site would involve increasing the crude oil throughput by up to 10 percent. Future development would not result in the establishment of an essential public service nor would it provide new access to a previously inaccessible area. As a result, future development at the Proposed Project Site would not cause significant growth inducement under this criterion.

7.2.2 Economic Growth

Increased throughput at the Proposed Project Site would not result in increased employment nor would it generate significant increases in operational activities. As a result, the Proposed Project would not create a short-term increase to the area's existing revenue base. As such, economic growth associated with future activities at the Proposed Project Site would not be significant.

7.2.3 Precedent-Setting Action

The purpose of the Proposed Project is to increase the crude oil throughput by up to 10 percent at the existing Santa Maria Facility. The Proposed Project Site is in unincorporated San Luis Obispo County and the facility has been active since 1955. The Proposed Project would not expand beyond the limits of the existing facility and, therefore, would not be a precedent-setting action that would create significant growth-inducing impacts.

7.2.4 Development of Open Space

Development of open space is considered growth-inducing when it encroaches upon urban-rural interfaces or in isolated localities. The Proposed Project Site is in unincorporated San Luis Obispo County and is designated with an industrial land use. The facility has been active since 1955 and the Proposed Project does not include physical expansion of the existing facility despite the increased crude oil throughput. Therefore, development of the Proposed Project would not be considered growth-inducing under this criterion since future facility activities would not cause new encroachment upon current open spaces.

7.3 Energy Conservation

In order to assure that energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3)). According to Appendix F of the State CEQA Guidelines, the goal of conserving energy implies the wise and efficient use of energy including: (1) decreasing overall per capita energy consumption; (2) decreasing reliance on natural gas and oil; and (3) increasing reliance on renewable energy sources.

The proposed project's goal is to increase the permitted volume of processed crude oil to help meet the energy needs of the State of California. As stated in Appendix F of the State CEQA Guidelines, *"Potentially significant energy implications of a project shall be considered in an EIR to the extent relevant and applicable to the project."* The purpose of the Project is to process oil for use in California, and the throughput increase would take advantage of increases in nearby production that would otherwise be transported farther away for refining with the added energy consumption required for that transporation.[2] In addition, the throughput increase would optimize the use of the two Refinery trains and would result in the same or less electricity and gas use as detailed in Section 4.4, Public Services. The supply of crude oil is driven by the demand for refined products (gasoline, diesel and jet fuel). Currently, the demand for refined products is met through supply to California refineries of crude oil from California domestic production, foreign imports of crude oil, imports of crude oil from Alaska, and imports of refined products. There are no crude oil pipelines which bring crude oil into California. This means that the only sources of crude oil to meet refinery crude oil demand are from California production, Alaska production, or from foreign sources brought into ports by tanker ships.

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California production of crude oil per year has been in decline since 1986, when production peaked at slightly over 400 million barrels. The decline has averaged about 1.7% per year since 1995. More recently, the decline has averaged over 3% annually since the year 2000. The combination of declining California and Alaska North Slope production along with a relatively constant, flat demand for crude oil in California equates to an increase in foreign crude oil imports. Foreign crude oil imports since 1995 have increased by an average of almost 38%.

The Proposed Project would conserve energy as described below:

- The SMF uses fuel gas produced from the refining operation as a fuel source, primarily to fire heaters and boilers for process heat and steam; and
- Since increased crude oil throughput would not increase the Refinery's use of electricity from the power grid, the Proposed Project would not substantially increase demand and the impacts on electrical energy resources would be less than significant.

In addition, the County's Conservation and Open Space Element (COSE) incorporates new material to address conservation issues, including energy resources. As an adopted Element of the County's General Plan, under State law the County's decision makers must consider the project's consistency with the COSE.

Applicable goals and policies of the COSE and other applicable plans, ordinances, regulations, and standards are addressed in this EIR in Section 4.5 Land Use and Policy Consistency

Analysis. Compliance with all applicable building codes, as well as with County policies and the applicant-proposed measures and mitigation measures identified in this EIR, would ensure that energy use by the project is minimized.

8.0 Summary of Mitigation Measures and Mitigation Monitoring Plan

8.1 Mitigation Monitoring Program

As the Lead Agency under the California Environmental Quality Act (CEQA), the Air Pollution Control district (APCD), and the County of San Luis Obispo (County) are required to adopt a program for reporting or monitoring regarding the implementation of mitigation measures for this Project, if it is approved, to ensure that the adopted mitigation measures are implemented as defined in this Environmental Impact Report (EIR). This Lead Agency responsibility originates in Public Resources Code Section 21081.6(a) (Findings) and the CEQA Guidelines Sections 15091(d) (Findings) and 15097 (Mitigation Monitoring or Reporting).

8.2 Monitoring Authority and Enforcement Responsibility

The purpose of a Mitigation Monitoring, Compliance, and Reporting Program (MMCRP) is to ensure that measures adopted to mitigate or avoid significant impacts are implemented. A MMCRP can be a working guide to facilitate not only the implementation of mitigation measures by the Project proponent, but also the monitoring, compliance, and reporting activities of the APCD and the County and any monitors they may designate.

The APCD and the County may delegate duties and responsibilities for monitoring to other environmental monitors or consultants as deemed necessary, and some monitoring responsibilities may be assumed by responsible agencies, such as affected jurisdictions and cities, and the California Department of Fish and Game (CDFG). The number of monitors assigned to the Project will depend on the number of concurrent activities and their locations. The APCD, County or its designee(s), however, will ensure that each person delegated any duties or responsibilities is qualified to monitor compliance.

Any mitigation measure study or plan that requires the approval of the APCD and the County must allow at least 60 days for adequate review time. When a mitigation measure requires that a mitigation program be developed during the design phase of the Project, the Applicant must submit the final program to the APCD and the County for review and approval for at least 60 days before any activity begins. Other agencies and jurisdictions may require additional review time. It is the responsibility of the environmental monitor assigned to the Project to ensure that appropriate agency reviews and approvals are obtained.

The APCD and the County or its designee will also ensure that any deviation from the procedures identified under the monitoring program is approved by the APCD and the County. Any deviation and its correction shall be reported immediately to the APCD and the County or its designee by the environmental monitor assigned to the Project.

The APCD and the County are responsible for enforcing the procedures adopted for monitoring through the environmental monitor assigned to the Project. Any assigned environmental monitor shall note problems with monitoring, notify appropriate agencies or individuals about any problems, and report the problems to the APCD, the County or their designee.

8.3 Mitigation Compliance Responsibility

The Applicant is responsible for successfully implementing all the mitigation measures in the MMCRP, and is responsible for assuring that these requirements are met by all of its contractors and field personnel. Standards for successful mitigation also are implicit in many mitigation measures that include such requirements as obtaining permits or avoiding a specific impact entirely. Other mitigation measures include detailed success criteria. Additional mitigation success thresholds will be established by applicable agencies with jurisdiction through the permit process and through the review and approval of specific plans for the implementation of mitigation measures.

8.4 General Monitoring Procedures

Environmental Monitors. Many of the monitoring procedures will be conducted during the operational phase of the Project and during construction if applicable. The APCD, the County and the environmental monitor(s) are responsible for integrating the mitigation monitoring procedures into the operation or construction process in coordination with the Applicant. To oversee the monitoring procedures and to ensure success, the environmental monitor assigned to the Project must be on site during that portion of the operation or potential construction that has the potential to create a significant environmental impact or other impact for which mitigation is required. The environmental monitor is responsible for ensuring that all procedures specified in the monitoring program are followed.

Operations and Construction Personnel. A key feature contributing to the success of mitigation monitoring will be obtaining the full cooperation of operations and construction personnel and supervisors. Many of the mitigation measures require action on the part of the supervisors or crews for successful implementation. To ensure success, the following actions, detailed in specific mitigation measures, will be taken:

- Procedures to be followed by operations or construction companies hired to do the work will be written into contracts between the Applicant and any contractors. Procedures to be followed by operations and construction crews will be written into a separate document that all personnel will be asked to sign, denoting agreement.
- One or more meetings will be held to inform all and train personnel about the requirements of the monitoring program.
- A written summary of mitigation monitoring procedures will be provided to supervisors for all mitigation measures requiring their attention.

General Reporting Procedures. Site visits and specified monitoring procedures performed by other individuals will be reported to the environmental monitor. A monitoring record form will be submitted to the environmental monitor by the individual conducting the visit or procedure so that details of the visit can be recorded and progress tracked by the environmental monitor. A checklist will be developed and maintained by the environmental monitor to track all procedures

required for each mitigation measure and to ensure that the timing specified for the procedures is adhered to. The environmental monitor will note any problems that may occur and take appropriate action to rectify the problems.

Public Access to Records. The public is allowed access to records and reports used to track the monitoring program. Monitoring records and reports will be made available for public inspection by the APCD, the County, or their designee on request.

8.5 Mitigation Monitoring Table

Tables 8-1 through 8-7 present a summary of monitoring and reporting plan requirements for the mitigation measures identified in Chapter 4 of the EIR as applicable to the proposed Project. The Table provides the following information, by column:

- ***Impact*** (description of the impact identified in Chapter 4);
- ***Mitigation Measure*** (description of the mitigation measure identified in Chapter 4);
- ***Monitoring/Plan Requirements*** (monitoring or plan requirements necessary to verify compliance with the mitigation measure);
- ***Method of Verification*** (this is how the responsible agency can determine if the mitigation measure has been implemented);
- ***Timing*** (this identifies when action needs to be taken on mitigation measure); and
- ***Responsible Agency*** (this is the agency that is responsible for assuring compliance with the mitigation measure).

Table 8-1 Air Quality

Comment [F1]: Please refer to comment letter dated Oct. 31, 2011 for comments on Mitigation Measures and COP concerns. All sections highlighted in yellow are included in these comments. 1

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
AQ.1: Operational activities at the refinery and offsite would generate emissions that exceed SLOC APCD thresholds.	AQ-1.1 Prior to issuance of the updated permit and increase in Refinery throughput, the Applicant shall install low-NOx burners on the crude heater, coker heater and boilers B504/505, or utilize an equivalent method, to reduce the NOx emissions to less than the APCD thresholds.	Inspection of equipment	During operations	San Luis Obispo County Planning and Building Department, APCD
	AQ-1.2 To the extent feasible, all trucks under contract to the SMF shall meet EPA 2010 or 2007 model year NOx and PM emission requirements and a preference for the use of rail over trucks for the transportation of coke shall be implemented to the extent feasible in order to reduce offsite emissions. Annual truck trips associated with refinery operations and their associated model year and emissions shall be submitted to the APCD annually.	Inspection of equipment	During operations	San Luis Obispo County Planning and Building Department
	AQ-1.3 Prior to issuance of the updated permit, if emissions cannot be mitigated below significance thresholds through implementation of mitigation measures AQ-1.1 and AQ-1.2, then off-site mitigation will be required as per APCD guidance in the CEQA Handbook.	Inspection of off-site mitigatioin	During operations	APCD
AQ.2: Operational activities could increase the frequency or duration of odor events.	AQ-2 The Applicant shall prepare and submit an Odor Control Plan, which shall be approved by the APCD prior to the issuance of a revised permit. The Odor Control Plan shall identify all potential sources of odors at the Refinery. The plan shall detail how odors will be controlled at each odor source and the mechanism in place in the event of an upset or breakdown, as well as design methods to reduce odors, including redundancy of equipment (e.g., pumps and VRU compressors) or reductions in fuel gas sulfur content. Area monitoring shall be discussed. The Plan shall also include a complaint monitoring and reporting section and include a hotline number for individuals to call in case of a complaint.	Inspection of plan	During operations	San Luis Obispo County APCD

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
AQ.3: Operational activities could increase GHG emissions.	AQ-3 The Applicant shall implement a program to increase efficiency of the Refinery stationary combustion devices to maintain GHG emissions less than the APCD interim thresholds (10,000 metric tonnes per year) over the emissions associated with the current permitted throughput. In addition to increasing stationary equipment efficiency, additional measures may include the use of more efficient model year trucks or alternative fueled vehicles for hauling vehicles. If after all applicable measures have been implemented, emissions are still over the thresholds, then offsite mitigation will be required. The off-site mitigation measures shall be approved by the APCD prior to permit issuance.	Inspection of program	During Operations	San Luis Obispo County APCD
AQ.4: Potential increased operations at the refinery would emit air-borne toxic materials.	AQ-4 None required.	Inspection of equipment	During operations	San Luis Obispo County Planning and Building Department

Table 8-2 Public Safety and Hazardous Materials

Comment [F2]: Please refer to comment letter dated Oct. 31, 2011 for comments on Mitigation Measures and COP concerns. All sections highlighted in yellow are included in these comments 1

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
PSHM.1: The Proposed Project could introduce risk to the public associated with accidental releases of hazardous materials from the SMF processing operations.	None required.	n/a	n/a	n/a
PSHM.2: The Proposed Project could introduce risk to the public associated with the transportation of SMF product along local and area roadways.	None required.	n/a	n/a	n/a

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
PSHM.3: The Proposed Project could introduce contamination to groundwater through exacerbation of existing contamination issues	PSHM-3 Prior to issuance of the updated permit and increase in Refinery throughput, the Applicant shall ensure that any additional coke produced shall be deposited in lined areas or other equivalent measures to prevent any additional groundwater contamination, as per consultation with the RWQCB.	Inspection of coke storage area	During operations	San Luis Obispo County Planning and Building Department, DTSC, RWQCB

Table 8-3 Noise and Vibration

Comment [F3]: Please refer to comment letter dated Oct. 31, 2011 for comments on Mitigation Measures and COP concerns. All sections highlighted in yellow are included in these comments [1]

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
N.1: Operation increases at the Refinery could increase noise levels in the area.	N-1 The Applicant shall, at the Santa Margarita Pump Station, install a sound wall constructed of barrier pads between the noise sources and residences, as close to the pumping operations as feasible, to reduce noise levels at the property line to less than 50 dBA. Additional barrier walls shall be installed as deemed necessary by infield measurements. Installation of the sound wall shall be verified by County Planning and Building prior to the issuance of the permit/authorization to proceed.	Review of soundwall installation	Prior to issuance of permit	San Luis Obispo County Planning and Building Department
N.2: Traffic increases on area roadways near the Refinery could increase noise levels in the area.	None required.	n/a	n/a	n/a

Table 8-4 Public Services

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
PS.1: Increased throughput and operations at the Santa Maria Facility would produce increased wastewater.	None required beyond existing National Pollutant Discharge Elimination System permit requirements.	n/a	n/a	n/a
PS.2: Santa Maria throughput increase operations would generate increased solid wastes.	None required.	n/a	n/a	n/a
PS.3: Impacts from increased electricity consumption at the Santa Maria Facility due to throughput increase operations.	None required.	n/a	n/a	n/a

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
PS.4: Increased fossil fuel consumption and production (diesel, gasoline, and natural gas) at the Santa Maria Facility could thereby decrease availability	None required.	n/a	n/a	n/a
PS.5: Throughput increase at the site could impact fire protection and emergency response.	None required.	n/a	n/a	n/a

Table 8-5 Land Use Policy and Consistency Analysis

Comment [F4]: Please refer to comment letter dated Oct. 31, 2011 for comments on Mitigation Measures and COP concerns. All sections highlighted in yellow are included in these comments 1

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
LU.1: Noise from throughput increase operations would be incompatible with the adjacent land uses.	Implement mitigation measure N-1.	Review of soundwall installation	Prior to issuance of permit	San Luis Obispo County Planning and Building Department
LU.2: Emissions and odors from operations could be incompatible with adjacent land uses.	Implement mitigation measure AQ-2.	Inspection of plan	During operations	San Luis Obispo County APCD

Table 8-6 Transportation and Circulation

Comment [F5]: Please refer to comment letter dated Oct. 31, 2011 for comments on Mitigation Measures and COP concerns. All sections highlighted in yellow are included in these comments 1

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
TR.1: Traffic associated with the Proposed Project would increase traffic on local roads and the freeway.	TR-1 Within 30 days of permit approval, the applicant shall pay South County Area 2 Road Impact Fees to the Department of Public Works for the proposed .78 peak hour trip increase in accordance with the latest adopted fee schedule. In addition, after the Willow Road/Highway 101 interchange is completed, the applicant shall end the use of both their northbound and eastbound truck routes, as identified in this document, and shall use the Willow Road Interchange instead.	Payment and Inspection of routes	Prior to permit issuance and during operations	San Luis Obispo County Public Works Department

Table 8-7 Water Resources

Comment [F6]: Please refer to comment letter dated Oct. 31, 2011 for comments on Mitigation Measures and COP concerns. All sections highlighted in yellow are included in these comments 1

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
WR.1: The Proposed Project one percent increase in water usage may impact the current and future availability of groundwater for other users, including agricultural and residential users.	WR-1 The Applicant shall develop a Water Management Plan, which shall include best management practices and water conservation measures, including the use of reclaimed water and surface runoff retention basin water for Refinery uses, dust suppression, and landscaping uses, as available. The Applicant shall make changes to the Water Management Plan if requested by the County Director of Planning. The Water Management Plan shall include implementation of measures consistent with the Nipomo Mesa Management Area Water Shortage Conditions and Response Plan. The plan shall provide guidelines on managing all future water use during severe drought years. Once it is determined that a severe drought condition exists, restricted (drought) water usage measures shall remain in effect until it is shown satisfactorily to the County that the severe drought condition no longer exists. This plan shall include: -Designs for and implementation of modification of the existing facility, to re-use the existing water. The SMF currently implements two systems to treat runoff and water used during operations. The water could be further treated and re-used as part of additional conservation activities. Additional plans and reports would be required for the treatment activities. -Identification of general measures available to reduce water usage for Refinery Operations. -Other measures as appropriate to offset the increased use of water related to the Proposed Project during severe drought conditions, which may include purchase of water rights from other users, conservation efforts, use of reclaimed water, or additional water treatment and reuse as needed.	Terms outlined in Water Shortage Conditions and Response Plan. Design documents and plans	During times of Potentially Severe to Severe climatic conditions where groundwate r conditions are sufficient low as to permit seawater intrusion	County of San Luis Obispo Nipomo Mesa Management Area Technical Group

Impact	Mitigation Measure	Compliance Verification		
		Method	Timing	Responsible Party
WR.2: The Proposed Project increase in groundwater pumping of onsite wells may exceed sustained pumping capacities of existing wells and drawdown onsite wells and wells on neighboring properties.	None required.	n/a	n/a	n/a
WR.3: The Proposed Project may have significant impacts on water quality.	WR-3.1 Ensure that any additional increased process water is treated by the wastewater treatment system in conformance with the NPDES Permit.	Inspection	During operations	San Luis Obispo County Water Resources Division
	WR-3.2 Existing spill management precautions shall be amended as needed to mitigate an increased spill size due to the increased amount of crude oil processing as reviewed and approved by San Luis Obispo County Planning and Building and San Luis Obispo County Water Resources Division.	Review of existing precaution measures	Prior to permit	San Luis Obispo County Water Resources Division

SECTION 9.0

LIST OF EIR PREPARERS

NO REDLINE FOR THIS SECTION

SECTION 10.0

AGENCIES AND INDIVIDUALS CONSULTED DURING EIR PREPARATION

NO REDLINE FOR THIS SECTION

Responses to the Applicant Redline comments on the FEIR.

Comment #	Response
ES-1.1	Text was modified in the FEIR per the comment.
ES-4.1	Text was modified in the FEIR per the comment.
ES-4.2	Text was modified in the FEIR per the comment.
ES-4.3	Text was modified in the FEIR per the comment.
ES-4.4	Text was modified in the FEIR per the comment.
ES-4.5	Text was modified in the FEIR per the comment.
ES-4.6	Please see responses to main COP letter.
ES-4.7	Text was modified in the FEIR per the comment.
ES-4.8	Text was modified in the FEIR per the comment.
ES-4.9	Text was modified in the FEIR per the comment.
ES-4.10	Text was modified in the FEIR per the comment.
ES-4.11	Text was modified in the FEIR per the comment.
ES-4.12	Please see responses to main COP letter.
ES-4.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-4.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-4.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-4.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-4.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-4.18	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-4.19	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-4.20	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-4.21	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-4.22	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-4.23	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-4.24	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the body of the document.
ES-4.25	While the specific edits suggested have not been made, changes have

Comment #	Response
	been made to the Final EIR in response to the comment and consistent with changes made to the body of the document.
ES-4.26	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the body of the document.
ES-4.27	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the body of the document.
ES-5.1	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the body of the document.
ES-5.2	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the body of the document.
ES-5.3	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the body of the document.
ES-5.4	Please see responses to main COP letter.
ES-5.5	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-5.6	Text was not modified as suggested because it contains information that has not been independently verified
ES-5.7	Text was not modified as suggested because it contains information that has not been independently verified
ES-5.8	Text was not modified as suggested because it contains information that has not been independently verified
ES-5.9	Text was not modified as suggested because it contains information that has not been independently verified
ES-5.10	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-5.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-5.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-5.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-5.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-5.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-5.16	Text was modified in the FEIR per the comment.
ES-5.17	Text was modified in the FEIR per the comment.

Comment #	Response
ES-5.18	Text was modified in the FEIR per the comment.
ES-5.19	Text was modified in the FEIR per the comment.
ES-5.20	Text was modified in the FEIR per the comment.
ES-5.21	Text was modified in the FEIR per the comment.
ES-5.22	Text was modified in the FEIR per the comment.
ES-5.23	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-5.24	Text was modified in the FEIR per the comment.
ES-5.25	Text was modified in the FEIR per the comment.
ES-5.26	Text was modified in the FEIR per the comment.
ES-5.27	Text was modified in the FEIR per the comment.
ES-5.28	Text was modified in the FEIR per the comment.
ES-5.29	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-5.30	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-5.31	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-5.32	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-5.33	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
ES-6.1	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the Water Resources Section of the document of the document.
ES-6.2	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the Water Resources Section of the document of the document.
ES-6.3	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the Water Resources Section of the document of the document.
ES-6.4	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the Water Resources Section of the document of the document.
ES-6.5	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the Water Resources Section of the document of the document.

Comment #	Response
ES-6.6	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the Water Resources Section of the document of the document.
ES-6.7	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the Water Resources Section of the document of the document.
ES-6.8	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the Water Resources Section of the document of the document.
ES-6.9	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the Water Resources Section of the document of the document.
ES-6.10	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the Water Resources Section of the document of the document.
ES-6.11	While the specific edits suggested have not been made, changes have been made to the Final EIR in response to the comment and consistent with changes made to the Water Resources Section of the document of the document.
ES-7.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-7.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-7.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-7.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies. Please see responses to the COP comment letter.
ES-7.5	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-7.6	Text has not been modified as the changes do not provide additional clarity or information to the reader
ES-7.7	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-7.8	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-7.9	Text has not been modified as the changes do not provide additional

Comment #	Response
	clarity or information to the reader.
ES-7.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies. Please see responses to the COP comment letter.
ES-7.11	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-7.12	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-7.13	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-8.1	Text was modified in the FEIR per the comment.
ES-8.2	Text was modified in the FEIR per the comment.
ES-8.3	Text was modified in the FEIR per the comment.
ES-8.4	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-8.5	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-8.6	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-8.7	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-8.8	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-8.9	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-8.10	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-8.11	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-8.12	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-8.13	Text has not been modified as the changes do not provide additional clarity or information to the reader.
ES-10.1	Please see responses to main COP letter.
ES-10.2	Text has been modified as per changes made in the main body of the text.
ES-10.3	Text has been modified as per changes made in the main body of the text.
ES-10.4	Text has been modified as per changes made in the main body of the text.
ES-10.5	Text has been modified as per changes made in the main body of the text.

Comment #	Response
ES-10.6	Text has been modified as per changes made in the main body of the text.
ES-10.7	Text has been modified as per changes made in the main body of the text.
ES-10.8	Text has been modified as per changes made in the main body of the text.
ES-10.9	Text has been modified as per changes made in the main body of the text.
ES-10.10	Text has been modified as per changes made in the main body of the text.
ES-11.1	Text has been modified as per changes made in the main body of the text.
ES-11.2	Text has been modified as per changes made in the main body of the text.
ES-11.3	Text has been modified as per changes made in the main body of the text.
ES-12.1	Text has been modified as per changes made in the main body of the text.
ES-12.2	Text has been modified as per changes made in the main body of the text.
ES-13.1	The requested commentary is not a mitigation measure and has therefore not been added to the table.
ES-13.2	The requested commentary is not a mitigation measure and has therefore not been added to the table.
ES-14.1	Text has been modified as per changes made in the main body of the text.
ES-14.2	Text has been modified as per changes made in the main body of the text.
ES-14.3	Text has been modified as per changes made in the main body of the text.
ES-14.4	Text has been modified as per changes made in the main body of the text.
ES-14.5	Text has been modified as per changes made in the main body of the text.
ES-14.6	Text has been modified as per changes made in the main body of the text.
ES-14.7	Text has been modified as per changes made in the main body of the text.
ES-14.8	Text has been modified as per changes made in the main body of the text.
ES-14.9	Text has been modified as per changes made in the main body of the text.

Comment #	Response
ES-14.10	Text has been modified as per changes made in the main body of the text.
ES-14.11	Text has been modified as per changes made in the main body of the text.
ES-14.12	Text has been modified as per changes made in the main body of the text.
ES-14.13	Text has been modified as per changes made in the main body of the text.
ES-14.14	Text has been modified as per changes made in the main body of the text.
ES-14.15	Text has been modified as per changes made in the main body of the text.
ES-14.16	Text has been modified as per changes made in the main body of the text.
ES-14.17	Text has been modified as per changes made in the main body of the text.
1-1.1	Text was modified in the FEIR per the comment.
1-2.1	A north arrow was added to Figure 1-1. However, as the Figure has insets, with different scales, and is used for general orientation only, scales have not been added.
2-1.1	Text was modified in the FEIR per the comment.
2-1.2	Text was not modified as suggested because it is the first time that NOx is referred to in the section.
2-1.3	Text was not modified as suggested because it is the first time that NOx is referred to in the section.
2-1.4	Text was modified in the FEIR per the comment.
2-1.5	Text was modified in the FEIR per the comment.
2-1.6	Text was modified in the FEIR per the comment.
2-1.7	Text was modified in the FEIR per the comment.
2-1.8	Text was modified in the FEIR per the comment.
2-1.9	Text was modified in the FEIR per the comment.
2-1.10	Text was modified in the FEIR per the comment.
2-1.11	Text was modified in the FEIR per the comment.
2-1.12	Text was modified in the FEIR per the comment.
2-4.1	A north arrow was added to Figure 2-2. However, as the Figure has insets, with different scales, and is used for general orientation only, scales have not been added.
2-5.1	Text was modified in the FEIR per the comment.
2-5.2	Text was modified in the FEIR per the comment.
2-5.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
2-9.1	Map scale and north arrow have been added to Figure 2-4.

Comment #	Response
2-10.1	Information on summit pump station has been added to the document.
2-10.2	Information on summit pump station has been added to the document.
2-10.3	Information on summit pump station has been added to the document.
2-10.4	Information on summit pump station has been added to the document.
2-14.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
2-14.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
2-14.3	Text was modified in the FEIR per the comment.
2-14.4	References to the historical levels of coke transported have been removed from the FEIR.
2-14.5	Text has not been modified as this information provides historical information about coke pile inventory.
2-15.1	Text was modified in the FEIR per the comment.
2-20.1	Text was modified in the FEIR per the comment.
2-20.2	Text was modified in the FEIR per the comment.
2-20.3	Text was modified in the FEIR per the comment.
2-20.4	Text was modified in the FEIR per the comment.
2-20.5	Text was modified in the FEIR per the comment.
2-20.6	Text has been modified to clarify the APCD permits.
2-20.7	Text has been modified to clarify the APCD permits.
2-21.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
2-21.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
2-22.1	Text was modified in the FEIR per the comment.
2-22.2	Text was modified in the FEIR per the comment.
2-22.3	Text was modified in the FEIR per the comment.
2-23.1	Text was modified in the FEIR per the comment.
2-23.2	Text was modified in the FEIR per the comment.
2-23.3	Text was modified in the FEIR per the comment.
2-24.1	Changes have been made to the Water Resources Section consistent with the comment; however, the Project Description has not been amended as suggested.
2-24.2	Changes have been made to the Water Resources Section consistent with the comment; however, the Project Description has not been amended as suggested.
2-25.1	Text was modified in the FEIR per the comment.
2-25.2	Text was modified in the FEIR per the comment.
2-26.1	Text was modified in the FEIR per the comment.
2-26.2	Text was modified in the FEIR per the comment.
2-27.1	Text was modified in the FEIR per the comment.

Comment #	Response
2-27.2	Text was modified in the FEIR per the comment.
2-27.3	Text was modified in the FEIR per the comment.
2-27.4	Text was modified in the FEIR per the comment.
2-28.1	Text was modified in the FEIR per the comment.
2-28.2	Text was modified in the FEIR per the comment.
2-28.3	Text was modified in the FEIR per the comment.
4-1.1	Text was not modified as suggested because it does not reflect the independent judgment of the agencies. This section does not make reference to the existing partition installed by ConocoPhillips, but to a soundwall required as part of mitigation.
4.1-1.1	Text was modified in the FEIR per the comment.
4.1-1.2	Text was modified in the FEIR per the comment.
4.1-4.1	Text has not been modified as the changes do not provide additional clarity or information to the reader. Table 4.1-1 provides information on the current state and federal standards and does not imply or indicate that these pollutants are being emitted from the SMF.
4.1-5.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-5.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-5.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-5.4	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-5.5	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-5.6	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-5.7	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-5.8	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-5.9	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-5.10	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-5.11	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-7.1	Text was modified in the following paragraph as it is more applicable to the discussion.
4.1-7.2	Text was modified in the following paragraph as it is more applicable to the discussion.

Comment #	Response
4.1-7.3	Text was modified in the following paragraph as it is more applicable to the discussion.
4.1-8.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-8.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-8.3	Text was modified to highlight the contribution of the petroleum refining category.
4.1-9.1	Text was modified to highlight the contribution of the petroleum refining category.
4.1-9.2	Text was modified in the FEIR per the comment.
4.1-9.3	Text was modified in the FEIR per the comment.
4.1-10.1	The term geogenic refers to soil/mineral non-anthropogenic sources of emissions and is the term utilized in the SLO APCD emission inventory detailed tabulations and has therefore been used in the DEIR. Text has not been modified.
4.1-10.2	PM2.5 is discussed in the text. Text has not been modified.
4.1-11.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-11.2	Text was modified in the FEIR per the comment.
4.1-11.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-11.4	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-11.5	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-11.6	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-11.7	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-12.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-12.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-12.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-12.4	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-12.5	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-13.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.

Comment #	Response
4.1-13.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-13.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-13.4	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-13.5	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-13.6	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-13.7	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-13.8	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-19.1	Text was modified in the FEIR per the comment.
4.1-19.2	Text was modified in the FEIR per the comment.
4.1-20.1	Text was modified in the FEIR per the comment.
4.1-20.2	Out of service equipment that had emissions in 2009 or are listed in the APCD inventory are included in Table 4.1-7.
4.1-20.3	Text was modified in the FEIR per the comment.
4.1-21.1	Text describing the emissions sources is already included in the text immediately above the Table 4.1-8 and has therefore not been added to the table title.
4.1-21.2	Text was modified in the FEIR per the comment.
4.1-21.3	Text was modified in the FEIR per the comment.
4.1-21.4	Text was modified in the FEIR per the comment.
4.1-21.5	Text was modified in the FEIR per the comment.
4.1-22.1	As the Table 4.1-9 presents emissions that occurred in 2007, when the calciner was in operation, the calciner emissions have been included.
4.1-22.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.8	Text was not modified as suggested because it does not reflect the

Comment #	Response
	independent judgment of the agencies.
4.1-22.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.18	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.19	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.20	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.21	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.22	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.23	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-22.24	Text was modified in the FEIR per the comment.
4.1-22.25	Text was modified in the FEIR per the comment.
4.1-22.26	Text was modified in the FEIR per the comment.
4.1-22.27	Text was modified in the FEIR per the comment.
4.1-23.1	Text relating to the 2011 HRA was not added in this portion of the FEIR as the 2011 HRA only examines the toxic emissions and impacts associated with the Proposed Project operations and not the SMF operations at the time of the NOP issuance. Therefore, the results of the 2004 inventory and the 2007 HRA have been presented. The 2011 HRA is presented in the Proposed Project impact analysis.

Comment #	Response
	Text was not modified in the FEIR per the comment.
4.1-23.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.18	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.19	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.20	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.21	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.22	Text was not modified as suggested because it does not reflect the

Comment #	Response
	independent judgment of the agencies.
4.1-23.23	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.24	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.25	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.26	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.27	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.28	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.29	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.30	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.31	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.32	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.33	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.34	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.35	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.36	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.37	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.38	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.39	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.40	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.41	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.42	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.43	Text was not modified as suggested because it does not reflect the

Comment #	Response
	independent judgment of the agencies.
4.1-23.44	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.45	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.46	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.47	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.48	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.49	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.50	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-23.51	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-24.1	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-24.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-24.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-24.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-24.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-24.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-24.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-24.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-24.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-24.10	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-24.11	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-25.1	Both normal and upset conditions involve combustion of gases that contain sulfur. Text was not modified.
4.1-25.2	Text was not modified as suggested because it does not reflect the

Comment #	Response
	independent judgment of the agencies.
4.1-25.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-25.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-25.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-25.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-25.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-25.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-25.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-25.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-25.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.1	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.12	Text was not modified as suggested because it does not reflect the

Comment #	Response
	independent judgment of the agencies.
4.1-26.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.18	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.19	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.20	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-26.21	Text was modified in the FEIR per the comment.
4.1-33.1	Additional text was added to the FEIR on the cap-and-trade program.
4.1-33.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-33.3	Text was modified in the FEIR per the comment.
4.1-34.1	Interim refers only to the GHG thresholds which, at the time of writing of the DEIR, were interim. This has been changed in the FEIR.
4.1-35.1	Text was modified in the FEIR per the comment.
4.1-37.1	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-37.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-37.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-37.4	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-37.5	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-37.6	Text was modified in the FEIR per the comment.
4.1-37.7	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-37.8	Text was modified in the FEIR per the comment.
4.1-37.9	Text was modified in the FEIR per the comment.
4.1-37.10	Text was modified in the FEIR per the comment.

Comment #	Response
4.1-37.11	Text was modified in the FEIR per the comment.
4.1-37.12	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-37.13	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-38.1	Table 4.1-14 has been corrected and updated. However, the listing of equipment that would be "affected" has been aligned with the 2011 HRA submitted by COP, not the listing presented in the EXHIBIT 2 as also submitted by COP, as the two differ. The HRA appears to provide more accurate information as the sulfur plant incinerator, tail gas scrubber and flare all are listed in the 2011 HRA as experiencing an increase in emissions.
4.1-38.2	Table 4.1-14 has been corrected in the FEIR.
4.1-38.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-38.4	These emissions are associated with the Proposed Project, which is defined as the SMF operating at its' permit limit.
4.1-38.5	Only portions of the footnote to Table 4.1-14 have been deleted.
4.1-38.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-39.1	Only portions of the footnote to Table 4.1-14 have been deleted.
4.1-39.2	Text was modified in the FEIR per the comment.
4.1-39.3	Text was modified in the FEIR per the comment.
4.1-39.4	Text was modified in the FEIR per the comment.
4.1-39.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-39.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-39.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-39.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-39.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-40.1	Text was modified in the FEIR per the comment.
4.1-40.2	Text was modified in the FEIR to indicate that these emissions are potential emissions and have not occurred. Note that "potential" is always the case for a CEQA document evaluating a Proposed Project.
4.1-40.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-40.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.

Comment #	Response
4.1-40.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-40.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-40.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-40.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-40.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-40.9	These emissions are calculated and no data source is included. See the air appendix for more information on the inputs to the calculations.
4.1-40.10	These emissions are calculated and no data source is included.
4.1-41.1	"Potential" is always the case for a CEQA document evaluating a Proposed Project. Although it is often used in air permitting associated with "potential to emit", it is only applicable in this DEIR in terms of the potential emissions associated with operation of the SMF at the current permit limit (44,500 bpd). The proposed project, by definition, is the "potential" to emit. Text was not modified.
4.1-41.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.4	Calculations were corrected in the air appendix and in section 4.1 tables based on information from the 2011 HRA. Some discrepancies between the 2011 HRA and the comments provided in Exhibit 2 caused some of the numbers in the tables to not be the same as the comments herein.
4.1-41.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.11	Text was not modified as suggested because it does not reflect the

Comment #	Response
	independent judgment of the agencies.
4.1-41.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.18	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.19	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.20	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.21	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.22	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.23	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.24	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.25	Text was modified in the FEIR per the comment.
4.1-41.26	Text was modified in the FEIR per the comment.
4.1-41.27	Text was modified in the FEIR per the comment.
4.1-41.28	Text was modified in the FEIR per the comment.
4.1-41.29	Text was modified in the FEIR per the comment.
4.1-41.30	Text was modified in the FEIR per the comment.
4.1-41.31	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.32	Text was modified in the FEIR per the comment.
4.1-41.33	Text was modified in the FEIR per the comment.
4.1-41.34	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-41.35	Text was modified in the FEIR per the comment.
4.1-41.36	Text was modified in the FEIR per the comment.
4.1-41.37	Text was not modified as suggested because it does not reflect the

Comment #	Response
	independent judgment of the agencies.
4.1-41.38	Text was modified in the FEIR per the comment.
4.1-41.39	Text was modified in the FEIR per the comment.
4.1-41.40	Text was modified in the FEIR per the comment.
4.1-41.41	Text was modified in the FEIR per the comment.
4.1-42.1	Text was modified in the FEIR per the comment.
4.1-42.2	Text was modified in the FEIR per the comment.
4.1-42.3	Text was modified in the FEIR per the comment.
4.1-42.4	Text was modified in the FEIR per the comment.
4.1-42.5	Text was modified in the FEIR per the comment.
4.1-42.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-42.7	Comment noted. Table 4.1-17 shows the emissions assuming that AQ.1-1 is applied achieving 21 ppm NOx on the designated equipment.
4.1-42.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-42.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-42.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-42.11	Please see responses to main COP letter.
4.1-42.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-42.13	Please see responses to main COP letter.
4.1-42.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-42.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-42.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-42.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-42.18	Please see responses to main COP letter.
4.1-43.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-43.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-43.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-43.4	Text was modified in order to explain what aspects of operations would change and which would not change under the Proposed

Comment #	Response
	Project.
4.1-43.5	Text was modified in order to explain what aspects of operations would change and which would not change under the Proposed Project.
4.1-43.6	Text was modified in order to explain what aspects of operations would change and which would not change under the Proposed Project.
4.1-43.7	Text was modified in order to explain what aspects of operations would change and which would not change under the Proposed Project.
4.1-43.8	Text was modified in order to explain what aspects of operations would change and which would not change under the Proposed Project.
4.1-43.9	Text was modified in order to explain what aspects of operations would change and which would not change under the Proposed Project.
4.1-43.10	Text was modified in order to explain what aspects of operations would change and which would not change under the Proposed Project.
4.1-43.11	Text was modified in order to explain what aspects of operations would change and which would not change under the Proposed Project.
4.1-43.12	Text was modified in order to explain what aspects of operations would change and which would not change under the Proposed Project.
4.1-43.13	Text was modified in order to explain what aspects of operations would change and which would not change under the Proposed Project.
4.1-43.14	Please see responses to main COP letter.
4.1-43.15	Text was modified in the FEIR per the comment.
4.1-43.16	Please see responses to main COP letter.
4.1-43.17	The mitigation measure ensures that the odor monitoring program adheres to generally accepted good engineering practices.
4.1-44.1	Please see responses to main COP letter.
4.1-44.2	Please see responses to main COP letter.
4.1-44.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.4	The table was incorrectly referenced and this was corrected in the FEIR.
4.1-44.5	Text was not modified as suggested because it does not reflect the

Comment #	Response
	independent judgment of the agencies.
4.1-44.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-44.18	Please see responses to main COP letter.
4.1-45.1	The calciner operations were removed from the table and the numbers recalculated as per the comment.
4.1-45.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-45.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-45.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-45.5	Text was modified in the FEIR per the comment.
4.1-45.6	Text was modified in the FEIR per the comment.
4.1-45.7	Text was modified in the FEIR per the comment.
4.1-45.8	Text was modified in the FEIR per the comment.
4.1-45.9	Text was modified in the FEIR per the comment.
4.1-45.10	Text was modified in the FEIR per the comment.
4.1-45.11	Text was modified in the FEIR per the comment.
4.1-45.12	Text was modified in the FEIR per the comment.

Comment #	Response
4.1-45.13	Text was modified in the FEIR per the comment.
4.1-45.14	Text was modified in the FEIR per the comment.
4.1-45.15	Text was modified in the FEIR per the comment.
4.1-45.16	Text was modified in the FEIR per the comment.
4.1-45.17	Text was modified in the FEIR per the comment.
4.1-45.18	Text was modified in the FEIR per the comment.
4.1-45.19	Text was modified in the FEIR per the comment.
4.1-45.20	Text was modified in the FEIR per the comment.
4.1-45.21	Text was modified in the FEIR per the comment.
4.1-45.22	Text was modified in the FEIR per the comment.
4.1-45.23	Text was modified in the FEIR per the comment.
4.1-45.24	Text was modified in the FEIR per the comment.
4.1-45.25	Text was modified in the FEIR per the comment.
4.1-45.26	Text was modified in the FEIR per the comment.
4.1-45.27	Text was modified in the FEIR per the comment.
4.1-45.28	Text was modified in the FEIR per the comment.
4.1-45.29	Text was modified in the FEIR per the comment.
4.1-45.30	Text was modified in the FEIR per the comment.
4.1-45.31	Text was modified in the FEIR per the comment.
4.1-45.32	Text was modified in the FEIR per the comment.
4.1-45.33	Text was modified in the FEIR per the comment.
4.1-45.34	Text was modified in the FEIR per the comment.
4.1-45.35	Text was modified in the FEIR per the comment.
4.1-45.36	Text was modified in the FEIR per the comment.
4.1-45.37	Text was modified in the FEIR per the comment.
4.1-45.38	Text was modified in the FEIR per the comment.
4.1-45.39	Text was modified in the FEIR per the comment.
4.1-45.40	Text was modified in the FEIR per the comment.
4.1-45.41	Text was modified in the FEIR per the comment.
4.1-45.42	Text was modified in the FEIR per the comment.
4.1-45.43	Text was modified in the FEIR per the comment.
4.1-45.44	Text was modified in the FEIR per the comment.
4.1-45.45	Text was modified in the FEIR per the comment.
4.1-45.46	Text was modified in the FEIR per the comment.
4.1-45.47	Text was modified in the FEIR per the comment.
4.1-45.48	Text was modified in the FEIR per the comment.
4.1-45.49	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-45.50	Please see responses to main COP letter.
4.1-45.51	Text was modified in the FEIR per the comment.
4.1-45.52	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.

Comment #	Response
4.1-46.1	Text was modified in the FEIR per the comment.
4.1-46.2	Please see responses to main COP letter.
4.1-46.3	Text was modified in the FEIR per the comment.
4.1-46.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-46.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-46.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-46.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-46.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-46.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-46.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-46.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-46.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-46.13	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.14	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.15	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.16	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.17	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.18	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.19	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.20	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.21	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.22	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.23	Text has not been modified as the changes do not provide additional

Comment #	Response
	clarity or information to the reader.
4.1-46.24	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.25	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.26	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.27	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.28	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.29	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.30	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.31	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.32	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.33	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.34	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.35	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.36	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.37	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.38	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.39	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.40	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.41	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-46.42	Text has been modified to include the results of the 2011 HRA.
4.1-46.43	Text has been modified to include the results of the 2011 HRA.
4.1-46.44	Text has been modified to include the results of the 2011 HRA.
4.1-46.45	Text has been modified to include the results of the 2011 HRA.
4.1-47.1	Text has been modified to include the results of the 2011 HRA.

Comment #	Response
4.1-47.2	Text has been modified to include the results of the 2011 HRA.
4.1-47.3	Text has been modified to include the results of the 2011 HRA.
4.1-47.4	Text has been modified to include the results of the 2011 HRA.
4.1-47.5	Text has been modified to include the results of the 2011 HRA.
4.1-47.6	Text has been modified to include the results of the 2011 HRA.
4.1-47.7	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-47.8	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.1-47.9	Text was modified in the FEIR per the comment.
4.1-48.1	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-48.2	Please see responses to main COP letter.
4.1-48.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-48.4	Please see responses to main COP letter.
4.1-48.5	Text was modified in the FEIR per the comment.
4.1-48.6	Text was modified in the FEIR per the comment.
4.1-48.7	Text was modified in the FEIR per the comment.
4.1-48.8	Text was modified in the FEIR per the comment.
4.1-48.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-48.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-48.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-48.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-48.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-48.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-48.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-48.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-48.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-49.1	Please see responses to main COP letter.
4.1-49.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-49.3	Text was not modified as suggested because it does not reflect the

Comment #	Response
	independent judgment of the agencies.
4.1-49.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-49.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-49.6	Please see responses to main COP letter.
4.1-49.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-49.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-49.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-49.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.1-49.11	Please see responses to main COP letter.
4.2-1.1	The text was not modified as this is a general setting discussion about refineries in general, not about this specific location. Subsequent discussions list the hazards associated with the SMF. Some text has been added to clarify this point.
4.2-1.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-1.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-3.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.2-3.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.2-3.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.2-3.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies and contains information that has not been independently verified.
4.2-5.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.2-7.1	Text was modified in the FEIR per the comment.
4.2-7.2	Text was modified in the FEIR per the comment.
4.2-7.3	Text was modified in the FEIR per the comment.
4.2-7.4	Text was modified in the FEIR per the comment.
4.2-7.5	Text was modified in the FEIR per the comment.
4.2-7.6	Text was modified in the FEIR per the comment.
4.2-7.7	Text was modified in the FEIR per the comment.
4.2-7.8	Text was modified in the FEIR per the comment.

Comment #	Response
4.2-7.9	Text was modified in the FEIR per the comment.
4.2-8.1	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-8.2	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-8.3	Text was modified with the addition that the Applicant indicates this information to be accurate as it has not been independently verified.
4.2-8.4	Text was modified in the FEIR per the comment.
4.2-8.5	Text was modified in the FEIR per the comment.
4.2-9.1	Regulatory requirements in regards to RMP and OSHA requirements are addressed in section 4.2.2. Text was not modified.
4.2-9.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-9.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-9.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-9.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-9.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-9.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-9.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-9.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-9.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-9.11	Text was modified in the FEIR per the comment.
4.2-12.1	Text related to gas pipelines has been removed from the FEIR.
4.2-12.2	Text related to gas pipelines has been removed from the FEIR.
4.2-13.1	Text related to gas pipelines has been removed from the FEIR.
4.2-30.1	Regulatory requirements in regards to RMP and OSHA requirements are addressed in section 4.2.2. Text was not modified.
4.2-30.2	Regulatory requirements in regards to RMP and OSHA requirements are addressed in section 4.2.2. Text was not modified.
4.2-30.3	Regulatory requirements in regards to RMP and OSHA requirements are addressed in section 4.2.2. Text was not modified.
4.2-30.4	Regulatory requirements in regards to RMP and OSHA requirements are addressed in section 4.2.2. Text was not modified.
4.2-30.5	Regulatory requirements in regards to RMP and OSHA requirements

Comment #	Response
	are addressed in section 4.2.2. Text was not modified.
4.2-30.6	Regulatory requirements in regards to RMP and OSHA requirements are addressed in section 4.2.2. Text was not modified.
4.2-30.7	Regulatory requirements in regards to RMP and OSHA requirements are addressed in section 4.2.2. Text was not modified.
4.2-30.8	Regulatory requirements in regards to RMP and OSHA requirements are addressed in section 4.2.2. Text was not modified.
4.2-30.9	Regulatory requirements in regards to RMP and OSHA requirements are addressed in section 4.2.2. Text was not modified.
4.2-31.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.2-31.2	Text was modified in the FEIR per the comment.
4.2-31.3	Text was modified in the FEIR per the comment.
4.2-31.4	Text was modified in the FEIR per the comment.
4.2-31.5	Text was modified in the FEIR per the comment.
4.2-31.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.2-31.7	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.2-31.8	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-31.9	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-31.10	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-31.11	Text was modified in the FEIR per the comment.
4.2-31.12	Text was modified in the FEIR per the comment.
4.2-31.13	Text was modified in the FEIR per the comment.
4.2-31.14	Text was modified in the FEIR per the comment.
4.2-33.1	Text was modified in the FEIR per the comment.
4.2-33.2	Text was modified in the FEIR per the comment.
4.2-33.3	Text was modified in the FEIR per the comment.
4.2-33.4	Text was modified in the FEIR per the comment.
4.2-33.5	Text was modified as suggested in the COP main comment letter.
4.2-33.6	Text was modified as suggested in the COP main comment letter.
4.2-33.7	Text was modified as suggested in the COP main comment letter.
4.2-33.8	Text was modified as suggested in the COP main comment letter.
4.2-33.9	Text was modified as suggested in the COP main comment letter.
4.2-33.10	Text was modified as suggested in the COP main comment letter.
4.2-33.11	Text was modified as suggested in the COP main comment letter.
4.2-33.12	Text was modified as suggested in the COP main comment letter.
4.2-33.13	Text was modified as suggested in the COP main comment letter.

Comment #	Response
4.2-33.14	Text was modified as suggested in the COP main comment letter.
4.2-33.15	Text was modified as suggested in the COP main comment letter.
4.2-33.16	Text was modified as suggested in the COP main comment letter.
4.2-33.17	Text was modified as suggested in the COP main comment letter.
4.2-33.18	Text was modified as suggested in the COP main comment letter.
4.2-33.19	Text was modified as suggested in the COP main comment letter.
4.2-33.20	Text was modified as suggested in the COP main comment letter.
4.2-33.21	Text was modified as suggested in the COP main comment letter.
4.2-34.1	Text was modified as suggested in the COP main comment letter.
4.2-34.2	Text was modified as suggested in the COP main comment letter.
4.2-34.3	Text was modified as suggested in the COP main comment letter.
4.2-34.4	Text was modified as suggested in the COP main comment letter.
4.2-34.5	Text was modified as suggested in the COP main comment letter.
4.2-34.6	Text was modified as suggested in the COP main comment letter.
4.2-34.7	Text was modified as suggested in the COP main comment letter.
4.2-34.8	Text was modified as suggested in the COP main comment letter.
4.2-34.9	Text was modified as suggested in the COP main comment letter.
4.2-34.10	Text was modified as suggested in the COP main comment letter.
4.2-34.11	Text was modified as suggested in the COP main comment letter.
4.2-34.12	Text was modified as suggested in the COP main comment letter.
4.2-34.13	Text was modified as suggested in the COP main comment letter.
4.2-34.14	Text was modified as suggested in the COP main comment letter.
4.2-34.15	Text was modified as suggested in the COP main comment letter.
4.2-34.16	Text was modified as suggested in the COP main comment letter.
4.2-34.17	Text was modified as suggested in the COP main comment letter.
4.2-34.18	Text was modified as suggested in the COP main comment letter.
4.2-34.19	Text was modified as suggested in the COP main comment letter.
4.2-34.20	Text was modified as suggested in the COP main comment letter.
4.2-34.21	Text was modified as suggested in the COP main comment letter.
4.2-34.22	Text was modified as suggested in the COP main comment letter.
4.2-34.23	Text was modified as suggested in the COP main comment letter.
4.2-34.24	Text was modified as suggested in the COP main comment letter.
4.2-34.25	Text was modified as suggested in the COP main comment letter.
4.2-34.26	Text was modified as suggested in the COP main comment letter.
4.2-35.1	Text was not modified as the impacts of the project are discussed in the following sections.
4.2-35.2	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-35.3	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-35.4	Text was not modified as suggested because it contains information that has not been independently verified.

Comment #	Response
4.2-35.5	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-35.6	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-35.7	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-37.1	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-37.2	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-38.1	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-38.2	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-38.3	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-38.4	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-39.1	Text was not modified as this section discusses the regulatory background, not the impacts of the project.
4.2-40.1	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-40.2	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-40.3	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-41.1	References to construction standards have been removed from the FEIR.
4.2-41.2	References to construction standards have been removed from the FEIR.
4.2-41.3	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-41.4	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-42.1	The discussion of DOGGR has been removed from the FEIR as it is not applicable.
4.2-43.1	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-45.1	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-45.2	References to construction standards have been removed from the FEIR.

Comment #	Response
4.2-47.1	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-47.2	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-48.1	Text was modified in the FEIR per the comment.
4.2-49.1	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-49.2	Text was not modified as suggested because it contains information that has not been independently verified.
4.2-50.1	Text was modified in the FEIR per the comment.
4.2-51.1	Text was modified in the FEIR per the comment.
4.2-51.2	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.3	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.4	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.5	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.6	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.7	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.8	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.9	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.10	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.11	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.12	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.13	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.14	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.15	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.16	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-51.17	Text was modified for impact PSHM.3 to reflect comments from

Comment #	Response
	RWQCB and the Applicant.
4.2-52.1	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-52.2	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-52.3	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-52.4	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-52.5	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-53.1	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-53.2	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-53.3	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-53.4	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-53.5	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-53.6	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.2-53.7	Text was modified for impact PSHM.3 to reflect comments from RWQCB and the Applicant.
4.3-10.1	Text was modified in the FEIR per the comment.
4.3-11.1	Text was moved to the measurements section for the FEIR.
4.3-11.2	Text was not modified in the FEIR as the SMPS acronym is already being used and would be confusing..
4.3-11.3	Text was modified in the FEIR per the comment.
4.3-11.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-11.5	Text was modified in the FEIR per the comment.
4.3-11.6	Text was not modified as suggested but similar text was added.
4.3-11.7	Text was not modified as suggested but similar text was added.
4.3-11.8	Information that the increase would occur at night was added to the text in the FEIR.
4.3-11.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-11.10	Text about pump station monitoring was moved, thereby rendering this comment not relevant.
4.3-12.1	Text about pump station monitoring was moved, thereby rendering

Comment #	Response
	this comment not relevant.
4.3-12.2	The pump station parcel is adjacent to the RR right of way, El Camino Real ROW and agricultural parcels. Information is presented in the DEIR in order to assist the agencies in determining compliance. Additional monitoring over a longer timeframe would be expected in order to determine compliance at the respective locations and receptors. This has been added to the mitigation measure.
4.3-12.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.3-12.4	Text was modified within the table to add clarity as to the location of monitoring.
4.3-12.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-12.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-12.7	Text was modified in the FEIR per the comment.
4.3-12.8	Text was modified in the FEIR per the comment.
4.3-12.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-12.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-12.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-12.12	Text was not modified. Noise levels in all areas are dominated by traffic noise.
4.3-17.1	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.1	Please see responses to main COP letter.
4.3-18.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.7	Text was modified in the FEIR per the comment.
4.3-18.8	Text was modified in the FEIR per the comment.
4.3-18.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.

Comment #	Response
4.3-18.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.18	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-18.19	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-19.1	Text was modified in the FEIR per the comment.
4.3-19.2	Please see responses to main COP letter.
4.3-19.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-19.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-19.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.3-19.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-1.1	Text was modified in the FEIR per the comment.
4.4-1.2	Text was modified in the FEIR per the comment.
4.4-2.1	Text was modified in the FEIR per the comment.
4.4-2.2	Text was modified in the FEIR per the comment.
4.4-2.3	Text was modified in the FEIR per the comment.
4.4-2.4	Text was modified in the FEIR per the comment.
4.4-3.1	This section analyzes existing conditions. Text already states that the project would not increase hazardous wastes.
4.4-7.1	Text was modified in the FEIR to reflect the information provided by the Applicant in regards to increased fuel gas and onsite electrical generation expected with increased crude levels.
4.4-7.2	Text was modified in the FEIR per the comment.

Comment #	Response
4.4-7.3	Text was modified in the FEIR per the comment.
4.4-7.4	Text was modified in the FEIR per the comment.
4.4-7.5	Text was modified in the FEIR per the comment.
4.4-7.6	Text was modified in the FEIR per the comment.
4.4-7.7	Text was modified in the FEIR per the comment.
4.4-8.1	Text was modified in the FEIR to reflect the information provided by the Applicant in regards to increased fuel gas and onsite electrical generation expected with increased crude levels.
4.4-8.2	Text was modified in the FEIR per the comment.
4.4-8.3	Text was modified in the FEIR per the comment.
4.4-8.4	Text was modified in the FEIR per the comment.
4.4-8.5	Text was modified in the FEIR per the comment.
4.4-8.6	Text was modified in the FEIR per the comment.
4.4-9.1	Text was not modified as suggested because it contains information that has not been independently verified.
4.4-10.1	Text was modified in the FEIR per the comment.
4.4-18.1	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-18.2	Text related to water supply has been deleted and water supply discussions have been referred to section 4.6.
4.4-18.3	Text related to water supply has been deleted and water supply discussions have been referred to section 4.6.
4.4-18.4	Text was corrected in the FEIR to refer to sanitary wastewater as opposed to wastewater or sewage.
4.4-19.1	Text related to the public sewer system has been removed from the FEIR.
4.4-19.2	Text related to the generation of hazardous wastes has been modified in the FEIR.
4.4-19.3	Text related to the generation of hazardous wastes has been modified in the FEIR.
4.4-19.4	Text related to the generation of hazardous wastes has been modified in the FEIR.
4.4-19.5	Text related to the generation of hazardous wastes has been modified in the FEIR.
4.4-19.6	Text related to the generation of hazardous wastes has been modified in the FEIR.
4.4-19.7	Text related to the generation of hazardous wastes has been modified in the FEIR.
4.4-19.8	Text related to the generation of hazardous wastes has been modified in the FEIR.
4.4-19.9	Text was modified in the FEIR per the comment.

Comment #	Response
4.4-20.1	The discussion of decreased electrical consumption with increased crude throughput has been expanded in the FEIR. However, the extent to which crude oil increased throughput would produce decreases in electricity purchased would also be a function of crude type and levels of gas produced from different crudes. There are situations where crude oil throughput might not produce reductions in electrical use. Additional historical data would also be useful as opposed to only 3 years. Therefore, the designation of the impact as beneficial has not been supported and the impacts would remain less than significant.
4.4-20.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.

Comment #	Response
4.4-20.18	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.19	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.20	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.21	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.22	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.23	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.24	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.25	The discussion of decreased gas consumption with increased crude throughput has been expanded in the FEIR. However, the extent to which crude oil increased throughput would produce decreases in gas purchased would also be a function of crude type and levels of gas produced from different crudes. There are situations where crude oil throughput might not produce reductions in electrical use. Additional historical data would also be useful as opposed to only 3 years. Therefore, the designation of the impact as beneficial has not been supported and the impacts would remain less than significant.
4.4-20.26	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.27	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.28	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.29	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.30	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.31	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.32	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.33	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.34	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-20.35	Text was not modified as suggested because it does not reflect the

Comment #	Response
	independent judgment of the agencies.
4.4-21.1	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.18	Text was modified in the FEIR per the comment.
4.4-21.19	Please see responses to main COP letter.
4.4-21.20	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.21	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.22	Text was not modified as suggested because it does not reflect the

Comment #	Response
	independent judgment of the agencies.
4.4-21.23	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.4-21.24	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-1.1	Text was modified in the FEIR per the comment.
4.5-20.1	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.2	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.4	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.5	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.6	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.8	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.9	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.10	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.11	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.12	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.13	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.14	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.15	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.16	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.17	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.18	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.

Comment #	Response
4.5-20.19	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.20	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.21	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.22	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.23	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.24	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.25	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.26	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.27	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.28	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.29	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.30	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.31	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.32	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.33	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.34	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.35	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.36	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.37	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.38	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.39	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.

Comment #	Response
4.5-20.40	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.41	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.42	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.43	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.44	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.45	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.46	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.47	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.48	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.49	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.50	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.51	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.52	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.53	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.54	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.55	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.56	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.57	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.58	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-20.59	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.5-21.1	Text was modified in the FEIR per the comment.
4.5-21.2	Text was modified in the FEIR per the comment.

Comment #	Response
4.5-21.3	Text was modified in the FEIR per the comment.
4.5-21.4	Text was modified in the FEIR per the comment.
4.5-22.1	Text was modified in the FEIR per the comment.
4.5-22.2	Text was modified in the FEIR per the comment.
4.5-22.3	Text was modified in the FEIR per the comment.
4.5-22.4	Text was modified in the FEIR per the comment.
4.5-22.5	Text was modified in the FEIR per the comment.
4.5-22.6	Text was modified in the FEIR per the comment.
4.5-23.1	Text was modified in the FEIR per the comment.
4.5-23.2	Text was modified in the FEIR per the comment.
4.5-23.3	Text was modified in the FEIR per the comment.
4.5-23.4	Text was modified in the FEIR per the comment.
4.5-23.5	Text was modified in the FEIR per the comment.
4.5-23.6	Text was modified in the FEIR per the comment.
4.5-23.7	Text was modified in the FEIR per the comment.
4.5-23.8	Text was modified in the FEIR per the comment.
4.5-23.9	Text was modified in the FEIR per the comment.
4.5-23.10	Text was modified in the FEIR per the comment.
4.5-23.11	Text was modified in the FEIR per the comment.
4.5-23.12	Text was modified in the FEIR per the comment.
4.5-23.13	Text was modified in the FEIR per the comment.
4.5-23.14	Text was modified in the FEIR per the comment.
4.5-23.15	Text was modified in the FEIR per the comment.
4.5-24.1	Text was modified in the FEIR per the comment.
4.5-24.2	Text was modified in the FEIR per the comment.
4.5-24.3	Text was modified in the FEIR per the comment.
4.5-24.4	Text was modified in the FEIR per the comment.
4.5-24.5	Text was modified in the FEIR per the comment.
4.5-24.6	Text was modified in the FEIR per the comment.
4.5-24.7	Text was modified in the FEIR per the comment.
4.5-24.8	Text was modified in the FEIR per the comment.
4.5-24.9	Text was modified in the FEIR per the comment.
4.5-24.10	Text was modified in the FEIR per the comment.
4.5-24.11	Text was modified in the FEIR per the comment.
4.5-24.12	Text was modified in the FEIR per the comment.
4.5-24.13	Text was modified in the FEIR per the comment.
4.5-24.14	Text was modified in the FEIR per the comment.
4.5-24.15	Text was modified in the FEIR per the comment.
4.5-24.16	Text was modified in the FEIR per the comment.
4.5-24.17	Text was modified in the FEIR per the comment.
4.5-24.18	Text was modified in the FEIR per the comment.
4.5-24.19	Text was modified in the FEIR per the comment.

Comment #	Response
4.5-24.20	Text was modified in the FEIR per the comment.
4.5-24.21	Text was modified in the FEIR per the comment.
4.5-24.22	Text was modified in the FEIR per the comment.
4.5-24.23	Text was modified in the FEIR per the comment.
4.5-24.24	Text was modified in the FEIR per the comment.
4.5-24.25	Text was modified in the FEIR per the comment.
4.5-25.1	Text was modified in the FEIR per the comment.
4.5-25.2	Text was modified in the FEIR per the comment.
4.5-25.3	Text was modified in the FEIR per the comment.
4.5-25.4	Text was modified in the FEIR per the comment.
4.5-25.5	Text was modified in the FEIR per the comment.
4.5-25.6	Text was modified in the FEIR per the comment.
4.5-25.7	Text was modified in the FEIR per the comment.
4.5-25.8	Text was modified in the FEIR per the comment.
4.5-25.9	Text was modified in the FEIR per the comment.
4.5-25.10	Text was modified in the FEIR per the comment.
4.5-25.11	Text was modified in the FEIR per the comment.
4.5-26.1	Traffic numbers are accurately described in the consistency analysis. No change is proposed in the comment and no change has been made to the FEIR.
4.5-26.2	Text was modified in the FEIR per the comment.
4.5-26.3	Text was modified in the FEIR per the comment.
4.5-26.4	Text was modified in the FEIR per the comment.
4.5-26.5	Text was modified in the FEIR per the comment.
4.5-26.6	Text was modified in the FEIR per the comment.
4.5-26.7	Text was modified in the FEIR per the comment.
4.5-27.1	Text was modified in the FEIR per the comment.
4.5-27.2	Text was modified in the FEIR per the comment.
4.5-27.3	Text was modified in the FEIR per the comment.
4.5-27.4	Text was modified in the FEIR per the comment.
4.5-27.5	Text was modified in the FEIR per the comment.
4.5-27.6	Text was modified in the FEIR per the comment.
4.5-27.7	Text was modified in the FEIR per the comment.
4.5-27.8	Text was modified in the FEIR per the comment.
4.5-28.1	Text was modified in the FEIR per the comment.
4.5-28.2	Text was modified in the FEIR per the comment.
4.5-28.3	Text was modified in the FEIR per the comment.
4.5-28.4	Text was modified in the FEIR per the comment.
4.5-28.5	Text was modified in the FEIR per the comment.
4.5-28.6	Text was modified in the FEIR per the comment.
4.5-28.7	Text was modified in the FEIR per the comment.
4.5-29.1	Text was modified in the FEIR per the comment.

Comment #	Response
4.5-29.2	Text was modified in the FEIR per the comment.
4.5-30.1	Text was modified in the FEIR per the comment.
4.5-30.2	Text was modified in the FEIR per the comment.
4.5-30.3	Text was modified in the FEIR per the comment.
4.5-30.4	Text was modified in the FEIR per the comment.
4.5-30.5	Text was modified in the FEIR per the comment.
4.5-30.6	Text was modified in the FEIR per the comment.
4.5-30.7	Text was modified in the FEIR per the comment.
4.5-30.8	Text was modified in the FEIR per the comment.
4.5-30.9	Text was modified in the FEIR per the comment.
4.5-30.10	Text was modified in the FEIR per the comment.
4.5-31.1	Text was modified in the FEIR per the comment.
4.5-31.2	Text was modified in the FEIR per the comment.
4.5-31.3	Text was modified in the FEIR per the comment.
4.5-31.4	Text was modified in the FEIR per the comment.
4.5-31.5	Text was modified in the FEIR per the comment.
4.5-31.6	Text was modified in the FEIR per the comment.
4.5-31.7	Text was modified in the FEIR per the comment.
4.5-32.1	Text was modified in the FEIR per the comment.
4.5-32.2	Text was modified in the FEIR per the comment.
4.5-32.3	Text was modified in the FEIR per the comment.
4.5-32.4	Text was modified in the FEIR per the comment.
4.5-32.5	Text was modified in the FEIR per the comment.
4.5-32.6	Text was modified in the FEIR per the comment.
4.5-32.7	Text was modified in the FEIR per the comment.
4.5-33.1	Text was modified in the FEIR per the comment.
4.5-33.2	Text was modified in the FEIR per the comment.
4.5-33.3	Text was modified in the FEIR per the comment.
4.5-33.4	Text was modified in the FEIR per the comment.
4.5-33.5	Text was modified in the FEIR per the comment.
4.5-33.6	Text was modified in the FEIR per the comment.
4.5-33.7	Text was modified in the FEIR per the comment.
4.5-33.8	Text was modified in the FEIR per the comment.
4.5-33.9	Text was modified in the FEIR per the comment.
4.5-33.10	Text was modified in the FEIR per the comment.
4.5-34.1	Text was modified in the FEIR per the comment.
4.5-34.2	Text was modified in the FEIR per the comment.
4.5-34.3	Text was modified in the FEIR per the comment.
4.5-34.4	Text was modified in the FEIR per the comment.
4.5-34.5	Text was modified in the FEIR per the comment.
4.5-34.6	Text was modified in the FEIR per the comment.
4.5-34.7	Text was modified in the FEIR per the comment.

Comment #	Response
4.5-34.8	Text was modified in the FEIR per the comment.
4.5-34.9	Text was modified in the FEIR per the comment.
4.5-34.10	Text was modified in the FEIR per the comment.
4.5-34.11	Text was modified in the FEIR per the comment.
4.5-34.12	Text was modified in the FEIR per the comment.
4.5-35.1	Text was modified in the FEIR per the comment.
4.5-35.2	Text was modified in the FEIR per the comment.
4.5-35.3	Text was modified in the FEIR per the comment.
4.5-35.4	Text was modified in the FEIR per the comment.
4.5-35.6	Text was modified in the FEIR per the comment.
4.5-36.1	Text was modified in the FEIR per the comment.
4.5-36.2	Text was modified in the FEIR per the comment.
4.5-36.3	Text was modified in the FEIR per the comment.
4.5-36.4	Text was modified in the FEIR per the comment.
4.5-36.5	Text was modified in the FEIR per the comment.
4.5-36.6	Text was modified in the FEIR per the comment.
4.5-37.1	Text was modified in the FEIR per the comment.
4.5-37.2	Text was modified in the FEIR per the comment.
4.5-37.3	Text was modified in the FEIR per the comment.
4.5-37.4	Text was modified in the FEIR per the comment.
4.5-37.5	Text was modified in the FEIR per the comment.
4.5-37.6	Text was modified in the FEIR per the comment.
4.5-37.7	Text was modified in the FEIR per the comment.
4.5-37.8	Text was modified in the FEIR per the comment.
4.5-37.9	Text was modified in the FEIR per the comment.
4.5-38.1	Text was modified in the FEIR per the comment.
4.5-38.2	Text was modified in the FEIR per the comment.
4.5-38.3	Text was modified in the FEIR per the comment.
4.5-38.4	Text was modified in the FEIR per the comment.
4.5-38.5	Text was modified in the FEIR per the comment.
4.5-38.6	Text was modified in the FEIR per the comment.
4.5-38.7	Text was modified in the FEIR per the comment.
4.5-39.1	The Emergency Response Plan also addresses emergencies at the Refinery. In addition, as crude oil throughput would increase, spills are also a concern.
4.5-39.2	The fire department would also respond to spill incidents.
4.5-39.3	Text was modified in the FEIR per the comment.
4.5-39.4	Text was modified in the FEIR per the comment.
4.5-39.5	The County definitions consider an increase in throughput as an expansion of the facility. Regardless, ConocoPhillips is found to be consistent with this policy.
4.5-39.6	Text was modified in the FEIR per the comment.

Comment #	Response
4.5-39.7	Text was modified in the FEIR per the comment.
4.5-39.8	Text was modified in the FEIR per the comment.
4.5-39.9	Text was modified in the FEIR per the comment.
4.5-40.1	The County considers an increase in throughput as an expansion of the operations at the Refinery.
4.5-40.2	The discussion is about wastewater, which will increase as a result of the throughput increase. The discussion is appropriate based on the policy it references.
4.5-40.3	Text was modified in the FEIR per the comment.
4.5-40.4	Text was modified in the FEIR per the comment.
4.5-40.5	Please see response to COP-31.
4.5-40.6	Please see response to COP-31.
4.5-40.7	Please see response to COP-31.
4.5-41.1	Text was modified in the FEIR per the comment.
4.5-41.2	Text was modified in the FEIR per the comment.
4.5-42.1	Text was modified in the FEIR per the comment.
4.5-42.2	Text was modified in the FEIR per the comment.
4.5-43.1	Text was modified in the FEIR per the comment.
4.5-43.2	Text was modified in the FEIR per the comment.
4.5-43.3	Text was modified in the FEIR per the comment.
4.5-43.4	Text was modified in the FEIR per the comment.
4.5-43.5	Text was modified in the FEIR per the comment.
4.5-43.6	Text was modified in the FEIR per the comment.
4.5-43.7	Text was modified in the FEIR per the comment.
4.5-43.8	Text was modified in the FEIR per the comment.
4.5-43.9	Text was modified in the FEIR per the comment.
4.5-43.10	While this section references new development, the consistency analysis is provided since the expansion could be considered new development by the County. The text finds the project consistent with this Policy.
4.5-44.1	Text was modified in the FEIR per the comment.
4.5-44.2	Text was modified in the FEIR per the comment.
4.5-44.3	Text was modified in the FEIR per the comment.
4.5-44.4	While this section references new development, the consistency analysis is provided since the expansion could be considered new development by the County. The text finds the project consistent with this Policy.
4.5-44.5	Text was modified in the FEIR per the comment.
4.5-44.6	Text was modified in the FEIR per the comment.
4.5-44.7	While this section references new development, the consistency analysis is provided since the expansion could be considered new development by the County. The text finds the project consistent

Comment #	Response
	with this Policy.
4.5-45.1	Text was modified in the FEIR per the comment.
4.5-45.2	Text was modified in the FEIR per the comment.
4.5-45.3	Text was modified in the FEIR per the comment.
4.5-45.4	Text was modified in the FEIR per the comment.
4.5-45.5	Text was modified in the FEIR per the comment.
4.5-45.6	Text was modified in the FEIR per the comment.
4.5-45.7	Text was modified in the FEIR per the comment.
4.5-45.8	Text was modified in the FEIR per the comment.
4.5-46.1	The consistency analysis provided specifies that no new construction will occur. The analysis is provided to let the reader know that the Project does not entail new construction and is therefore consistent with the policy.
4.5-46.2	Text was modified in the FEIR per the comment.
4.5-46.3	Text was modified in the FEIR per the comment.
4.5-46.4	Text was modified in the FEIR per the comment.
4.6-3.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.6-4.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.6-12.1	Please see responses to main COP letter.
4.6-12.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.6-12.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.6-12.4	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.6-12.5	Please see responses to main COP letter.
4.6-13.1	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.6-13.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.6-13.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.6-13.4	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-1.1	Please see responses to main COP letter.
4.7-5.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-17.1	Please see responses to main COP letter.
4.7-17.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.

Comment #	Response
4.7-17.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-17.4	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-18.1	Please see responses to main COP letter.
4.7-18.2	Please see responses to main COP letter.
4.7-18.3	Text has been modified throughout the Water Resources Section and this mitigation measure has been eliminated.
4.7-18.4	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-18.5	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-18.6	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-18.7	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
4.7-19.1	Please see responses to main COP letter.
4.7-19.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-19.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-19.4	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-19.5	Please see responses to main COP letter.
4.7-19.6	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-19.7	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-19.8	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-20.1	While there would not be any increase in water discharge beyond the NPDES limits, there will be an increase in overall water discharge for the Project. WR-3.1 simply requires that additionally generated produced water as a result of the Project is treated by the wastewater treatment system in conformance with the NPDES permit. The measure does not require changes to the NPDES permit, only that ConocoPhillips comply with the permit. No change has been made to the document.
4.7-20.2	WR-3.2 provides for the latitude to make amendments, as needed, which as pointed out in the comment, may not be necessary as a result of the Project not increasing spill size. If the Spill Management Plan is adequate for the throughput increase, then it will not need to

Comment #	Response
	be amended. The mitigation measure remains unchanged in the Final EIR.
4.7-20.3	See response for 4.7-20.2 above
4.7-20.4	See response for 4.7-20.2 above
4.7-21.1	Please see responses to main COP letter.
4.7-21.2	Text has not been modified as the changes do not provide additional clarity or information to the reader.
4.7-21.3	Text has not been modified as the changes do not provide additional clarity or information to the reader.
5-5.1	Text was modified in the FEIR per the comment.
5-5.2	Text was modified in the FEIR per the comment.
5-5.3	Text was modified in the FEIR per the comment.
5-5.4	Text was modified in the FEIR per the comment.
5-5.5	Text was modified in the FEIR per the comment.
5-6.1	Text was modified in the FEIR per the comment.
5-7.1	Text was modified in the FEIR per the comment.
5-7.2	Text was modified in the FEIR per the comment.
5-7.3	Text was modified in the FEIR per the comment.
5-7.4	Text was modified in the FEIR per the comment.
5-7.5	Text was modified in the FEIR per the comment.
5-7.6	Text was modified in the FEIR per the comment.
5-7.7	Text was modified in the FEIR per the comment.
5-7.8	Text was modified in the FEIR per the comment.
5-7.9	Text was modified in the FEIR per the comment.
5-7.10	Text was modified in the FEIR per the comment.
5-7.11	Text was modified in the FEIR per the comment.
5-7.12	Text was modified in the FEIR per the comment.
5-7.13	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.14	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.15	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.16	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.17	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.

Comment #	Response
5-7.18	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.19	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.20	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.21	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.22	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.23	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.24	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.25	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.26	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.27	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-7.28	Text has not been modified as the changes do not provide additional clarity or information to the reader. Information on the construction requirements is already in the DEIR.
5-12.1	Please see responses to main COP letter.
5-12.2	Text was modified in the FEIR per the comment.
5-12.3	Text was modified in the FEIR per the comment.
5-12.4	Text was modified in the FEIR per the comment.
5-13.1	Text was modified in the FEIR per the comment.
5-13.2	Text was modified in the FEIR per the comment.
5-13.3	Text was not modified as suggested because it does not reflect the independent judgment of the agencies.
5-13.4	Text was modified in the FEIR per the comment.

Comment #	Response
5-13.5	Text was modified in the FEIR per the comment.
6-3.1	Text was modified in the FEIR per the comment.
6-3.2	Text was modified in the FEIR per the comment.
6-3.3	Text was modified in the FEIR per the comment.
6-3.4	Text was modified in the FEIR per the comment.
6-3.5	Text was modified in the FEIR per the comment.
6-3.6	Text was modified in the FEIR per the comment.
6-3.7	Text was modified in the FEIR per the comment.
6-3.8	Text was modified in the FEIR per the comment.
6-3.9	Text was modified in the FEIR per the comment.
6-3.10	Text was modified in the FEIR per the comment.
6-3.11	Text was modified in the FEIR per the comment.
6-3.12	Text was modified in the FEIR per the comment.
6-3.13	Text was modified in the FEIR per the comment.
6-10.1	Please see responses to main COP letter.
6-11.1	Please see responses to main COP letter.
6-12.1	Please see responses to main COP letter.
6-14.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
6-14.2	Please see responses to main COP letter.
6-14.3	Text was modified in the FEIR per the comment.
7-1.1	Text has not been modified as the changes do not provide additional clarity or information to the reader.
7-3.1	Text was modified in the FEIR. Although crude oil is transported to the SMF for processing, the processed crude is then transported by pipeline to the Bay Area. Under the scenario where the SMF is not available, crude oil would move to LA or Bay area markets by pipeline as well, with offloading facilities in strategic locations similar to current operations.
8-4.1	Please see responses to main COP letter.
8-6.1	Please see responses to main COP letter.
8-8.1	Please see responses to main COP letter.
8-11.1	Please see responses to main COP letter.
8-12.1	Please see responses to main COP letter.
8-13.1	Please see responses to main COP letter.