

Executive Summary

This Environmental Impact Report (EIR) assesses the environmental impacts associated with the East Cat Canyon Oil Field Redevelopment Plan (proposed Project). Aera Energy LLC (Aera) is the Applicant. The proposed Project site is located in northern Santa Barbara County as shown on Figure ES-1.

This EIR is an informational document that is being used by the general public and governmental agencies to review and evaluate the proposed Project. The reader should not rely exclusively on the Executive Summary as the sole basis for judgment of the proposed Project and alternatives. The complete EIR should be consulted for specific information about the environmental effects and associated mitigation measures for each respective issue area. The Executive Summary consists of the following sections:

- An introduction which discusses the regulatory oversight in the preparation of the EIR and public scoping process, and agency use of the EIR.
- A brief description of the proposed Project.
- A brief description of the alternatives evaluated throughout this EIR.
- A discussion of how the environmental setting (i.e., baseline) was established for the proposed Project.
- A summary of key impacts of the proposed Project and the alternatives.
- A discussion of the environmentally superior alternative.

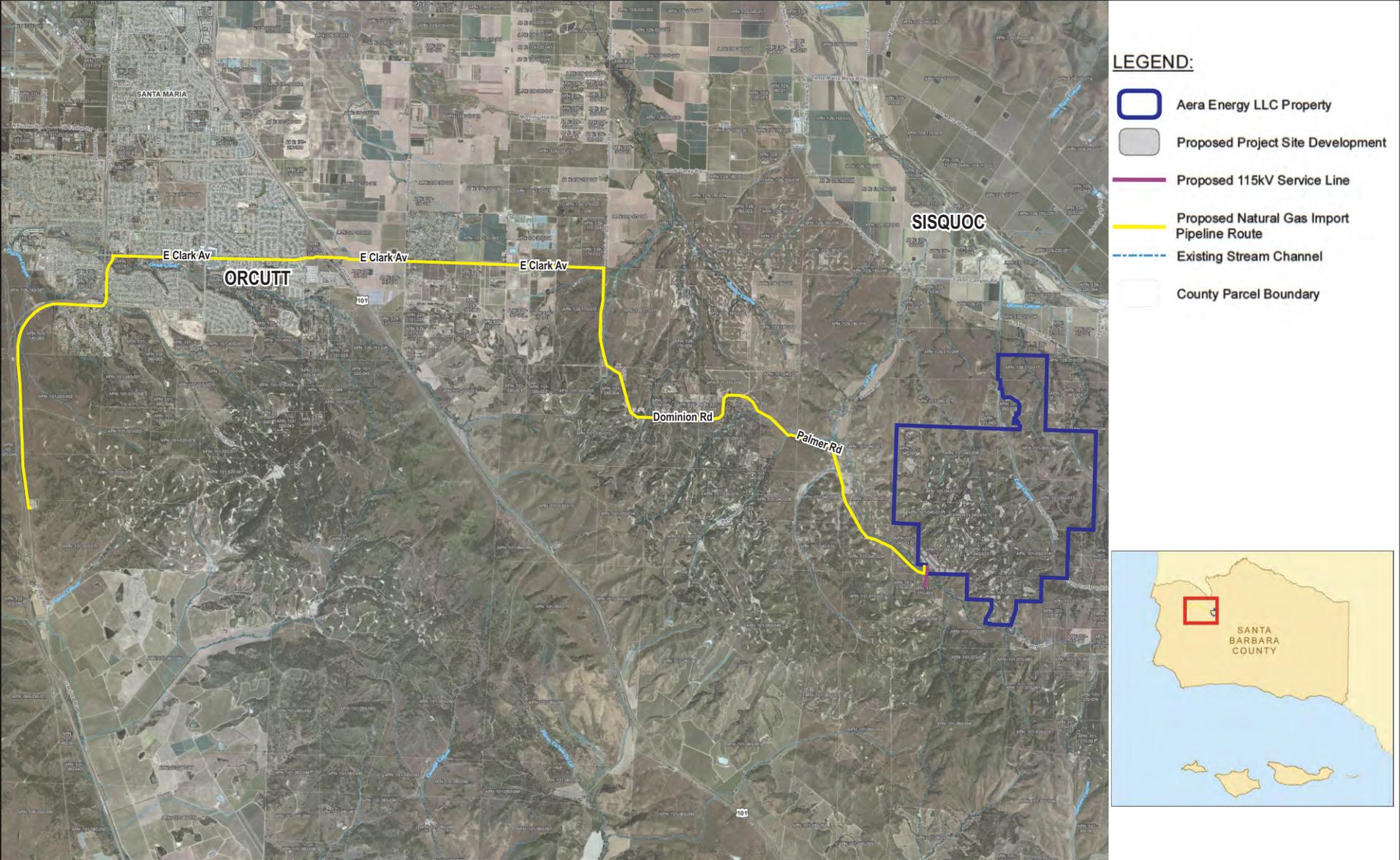
A set of Impact Summary Tables is provided at the end of the Executive Summary. These tables summarize the impacts and mitigation measures for the proposed Project and cumulative projects. The impacts and mitigation measures are discussed in detail in Section 4 of the EIR.

ES.1 Introduction

The purpose of the Executive Summary and Impact Summary Tables is to provide the reader with a brief overview of the proposed Project, the anticipated environmental effects, and potential mitigation measures that could reduce the severity of the impacts associated with the Project. The reader is encouraged to review the complete EIR for further detail.

The County of Santa Barbara, as lead agency under the California Environmental Quality Act (CEQA), determined that an EIR would be required as part of the permitting process for the proposed Project. In compliance with CEQA Guidelines, the County solicited public and agency input through distribution of a Notice of Preparation (NOP) on October 21, 2016. A public scoping meeting was also held on November 15, 2016 at the Betteravia Government Center in Santa Maria to provide an opportunity for the public to comment in person on the scope of the EIR. A Final Scoping Report was prepared to document the methods used to notify the public and agencies about the scoping process conducted for the Project, and agency and public scoping input (see Appendix A).

A number of State and local governmental agencies require an environmental analysis of a proposed project consistent with the requirements of CEQA in order to act on a project. Table ES-1 provides a list of permits and other approvals that will (or may) be needed for the proposed Project. The County, as the CEQA Lead Agency, will act first on the project before any of the responsible agencies take action on the project. Santa Barbara County decision-makers will use the EIR for decision-making purposes regarding the proposed Project. If the proposed Project is approved by all required permitting agencies, the County would oversee the implementation of the Mitigation Monitoring Program as presented in Section 7.0 of this EIR for the Project construction and operations to ensure that these activities are conducted in accordance with the Oil Drilling and Production Plan mitigation measures and other permit conditions.



Source: Aera, 2016.



Figure ES-1
Project Location and Overview

Table ES-1. Permits or Other Actions Required for Implementation of the Proposed Project

Agency	Jurisdiction	Permit/Action
Permitting Agencies		
Santa Barbara County	CEQA Lead Agency, Land Use authority, County Code Chapter 35 – County Land Use and Development Code	Certification of EIR Oil Drilling and Production Plan Compliance review and construction permits Operations compliance
Santa Barbara County Petroleum Administrator	County Code-Chapter 25, Petroleum Ordinance	New Well Permit
Santa Barbara County Air Pollution Control District	Federal Clean Air Act, State Clean Air Act, APCD Rules, CEQA	Authority to Construct Permit to Operate
California Division of Oil, Gas, and Geothermal Resources (DOGGR)	California Code of Regulations – Title 14	Oil and Gas Production Well Drill & Operate Permits Injection Well Permits Aquifer Exemption
Regional Water Quality Control Board, Central Coast Region	Clean Water Act, Porter-Cologne State Water Quality Act	Stormwater Pollution Prevention Plan General Waste Discharge Requirements Soil Beneficial Re-Use 401 Certification (if required)
California Department of Fish and Wildlife	California Fish and Game Code, CEQA	Streambed Alteration 1602 Permit (if required) Incidental Take Permit (if required)
Other Permitting Agencies		
U.S. Army Corps of Engineers	Section 404 Clean Water Act	Section 401/404 Permit – streambed alternation/crossing (if required)
U.S. Fish and Wildlife Service	Federally Listed, Threatened, and Endangered Species	Consultation for Section 7 of the Endangered Species Act (if required)

ES.2 Proposed Project

This section of the Executive Summary provides a brief description of the proposed Project. A complete description is provided in Section 2 of this EIR.

Aera proposes to re-establish oil production at a forecasted level of up to 10,000 barrels of oil per day by implementing a thermal enhanced oil recovery process within the Sisquoc Formation (reservoir) underlying the eastern area of the existing Cat Canyon Oil Field. To do so, the Project wells, roads, utility and transportation infrastructure would be built out in two phases, Phase I and Phase II. The operational results and monitoring data collected from Phase I would help to confirm the Project’s reservoir models and production forecasts, prior to additional investment and construction. At peak forecasted production of 10,000 barrels of oil per day, an additional approximately 3,000 barrels per day of light crude oil would need to be imported to transport the blended production by truck to the Aera Belridge facility in Kern County for further processing. Production from the Project is expected to continue for 30 to 50 years or more after initial production unless or until it is deemed uneconomic or undesirable to continue operation.

The proposed Project includes the following components:

Aera Oil Field Redevelopment

- **Well Pads** – Construction and restoration of approximately 72 well pad locations.

- **Wells** – Development and operation of up to 296 wells, including oil/gas production wells, steam injection wells, observation wells, non-potable water production wells, water injection wells, and fresh groundwater wells. No hydraulic fracturing would be used for this Project.
- **Access Roads** – Construction and restoration of over 9 miles of field access roads.
- **Processing Facilities** – Construction of new processing facilities, including:
 - Production group station for bulk separation of produced gas and liquids;
 - Central processing facility for oil cleaning, water cleaning, water softening, oil storage, and oil sales; and
 - Steam generation site with up to six once-through steam generators rated at 85 million British thermal units/hour (BTUs) each, a seventh once-through steam generator rated at 62.5 million BTUs/hour, an emergency flare, and ancillary facilities;
- **Field Systems** – Construction of new field systems, including
 - Production gathering and water distribution network;
 - Steam distribution network; and
 - Electrical power distribution, and supervisory control and data acquisition (SCADA) networks.
- **Fresh Water System** – Construction of a 3,000-barrel tank and water distribution pipelines for ancillary purposes, including fire protection, lavatories, showers, equipment cleaning, dust control, minor landscape irrigation, and also possibly for drinking water. No fresh water would be used to generate steam for the Project.
- **Support Infrastructure** – Construction of an office building, a multipurpose building, a warehouse and maintenance building, a facility control building, and an onsite septic system.
- **Tanker Truck Transport** – Importation of light crude via Compressed Natural Gas (CNG) trucks for blending from Aera’s Belridge Producing Complex in the South Belridge Oil Field near Bakersfield (140.4 miles), and exportation of produced, blended crude oil back to Aera’s Belridge Producing Complex.
- **Conservation Easement** – A permanent Conservation Easement, located in an area east of Long Canyon Road, where no surface oil production activities are proposed. The Conservation Easement would be used to provide mitigation for unavoidable Project impacts, and to provide conservation, educational, and recreational opportunities for the Santa Barbara County community.

SoCalGas Natural Gas Pipeline

- **Natural Gas Pipeline** – Construction of a new, approximately 14-mile, 8-inch natural gas pipeline and associated facilities, which include above ground valves, underground valves, and a metering station at the pipeline terminus. Southern California Gas Company (SoCalGas) would design, build and operate the new natural gas pipeline, which would be subject to California Public Utilities Commission (CPUC) standards.

PG&E Electrical Power Line Interconnection

- **Electrical Power Line Interconnection** – Construction of a new, approximately 0.3-mile 115 kilovolt (kV) power line to interconnect Pacific Gas and Electric Company’s (PG&E’s) Sisquoc–Santa Ynez 115 kV power line to a new Aera-owned substation, to be located within the proposed central processing facility. The 115 kV power line would be constructed, operated, and maintained by PG&E. The CPUC would have sole jurisdiction over the siting and design of the power line component of the Project.

The Project site is located within the Agricultural II (AG-II-100) and Agricultural Commercial (AC) zone districts. In accordance with the County Land Use and Development Code Table 2-1 and Section 35.5, oil and gas extraction is an allowed use within the AG-II and AC zone districts. No change in existing land use designation and/or zone district is proposed as part of the Project.

ES.3 Objectives of the Proposed Project

Pursuant to Section 15124(b) of the California Environmental Quality Act (CEQA) Guidelines, the description of the proposed Project is to contain “a clearly written statement of objectives” that would aid the lead agency in developing a reasonable range of alternatives to evaluate in the Environmental Impact Report (EIR) and would aid decision makers in preparing findings and, if necessary, a statement of overriding considerations. The County is the lead CEQA agency preparing the EIR, considering the EIR for certification, and presenting the Project to the County Planning Commission and Board of Supervisors, if required, for consideration of approval.

The Applicant’s stated Project Objectives are as follows:

1. Safely and economically produce crude oil while protecting the environment and creating new jobs, new tax revenue, community investment, and other benefits for Santa Barbara County;
2. Re-establish oil production at the East Cat Canyon Oil Field at a forecasted level of up to 10,000 barrels of oil per day in this existing oil field by drilling and operating oil/gas production wells, steam injection wells, observation wells, source water wells, water injection wells, fresh groundwater wells, production gathering systems, a central processing facility, steam generation and distribution systems, and related ancillary equipment;
3. Obtain the required natural gas and electric utility services to economically operate the Project site;
4. Protect human health and the environment by complying with all applicable laws and regulations and by implementing Aera’s System of Operating Excellence;
5. Economically and reliably transport produced crude to a competitive crude market destination having economic viability over the life of the Project;
6. Use existing well pads, roads, and other infrastructure where practical and feasible to minimize land disturbance;
7. Use non-potable brackish water as the primary source of water for steam generation to minimize use of potable groundwater; and
8. Reduce California’s reliance on imported oil by providing in-state supplies.

ES.4 Description of Project Alternatives

Alternatives to the proposed Project were developed per CEQA Guidelines Section 15126.6. This EIR uses a screening analysis to limit the number of alternatives evaluated in detail throughout the EIR. Use of the screening analysis assures that only alternatives that are potentially environmentally preferred, technically feasible, and attain most of the basic proposed Project objectives are evaluated and compared in the EIR. Section 2.11 of the EIR provides a complete description of all alternatives considered in the screening analysis, including explanation for rejecting potential alternatives for further analysis in the EIR. The following are the alternatives selected through the screening analysis, including the No Project Alternative. Note that Alternatives 1 through 5 address different aspects of the proposed Project, including oil field development, crude oil transportation, and the natural gas pipeline alignment.

ES.4.1 No Project Alternative

The proposed Project includes the re-establishment of oil production in an existing oil field using a thermal enhanced oil recovery process with the construction and restoration of approximately 72 well pads, construction and restoration of over nine miles of field access roads, and drilling of up to 296 wells. The proposed Project also includes construction of new processing facilities, field systems, utility connections, and the transport of produced oil by truck. Under the No Project Alternative, the proposed Project would not occur and the field would continue to remain in its abandoned state. CEQA requires that the “No Project” Alternative be evaluated along with its impacts as part of the EIR (CEQA Guidelines Section 15126.6(e) (1)). The proposed Project objectives would not be met under the No Project Alternative.

ES.4.2 Alternative 1: Reduced Footprint Alternative (Oil Field Development)

This alternative was developed to reduce ground disturbance and other associated impacts of the Project. Under the Reduced Footprint Alternative, Aera would utilize more horizontal drilling (i.e., angled drills instead of vertical) to reach reservoir areas, which would allow more wells to be drilled per well pad, thereby reducing the overall number of well pads and associated ground disturbance of the Project. Additional test bores would be required by Aera to confirm the upper and lower reservoir depths to ensure the feasibility and proper positioning for horizontal drilling. The results will serve to inform the footprint of the Reduced Footprint Alternative. In addition, the increased drilling angle required to reduce the disturbance footprint is more complicated and costly to drill, operate, and maintain, and therefore more well replacements may be required under the alternative than for the proposed Project. The Reduced Footprint Alternative would meet basic Project objectives.

ES.4.3 Alternative 2: Oak Avoidance Alternative (Oil Field Development)

This alternative was developed to reduce Project impacts to oaks to the greatest extent practical, beyond what was proposed under the Reduced Footprint Alternative (see Section ES.4.2). Under the Oak Avoidance Alternative, Aera would utilize more horizontal drilling (i.e., angled drills instead of vertical) to reach reservoir areas, which would allow more wells to be drilled per well pad, thereby reducing the overall number of well pads and associated oak tree and woodland habitat removal. Additional test bores would be required by Aera to confirm the upper and lower reservoir depths to ensure the feasibility and proper positioning for horizontal drilling. The results will serve to inform the footprint of the Oak Avoidance Alternative.

In addition to utilizing more horizontal drilling, Aera has designed the Oak Avoidance Alternative to minimize road widths and well pad areas, reroute roads, relocate well pads, refine grading plans, and fine tune proposed development areas with a tree-by-tree analysis to reduce impacts to oak trees by 81 percent. Overall the Oak Avoidance Alternative would result in a 55 percent reduction in total disturbed acreage and a 36 percent reduction in cut and fill volumes. However, the increased drilling angle required to reduce the disturbance footprint is more complicated and costly to drill, operate, and maintain, and therefore more well replacements may be required under the alternative than for the proposed Project. The Oak Avoidance Alternative would meet basic proposed Project objectives.

ES.4.4 Alternative 3: Phillips 66 Pipeline Alternative (Crude Oil Transportation)

The Phillips 66 Pipeline Alternative was developed to utilize the local Phillips 66 pipeline facilities to transport Project produced crude oil to a Bay Area refinery; thereby, eliminating the need for and impacts

associated with tanker truck transport of blended produced oil to Aera's Belridge facility. To accomplish this alternative, one of two scenarios would need to occur:

- **Scenario 1:** Under this Alternative, Aera would construct an approximately 4.5-mile pipeline from their Central Processing Facilities to ERG's Cantin Tank Battery. The proposed pipeline would then connect to the approved 2.9 mile ERG Foxen Petroleum Pipeline (FPP), which was evaluated under an adopted CEQA document (Case No. 13EIR-00000-00002 and State Clearinghouse No. 2013061011) and approved by the County Planning Commission on March 11, 2015. Once transported to the ERG Cantin Tank Battery, the crude oil would be piped to the Phillips 66 Sisquoc Pipeline (see Figure 2-28). On February 6, 2018, the Board of Supervisors adopted an ordinance granting a franchise agreement with ERG for construction of the FPP within public road rights-of-way. No specific schedule for FPP construction has been provided; however, ERG accepted the terms and conditions of the franchise agreement by letter dated March 5, 2018. Since work on the pipeline is to commence within four months from the effective date of the franchise, ERG has begun the acquisition of pipeline casing and submitted the first Zoning clearance package in September 2018.
- **Scenario 2:** In the instance that ERG does not construct the FPP, Aera would build a new approximate 7 to 8 mile pipeline to connect their East Cat Canyon facility to the Phillips 66 Sisquoc Pipeline in place of the FPP. For purposes of this Alternative, the pipeline alignment is assumed to be similar to the 4.5-mile connection pipeline under Scenario 1 and the FPP alignment.

The Phillips 66 Sisquoc Pipeline connects to Santa Maria Pump Station which would send the crude to the Phillips 66 Santa Maria Refinery in San Luis Obispo County via the existing Line 300 system. The product would then be pipelined to Phillip 66's Rodeo California refinery in the Bay Area for further refining. For purposes of the Phillips 66 Pipeline Alternative, it is assumed that capacity in the Phillips 66 pipeline system and Santa Maria Refinery will continue to be available throughout the expected Project life.

For purposes of this Alternative, it is assumed that trucking of light and blended crude oil would occur during Phase I and/or when the FPP and/or connection pipeline were non-operational due to unanticipated circumstances during Phase II. For Phase I (approximately 3 to 4 years), an estimated 1,366 barrels per day of light crude oil would be needed (9 tanker truck loads/day) for an estimated production of approximately 4,300 barrels per day of produced crude; thereby, requiring 37 roundtrip truck trips/day (9 LCO and 28 empty from Belridge to East Cat Canyon Oil Field, and 37 blended back to Belridge) when the pipeline is not available. All truck trips would be to/from the Aera Belridge facility (140.4 miles one-way). Construction of the connection pipeline would be completed prior to the commencement of Phase II operations.

For Phase II operations, to meet Phillips 66's and FPP viscosity and sulfur (4%) specifications, approximately 78 one-way tanker truck trips/day of light crude oil would be needed. This alternative would increase daily trips associated with light crude oil under the Proposed Project from 21 to 78, but would reduce total proposed Project truck one-way trips (light and blended crude) from 190 to 153. Under this Alternative, light crude trucks would return to the Aera Belridge Facility empty.

ES.4.5 Alternative 4: Plains Pipeline Alternative (Crude Oil Transportation)

The Plains Pipeline Alternative was developed to utilize regional pipeline facilities to transport Project produced crude oil to Los Angeles Basin and Bay Area refineries; thereby, eliminating the need for and impacts associated with tanker truck transport of blended produced oil to Aera's Belridge facility. To accomplish this alternative, the Plains Pipeline system to Kern County would be utilized. Within Kern County, pump stations at Pentland and Emidio are available to route crude oil in existing pipelines to the Bay Area and Los Angeles, respectively. Alternative 4 assumes that Plains Lines 901 and 903, which were shut down in response to a rupture in August 2017, will be permitted and replaced in the future or that

Plains will address the Pipeline and Hazardous Materials Safety Administration's Corrective Action Orders and will be able to restart the existing Line 901-903 system without additional or new permits. To access the Plains Pipeline system, Aera blended crude would need to connect to Plains' existing Line 901 or proposed replacement pipeline to the east of the Project site. Once the crude oil reaches Plains' Sisquoc Pump Station, crude oil could flow west to the Phillips 66 Pump Station and follow the route identified in Alternative 3, or flow east to Kern County.

Two possible connection routes are available to connect the Aera East Cat Canyon Oil Field to Plains Line 901: (1) An overland route of approximately three miles, and (2) a route of slightly over 6 miles that would lie predominately under existing asphalt paved roads. Both routes would connect to the east side of the Project site near Long Canyon Road. In addition, both would require the Project to add about 1.5 miles of in-field pipeline, as well as additional facilities for transfer, pumping and measurement. For purposes of the Plains Pipeline Alternative, the longer connection route is assumed since it would minimize any new clearing and resultant potential biological, hydrological, and cultural resource impacts (in comparison to the overland route), since the connection would be placed primarily with the roadbed or shoulders of existing paved roadways.

As described for the proposed Project, due to the low API gravity of oil produced from the East Cat Canyon Oil Field, light crude oil (LCO) would be trucked in from Aera's Belridge Facility in Kern County to be used as a diluent (140.4 miles one-way). To meet Plains' viscosity specifications, approximately 75 one-way tanker truck trips/day of light crude oil would be needed. Further, the Plains Basic Sediment and Water specification (1%) is below the estimated Aera specification of 3%. To achieve this specification, additional processing facilities would need to be incorporated into the proposed Aera Central Processing Facility to remove solids from the produced crude; under the proposed Project, solids removal would occur at Aera's Belridge Facility. This alternative would increase daily trips associated with light crude oil from 21 to 75, but would reduce total proposed Project truck one-way trips (light and blended crude) from 190 to 150. Under this Alternative, light crude trucks would return to the Aera Belridge Facility empty. Additional facilities would also be required for solids removal. The Plains Pipeline Alternative would meet the basic proposed Project objectives.

For purposes of this Alternative, it is assumed that trucking of light and blended crude oil would occur during Phase I and when the Plains Pipeline and/or connection pipeline were non-operational due to unanticipated circumstances during Phase II. For Phase I (approximately 3 to 4 years), an estimated 1,366 barrels per day of light crude oil would be needed (9 tanker truck loads/day) for an estimated production of approximately 4,300 barrels per day of produced crude; thereby, requiring 74 one-way truck trips/day (9 LCO, 28 empty, and 37 blended). All truck trips would be to/from the Aera Belridge facility (140.4 miles). Construction of the connection pipeline would be completed prior to the commencement of Phase II operations.

ES.4.6 Alternative 5: Natural Gas Pipeline Reroute Alternative (Natural Gas Pipeline Alignment)

An alternative natural gas pipeline alignment was developed that would avoid the town of Orcutt and associated population centers. Similar to the proposed Project, the alternative would connect into the Divide Station on Graciosa Road, where SoCalGas has available natural gas capacity. The overall length of Natural Gas Pipeline Alternative would be approximately 17.4 miles, 3.4 miles longer than the proposed route.

Although the Natural Gas Pipeline Alternative could have greater potential biological impacts and would be longer than the proposed route, this alternative would traverse much less densely populated lands

than the proposed alignment and avoid sensitive land uses such as schools and churches. By routing the natural gas pipeline farther from population centers and sensitive land uses, the consequences to the public in the event of upset or a pipeline leak would be reduced. The Natural Gas Pipeline Reroute Alternative would meet the basic proposed Project objectives.

ES.5 Environmental Setting (i.e., Baseline) Determination

The proposed Project includes redevelopment of oil and gas facilities and operations and additional new facilities in undeveloped areas. The baseline for the proposed Project is the physical environmental conditions in the vicinity of the project, as they exist at the time the NOP is published (CEQA Guidelines Section 15125); in compliance with CEQA Guidelines, the County distributed the NOP on October 21, 2016. In addition to the natural environment, any existing facilities are considered part of the environmental setting (i.e., baseline) for evaluating the environmental effects of the proposed Project. The Project site currently supports office/warehouse buildings, 178 abandoned oil wells, four producing ERG wells, four non-producing Aera test wells, a system of graded access roads and wells pads, former facility locations, a permitted beneficial reuse site, fresh groundwater wells, firewater and grazing tanks, and cattle grazing.

Land uses surrounding the proposed Project site include oil and gas production; and grazing to the north, south, and west; a winery tasting room to the northeast; and residential development on large agricultural parcels primarily to the north and south-southeast. The western portion of the proposed Project site is located adjacent to the existing ERG Resources, LLC Cat Canyon development site (active field). In addition, Greka produces oil from the adjacent Bell lease.

ES.6 Impacts of the Proposed Project, Alternatives, and Cumulative Development

In the Impact Summary Tables at the end of this Executive Summary and throughout the EIR, impacts of the proposed Project, alternatives, and cumulative effects have been classified using the categories Class I, II, III, and IV as described below.

- ***Class I – Significant unavoidable adverse impacts for which the decisionmaker must adopt a statement of Overriding Considerations:*** These are significant adverse impacts that cannot be effectively avoided or mitigated. No measures could be taken to avoid or reduce these adverse effects to insignificant or negligible levels. Even after application of feasible mitigation measures, the residual impact would be significant.
- ***Class II – Significant environmental impacts that can be feasibly mitigated or avoided for which the decision maker must adopt Findings and recommended mitigation measures:*** These impacts are potentially similar in significance to those of Class I but can be reduced or avoided by the implementation of feasible mitigation measures. After application of feasible mitigation measures, the residual impact would not be significant.
- ***Class III – Adverse impacts found not to be significant for which the decision maker does not have to adopt Findings under CEQA:*** These impacts do not meet or exceed the identified thresholds for significance. Generally, no mitigation measures are required for such impacts.
- ***Class IV – Impacts beneficial to the environment.***

The term “significance” is used in these tables and throughout this EIR to characterize the magnitude of the projected impact. For the purposes of this EIR, a significant impact is a substantial or potentially substantial change to resources in the local project area or the area adjacent to the project in comparison to

the threshold of significance established for the resource or issue area. These thresholds of significance are discussed by issue area in Section 4.0 of the EIR.

For each impact, the applicable project phase has been identified as shown below.

- **Accidental Spill:** Impacts associated with the spill of light or blended crude oil, either on or offsite.
- **Construction:** Impacts associated with construction and/or well drilling activities.
- **Routine Operations:** Impacts due to the operation of new facilities.

The remainder of this section provides a brief discussion of the Class I and II impacts identified for the proposed Project, as well as the alternatives. A detailed listing of the impacts can be found in the Impact Summary Tables. Sections 4.2 through 4.10 provide a comprehensive discussion of possible impacts of the proposed Project and discussions of the impacts associated with cumulative development. Section 5.0, Alternatives Comparison, provides an analysis of the impacts of each identified Alternative, compares the impacts of each Alternative relative to the proposed Project, and identifies the Environmentally Superior Alternative.

ES.5.1 Significant Impacts Associated with the Proposed Project

Three significant (Class I) impacts were identified for the Aera East Cat Canyon Oil Field Redevelopment Plan Project (see Table ES-2). Tables ES-3 and ES-4 present the significant, but mitigable (Class II), and adverse but not significant (Class III) impacts of the proposed Project, respectively. Table ES-5 provides a summary of the cumulative impacts associated with the proposed Project (see Section ES.5.3 below). There are no beneficial impacts associated with the proposed Project.

The significant (Class I) impacts (see Table ES.2) identified for the proposed Project are related to the effects of on- and offsite accidental oil spills to biological and hydrological resources (Impacts BIO-1 and SGW-1, respectively), and the removal of approximately 1,500 oak trees totaling 29.2 acres of oak woodland (Impact BIO-4). Mitigation Measure (MM) BIO-1 requires the development of an Emergency Response Action Plan prior to the start of construction for implementation during spill response. The Plan would define measures for adequate spill cleanup, as well as measures to minimize impacts to biological and hydrological resources not only from a spill, but from the cleanup activities as well. Implementation of MM BIO-16a through BIO-16d would reduce impacts to trees and sensitive species habitat; however, even with implementation of available feasible mitigation identified here, there would be a significant degradation and loss of oak trees and oak woodland habitat with the removal of 1,500 oak trees. In addition, there would be a significant net temporal loss and permanent change in the extent and functional value of oak woodland communities. Therefore, this is a Class I impact.

The significant but mitigable (Class II) impacts (see Table ES-3) identified for the proposed Project are related to construction activities and routine operations, as summarized below.

- **Biological Resources.** Construction and routine operations activities could also result in the temporary and permanent loss of vegetation and potential injury or “take” of special-status species, as well as other direct and/or indirect impacts to biological resources and waters of the U.S./State through construction induced erosion, dust, and spills. Development of new facilities also has the potential to result in a loss or change of the functional value of sensitive vegetation communities, and impair the movement, migration, or dispersal of resident and migratory species. MM BIO-2 through BIO-17 are proposed to reduce these impacts to an insignificant level (see Table ES.3).
- **Air Quality and Climate Change/Greenhouse Gases.** Construction and operation of the proposed Project would result in air emissions related to construction activities, operations of facilities over a 30 to 50

year period, and trucking of light crude oil from and trucking of blended production to Aera's Belridge facility. Vehicle movement during construction activities, as well as operations, would generate particulate dust.

- **Cultural, Tribal Cultural, and Paleontological Resources.** Buried archaeological and/or tribal resources, as well as human remains, could be exposed during construction activities. As presented in Table ES.3, mitigation is required to ensure monitoring of construction activities in potentially sensitive areas, and proper treatment of any identified resources. In the event human remains are discovered, the County Coroner would be contacted.
- **Geology Processes/Geological Hazards.** Unsuitable/expansive soils could cause damage to project structures and/or result in injury or death. Contaminated soils exposed during construction could impact human health and the environment. The proposed natural gas pipeline crosses a known fault. Through proper engineering and construction practices defined by proposed mitigation and regulatory requirements, these impacts would be reduced to less than significant (Class II). In addition, construction of the proposed Project could trigger landslides within the oil field, and construction and routine operations could trigger or accelerate soil erosion. Seismic activity could cause damage to project structures and/or result in injury or death. Soils may be incapable of supporting the proposed Oil Field septic system. County and State building codes would be implemented during facility design and construction; thereby, reducing these possible impacts to an insignificant level (Class III).
- **Risk of Upset/Hazardous Materials/Fire.** The proposed Project could generate risks to public safety by exposing the public to hazards from truck transport of light crude oil (LCO) and blended crude oil product, a potentially significant, but mitigable impact (Class II). Potential impacts to the public due to produced gas releases from the oil field gathering pipelines, and gas treatment plant, and SoCalGas natural gas pipeline are insignificant (Class III). Hazardous materials such as gasoline, diesel, fuel, oil, lubricants, and paint and solvents could be released during construction and routine operations. The proposed Project would introduce additional development and ignition sources within a high fire hazard area with limited firefighting capability. Mitigation measures have been identified to address these possible impacts (see Table ES.3). In addition, County, State, and federal safety and environmental standards would be implemented during design and operations.
- **Noise.** Construction noise from well drilling and operational noise from well workovers could exceed the nighttime 3 dBA (additional) threshold at some sensitive receptors. MM NOISE-1 requires the development of a Construction Noise Control Plan and MM NOISE-2 requires the development of a Maintenance Noise Control Plan, both prior to the start of construction, to be implemented respectively. The Plans would define noise abatement measures, as well as noise monitoring requirements.
- **Surface/Groundwater Resources.** Proposed cyclic steam or steam flooding injected under pressure to enhance oil recovery in oil-bearing formations or injection of produced water/brine could adversely affect groundwater quality if not conducted in accordance with local and State requirements. Disturbance of soil during construction has the potential to reduce surface water quality through the introduction of disturbed sediments into local streams or other water bodies. Spills or disposal of potentially harmful materials used during construction and routine operations could affect surface and groundwater resources. Some Project features are located within areas mapped by the Federal Emergency Management Agency as Zone A floodplains of Cat Canyon Creek and Long Canyon Creek. Excavation and grading for well pads, foundations for new equipment, the natural gas pipeline, and access roads could increase the rate or amount of surface runoff in a manner which could induce or enhance flooding effects. Well development and operation would be conducted in accordance with required mitigation, as well as local and State requirements. Project construction and operation would be conducted in

accordance with required mitigation, and local and State building codes and federal/State water agency permitting requirements would be met.

- **Traffic/Transportation.** The Project would contribute to roadway damage because of the proposed 21 light crude oil truck trips (one-way) and 74 empty tanker trucks coming from the Aera Belridge facility to the Aera East Cat Canyon Oil Field. These 95 trucks would then return to the Aera Belridge facility with blended crude oil. MM TR-1 requires the development of a Vehicle Safety Plan prior to the start of construction to ensure Project-related trips do not pose unnecessary hazards to motorists, bicyclists, or pedestrians. MM TR-2 requires that the facility owner enter into a Roadway Maintenance Agreement with the County regarding pavement or other infrastructure damage caused by the increase in daily haul trucks prior to production activities, and MM TR-3 requires the development and implementation of a Construction Traffic Control Plan for natural gas pipeline construction.

ES.5.2 Significant Impacts Associated with Alternatives

As presented in Section ES.4 (Description of Project Alternatives), Alternatives 1 through 5 address different aspects of the proposed Project, including oil field development and operation, crude oil transportation, and the natural gas pipeline alignment. The relative impacts with respect to the proposed Project are summarized below:

- **Alternative 1: Reduced Footprint Alternative (Oil Field Development):** The Reduced Footprint Alternative would not change the number of wells to be developed (296), the number of steam generators (6), or the peak production volumes (10,000 bpd), so impacts related to well operations, including spills, would not change. However, well development would occur on 26 well pads instead of 72, reducing the temporary and permanent disturbance acreage and related impacts associated with well pad development from 304.7 acres to 163.7 acres. Likewise, total cut and fill volumes would be reduced from 6.6 million (MM) cubic yards to 3.1 MM cubic yards and oak tress removal would be reduced from 1,500 trees to 735 trees. Since the length of wells would increase at some locations, associated air quality/GHG emissions would increase proportionately. There would also be no change in trucking volumes, the natural gas pipeline, or power line.
- **Alternative 2: Oak Tree Avoidance Alternative (Oil Field Development):** The Oak Avoidance Alternative would not change the number of wells to be developed (296), the number of steam generators, or the peak production volumes (10,000 bpd), so impacts related to well operations, including spills, would not change. However, well development would occur on 37 well pads instead of 72, reducing the temporary and permanent disturbance acreage and related impacts associated with well pad development from 304.7 acres to 132.3 acres. Likewise, total cut and fill volumes would be reduced from 6.6 million (MM) cubic yards to 2.3 MM cubic yards and oak tress removal would be reduced from 1,500 trees to 281 trees. Since the length of wells would increase at some locations, associated air quality/GHG emissions would increase proportionately. There would also be no change in trucking volumes, the natural gas pipeline, or power line.
- **Alternative 3: Phillips 66 Pipeline Alternative (Crude Oil Transportation):** Under the Phillips 66 Pipeline Alternative, Aera would construct an approximately 4.5-mile pipeline from their Central Processing Facilities to ERG's Cantin Tank Battery, where it would connect to the approved 2.9 mile ERG Foxen Petroleum Pipeline (FPP). The Phillips 66 Pipeline Alternative pipeline alignment would increase temporary impacts to native and nonnative vegetation compared with the proposed Project, potentially including listed and special-status species habitats, and several waterway crossings (Cat Canyon Creek and up to three additional locations). Relative to the proposed Project, construction impacts associated with air quality/GHG, soil disturbance, noise, and construction vehicles would increase as well. During

Phase II operations, the reduced amount of truck traffic (total truck trips reduced from 190 to 156) would decrease the Phillips 66 Pipeline Alternative's potential to 'take' listed and other special-status species (such as CTS) as roadkill, and reduce emissions associated with trucking compared with the proposed Project. Phase 1 trucking operations would be the same as the proposed Project.

- **Alternative 4: Plains Pipeline Alternative (Crude Oil Transportation):** Under the Plains Pipeline Alternative, Aera would construct an approximately 6-mile pipeline from their Central Processing Facilities to Plains Pipeline, in addition to 1.5-miles of in-field pipelines. The Plains Pipeline Alternative pipeline alignment would increase temporary impacts to native and nonnative vegetation compared with the proposed Project, potentially including listed and special-status species habitats, and several waterway crossings (Long Canyon Creek, Olivera Canyon Creek, Asphaltum Creek, and several ephemeral drainages). Relative to the proposed Project, construction impacts associated with air quality/GHG, soil disturbance, noise, and construction vehicles would increase as well. During Phase II operations, the reduced amount of truck traffic (total truck trips reduced from 190 to 150) would decrease the Plains Pipeline Alternative's potential to take listed and other special-status species (such as CTS) as roadkill, and emissions associated with trucking compared with the proposed Project. Phase 1 trucking operations would be the same as the proposed Project. The Plains Pipeline Alternative would present additional emissions due to the operation of the sediment processing facility and trucking associated with solids disposal.
- **Alternative 5: Natural Gas Pipeline Reroute Alternative (Natural Gas Pipeline Alignment):** Impacts would be greater during construction because the Natural Gas Pipeline Reroute Alternative alignment would cross open space in several locations, resulting in greater impacts to vegetation and wildlife habitat, as well as riparian habitat associated with several waterway crossings (San Antonio Creek and its tributaries, and ephemeral pools and swales), compared with the proposed Project, which would be entirely within road shoulders. The Natural Gas Pipeline Reroute Alternative alignment is also within dispersal distance from several ponds that could support CTS and CRLF breeding, although it does not cross any designated critical habitat for listed species. Relative to the proposed Project, construction impacts associated with air quality/GHG, soil disturbance, noise, and construction vehicles would increase as well given that the Natural Gas Pipeline Reroute Alternative is 3.4 miles longer than the proposed Project natural gas pipeline alignment. Impacts associated with the Natural Gas Pipeline Reroute Alternative during operations would be less given that the Alternative 5 alignment avoids major population centers and sensitive land uses, so therefore, the consequences to the public in the event of upset or a pipeline leak would be reduced.

As discussed in Section 5.0, none of the significance levels (Class I and II) of the impacts identified for the proposed Project would be reduced under these Alternatives and all mitigation would apply, as well as local and State regulatory requirements.

ES.5.3 Significant Impacts Associated with Cumulative Development

Section 15130(a)(1) of the CEQA Guidelines (14 CCR, Div. 6, Ch. 3) states that a "cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts." CEQA requires a discussion of the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable" (14 CCR §15130(a)). Section 3.0 of this EIR provides a list of past, present, and probable future oil and gas, and other major projects within northern Santa Barbara County. As presented in Section 3.0, there are two proposed oil and gas development projects that are in the vicinity of the proposed Aera East Cat Canyon Oil Field Redevelopment Plan Project and which are currently under review by Santa Barbara County. These are:

- **ERG West Cat Canyon Revitalization Plan Project.** The ERG Project is located directly west of the proposed Project. The proposed ERG Project includes 233 oil, injection and water wells; 4 steam generators; and processing facilities. As part of the ERG Project, SoCalGas would construct a 3.5-mile long, 8-inch diameter natural gas pipeline.
- **PetroRock UCCB Project.** The PetroRock Project is located to the north-west of the proposed Project, further from the communities of Sisquoc and Garey. The proposed PetroRock Project includes 231 oil, injection and water wells; 5 steam generators; processing facilities, and a 2.7 mile SoCalGas natural gas line which would cross Foxen Canyon Road. The PetroRock Project proposes the use of the Foxen Petroleum Pipeline once constructed.

Construction of the Foxen Petroleum Pipeline (see Project #4 in Section 3.0, Cumulative, Table 3-2) would also introduce temporary construction impacts to the immediate project area, especially local roadways (primarily Foxen Canyon Road). (These impacts were previously assessed in the FPP EIR, County #13EIR-00000-00002; SCH #2013061011.) The Plains Pipeline Replacement and ExxonMobil Phased Restart Interim Trucking projects (see Projects #16 and #17 in Section 3.0, Cumulative, Table 3-2) would also introduce oil tanker truck trips and construction impacts, respectively, to the region. In addition, there are several smaller oil and gas development projects proposed near the community of Garey.

The location of these projects is mostly rural in nature, aside from existing oil and gas infrastructure/operations, with scattered, limited residential surrounding the project boundaries, as well as the community of Sisquoc to the north. An assessment of the proposed Project's contribution to cumulative impacts for the general public needs to account for these neighboring projects, primarily ERG West Cat Canyon Revitalization Plan Project and the PetroRock UCCB Project, to determine cumulative impact significance. Table ES-5 of this Executive Summary provides a summary of the cumulative impacts associated with the proposed Projects and other proposed development in the region (see Sections 4.2 through 4.10 of this EIR for more detailed discussions). In summary, cumulative oil development within Cat Canyon Oil Field and corresponding oil transport would result in a significant and unavoidable impact associated with an accidental oil or produced water spill that could have substantial and long-term effects on the biological and hydrological resources affected by a spill(s). Likewise, cumulative well development could have a significant cumulative contribution to temporary noise increases over ambient conditions at some of the sensitive receptors, especially those located near adjacent project property boundaries. Other cumulative impacts identified, including the proposed Project's contribution, could be reduced to insignificant levels through implementation of recommended mitigation, as well as County, State, and federal regulatory requirements.

ES.6 Environmentally Superior Alternative

Section 5.0, Alternatives Comparison, provides an analysis of the impacts of each identified Alternative, compares the impacts of each Alternative to the proposed Project, and identifies the Environmentally Superior Alternative. Tables 5-6 and 5-7 provide a relative comparison of the impacts of each alternative to the proposed Project by impact. As previously noted, the Reduced Footprint Alternative and the Oak Avoidance Alternative provide alternative development options for the proposed Project oil field, while the Phillips 66 Pipeline Alternative and Plains Pipeline Alternative provide alternative crude oil pipeline transportation options for the proposed Project trucking. Lastly, the Natural Gas Pipeline Reroute Alternative provides an alternative alignment for the proposed Project natural gas pipeline. As summarized in Table 5-7 and discussed in Section 5.4, because of its reduced temporary and permanent construction disturbance, including reduced loss of oak trees and vegetation removal, the Oak Tree Avoidance Alternative, is preferred over the proposed Project and the Reduced Footprint Alternative. Note that opera-

tional impacts for the Oak Avoidance Alternative would be same as the proposed Project since the same number of wells would be developed. Regarding crude oil transportation, the Phillips 66 Pipeline Alternative and Plains Pipeline Alternative are preferred to the proposed Project. As presented in Table 5-7, depending on the impact, the overall benefits offered by the Phillips 66 and Plains Alternatives are comparable. For the natural gas pipeline alignment, the proposed Project is preferred with respect to construction; however, the Natural Gas Pipeline Reroute Alternative is preferred for operations since its alignment avoids population centers that could be affected under risk of upset circumstances.

As discussed in Section 5.1, under CEQA, 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 longer-term impacts (e.g., permanent loss of habitat or as a result of lifetime Project operations). Impacts that are short-term (e.g., construction-related impacts) or those that are easily mitigable to less than significant levels are generally considered to be less important.

Based on the foregoing, a combination of ***the Oak Avoidance Alternative for the proposed oil field development and operation, Phillips 66 or Plains Pipeline Alternatives for crude oil transport, and the Natural Gas Pipeline Reroute Alternative are considered to be the Environmentally Superior Alternative.***

Table ES-2. Class I Impacts of the Proposed Project – Impacts that May Not Be Fully Mitigated to Less than Significant Levels

The decision maker must adopt a statement of Overriding Consideration and Findings [State CEQA Guidelines §15091 and §15093; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Mitigation Measures	
BIOLOGICAL RESOURCES (Section 4.2)				
BIO-1	Operations, Accidental Spill, On or Offsite <ul style="list-style-type: none"> ▪ Oil Field/Transportation 	A rupture or leak from oil production facilities, pipelines, or transport trucks has the potential to result in a substantial adverse effect on native species and habitats, special-status species and their habitats, and sensitive vegetation communities.	MM BIO-1	Prepare and implement Emergency Response Action Plan
BIO-4	Construction <ul style="list-style-type: none"> ▪ Oil Field 	Proposed Project construction has the potential to result in a net loss or permanent change in the extent or functional value of sensitive vegetation communities and loss of individual oak trees.	MM BIO-1	Prepare and implement Emergency Response Action Plan
			MM BIO-2	Implement General Biological Resources Protection Measures
			MM BIO-3	Implement Best Management Practices (BMPs) to minimize impacts to riparian and wetland areas.
			MM BIO-4	Environmental Training Program
			MM BIO-5	Prepare and implement Weed Control Plan.
			MM BIO-6a	Record Conservation Easement
			MM BIO-6b	Prepare and implement Conservation Habitat Management & Monitoring Plan
			MM BIO-7	Prepare and implement Habitat Restoration Plan.
			MM BIO-8	Onsite Environmental Quality Assurance Program (EQAP) Monitor
			MM AQ-1a	Implement dust control measures during construction and routine operations.
			MM SGW-1	Implement Erosion Control Plan.
			MM BIO-16a	Prepare and implement Oak Tree Protection Plan
			MM BIO-16b	Prepare and implement Oak Tree Replacement Plan
			MM BIO-16c	Onsite Arborist/Biologist
			MM BIO-16d	Implement abatement measures for invasive plant pathogens
SURFACE AND GROUNDWATER RESOURCES (Section 4.9)				
SGW-1	Operations, Accidental Spill, On or Offsite <ul style="list-style-type: none"> ▪ Oil Field/Transportation 	A rupture or leak from oil production facilities, pipelines, or transport trucks has the potential to result in a substantial adverse effect on surface or groundwater quality.	MM BIO-1	Prepare and implement Emergency Response Action Plan

Table ES-3. Class II Impacts of the Proposed Project – Impacts that Can Be Mitigated to Less than Significant Levels

The decision maker must adopt Findings and mitigation measures [State CEQA Guidelines §15091; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Mitigation Measures	
AIR QUALITY (Section 4.2)				
AQ-1	Construction <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Construction emissions could result in a considerable net increase of pollutants that would violate air quality standards or contribute substantially to an existing or projected air quality violation.	MM AQ-1a	Implement dust control measures during construction and operations
			MM AQ-1b	Performance Specifications for Construction Fleet Engines
AQ-2	Routine Operations <ul style="list-style-type: none"> ▪ Oil Field 	Operational emissions could result in a considerable net increase of pollutants that would violate air quality standards or contribute substantially to an existing or projected air quality violation	MM AQ-2a	Performance Specifications for O&M Fleet Engines
			MM AQ-2b	Performance Specifications for CNG Tankers
			MM AQ-2c	Emission Reduction Credits for Emissions Increases
AQ-5	Routine Operations <ul style="list-style-type: none"> ▪ Oil Field 	Project activities could conflict with or obstruct implementation of the applicable air quality management plans.	MM AQ-2c	Emission Reduction Credits for Emissions Increases
BIOLOGICAL RESOURCES (Section 4.3)				
BIO-2	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Project construction and routine operations have the potential for degradation and loss of habitat for listed and other special-status species.	MM BIO-1	Prepare and implement Emergency Response Action Plan
			MM BIO-2	Implement General Biological Resources Protection Measures
			MM BIO-3	Implement BMPs to minimize impacts to riparian and wetland areas.
			MM BIO-4	Environmental Training Program
			MM BIO-5	Prepare and implement Weed Control Plan.
			MM BIO-6a	Record Conservation Easement
			MM BIO-6b	Prepare and implement Conservation Habitat Management & Monitoring Plan
			MM BIO-7	Prepare and implement Habitat Restoration Plan
			MM BIO-8	Onsite EQAP Monitor
			MM AQ-1a	Implement dust control measures during construction and routine operations.
MM SGW-1	Implement Erosion Control Plan.			

Table ES-3. Class II Impacts of the Proposed Project – Impacts that Can Be Mitigated to Less than Significant Levels

The decision maker must adopt Findings and mitigation measures [State CEQA Guidelines §15091; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Mitigation Measures	
BIO-3	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Project construction and routine operations have the potential to injure or “take” listed and other special-status species.	MM BIO-1	Prepare and implement Emergency Response Action Plan
			MM BIO-2	Implement General Biological Resources Protection Measures
			MM BIO-3	Implement BMPs to minimize impacts to riparian and wetland areas.
			MM BIO-4	Environmental Training Program
			MM BIO-5	Prepare and implement Weed Control Plan.
			MM BIO-7	Prepare and implement Habitat Restoration Plan.
			MM BIO-8	Onsite EQAP Monitor
			MM BIO-9	Conduct biological construction monitoring.
			MM BIO-10	Conduct rare plants surveys and implement impact mitigation.
			MM BIO-11	Conduct pre-construction surveys and implement avoidance measures for special-status reptiles and amphibians, including CTS and CRLF.
			MM BIO-12	Conduct pre-construction surveys and implement avoidance measures for monarch butterflies.
			MM BIO-13	Conduct pre-construction surveys and implement impact avoidance measures for migratory and nesting birds.
			MM BIO-14	Conduct maternity colony or hibernaculum surveys for sensitive bats and implement avoidance measures.
			MM BIO-15	Conduct focused surveys and implement avoidance measures for American badger and Bryant’s San Diego woodrat.
			MM AQ-1a	Implement dust control measures during construction and routine operations.
MM SGW-1	Implement Erosion Control Plan.			

Table ES-3. Class II Impacts of the Proposed Project – Impacts that Can Be Mitigated to Less than Significant Levels

The decision maker must adopt Findings and mitigation measures [State CEQA Guidelines §15091; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Mitigation Measures	
BIO-4	Construction <ul style="list-style-type: none"> ▪ Power Line ▪ Natural Gas Pipeline 	Proposed Project construction has the potential to result in a net loss or permanent change in the extent or functional value of sensitive vegetation communities and loss of individual oak trees.	MM BIO-1	Prepare and implement Emergency Response Action Plan
			MM BIO-2	Implement General Biological Resources Protection Measures
			MM BIO-3	Implement BMPs to minimize impacts to riparian and wetland areas.
			MM BIO-4	Environmental Training Program
			MM BIO-5	Prepare and implement Weed Control Plan.
			MM BIO-6a	Record Conservation Easement
			MM BIO-6b	Prepare and implement Conservation Habitat Management & Monitoring Plan
			MM BIO-7	Prepare and implement Habitat Restoration Plan
			MM BIO-8	Onsite EQAP Monitor
			MM AQ-1a	Implement dust control measures during construction.
			MM SGW-1	Implement Erosion Control Plan.
			MM BIO-16a	Prepare and implement Oak Tree Protection Plan
			MM BIO-16b	Prepare and implement Oak Tree Replacement Plan
			MM BIO-16c	Onsite Arborist/Biologist
MM BIO-16d	Implement abatement measures for invasive plant pathogens			
BIO-5	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Construction and routine operations have the potential to adversely affect waters of the U.S. and waters of the state.	MM BIO-1	Prepare and implement Emergency Response Action Plan
			MM BIO-2	Implement General Biological Resources Protection Measures
			MM BIO-3	Implement BMPs to minimize impacts to riparian and wetland areas.
			MM BIO-4	Environmental Training Program
			MM BIO-5	Prepare and implement Weed Control Plan.
			MM BIO-7	Prepare and implement Habitat Restoration Plan
			MM BIO-8	Onsite EQAP Monitor
			MM AQ-1a	Implement dust control measures during construction and operations.
			MM SGW-1	Implement Erosion Control Plan.

Table ES-3. Class II Impacts of the Proposed Project – Impacts that Can Be Mitigated to Less than Significant Levels

The decision maker must adopt Findings and mitigation measures [State CEQA Guidelines §15091; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Mitigation Measures	
BIO-6	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Construction and routine operations have the potential to impair movement, migration, or dispersal of resident and migratory fish and wildlife species.	MM BIO-1	Prepare and implement Emergency Response Action Plan
			MM BIO-2	Implement General Biological Resources Protection Measures
			MM BIO-3	Implement BMPs to minimize impacts to riparian and wetland areas.
			MM BIO-4	Environmental Training Program
			MM BIO-6a	Record Conservation Easement
			MM BIO-6b	Prepare and implement Conservation Habitat Management & Monitoring Plan
			MM BIO-7	Prepare and implement Habitat Restoration Plan
			MM BIO-8	Onsite EQAP Monitor
			MM BIO-16a	Prepare and implement Oak Tree Protection Plan
			MM BIO-16b	Prepare and implement Oak Tree Replacement Plan
			MM BIO-16c	Onsite Arborist/Biologist
			MM BIO-16d	Implement abatement measures for invasive plant pathogens
			BIO-7	Construction <ul style="list-style-type: none"> ▪ Natural Gas Pipeline
CLIMATE CHANGE / GREENHOUSE GAS EMISSIONS (Section 4.4)				
GHG-1	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Project activities could generate greenhouse gas emissions that would contribute to a significant impact on the environment.	MM GHG-1	Reduce GHG emissions or surrender offset credits.

Table ES-3. Class II Impacts of the Proposed Project – Impacts that Can Be Mitigated to Less than Significant Levels

The decision maker must adopt Findings and mitigation measures [State CEQA Guidelines §15091; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Mitigation Measures	
CULTURAL, TRIBAL CULTURAL, AND PALEONTOLOGICAL RESOURCES (Section 4.5)				
CULT-1	Construction <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	The proposed project may cause a substantial adverse change in the significance of a historical resource, unique archaeological resource, or tribal cultural resource.	MM CULT-1	Prepare and implement Work Environmental Awareness Program
			MM CULT-2a	Use Cultural and Tribal Resource Monitor during construction
			MM CULT-2b	Prepare and implement Cultural Resources Monitoring Plan
			MM CULT-2c	Prepare and implement Archaeological Sensitivity Area Monitoring Plan
			MM CULT-3	Stop or redirect work immediately in the event archaeological remains are encountered
			MM CULT-4	If previously unidentified historical resources or unique archaeological resources are discovered during implementation of the proposed Project, all work within 20-feet (6-meters) of the discovery shall be halted. The Owner/Applicant shall retain a P&D-approved cultural resources specialist to evaluate and treat the discovery.
			MM CULT-5	If unanticipated tribal cultural resources are encountered during construction, work must cease within 20-feet (6-meters) of the discovery and P&D staff and local tribal representatives shall be notified by phone and in writing.
MM CULT-10	Install staked flagging at 50-ft. radius around the resource boundaries of previously recorded resources and avoid during construction. (Power line and natural gas pipeline only)			
CULT-2	Construction <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	The proposed Project could damage human remains during ground disturbing activities.	MM CULT-6	If human remains are found, all ground disturbing activities shall halt within 165 feet (50-meters) of the discovery. The Owner/Applicant shall contact the Santa Barbara County Coroner within 24-hours of the discovery.
CULT-3	Construction <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	The proposed project could cause direct or indirect destruction of unique paleontological resource.	MM CULT-7a	Use Paleontological Resource Monitor during construction
			MM CULT-7b	Prepare and implement Paleontological Resources Monitoring Plan
			MM CULT-8	Stop or redirect work immediately in the event paleontological remains are encountered
			MM CULT-9	If unanticipated paleontological resources are encountered during construction, work must cease within 20-feet (6-meters) of the discovery and P&D staff shall be notified by phone and in writing.

Table ES-3. Class II Impacts of the Proposed Project – Impacts that Can Be Mitigated to Less than Significant Levels

The decision maker must adopt Findings and mitigation measures [State CEQA Guidelines §15091; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Mitigation Measures
GEOLOGY and GEOLOGIC HAZARDS (Section 4.6)			
GEO-4	Construction & Routine Operations ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline	Expose people or structures to potential risk of loss or injury where expansive or other unsuitable soils are present.	MM GEO-1 Submit soils engineering study addressing structure sites and access roads to determine structural design criteria.
GEO-6	Construction ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline	Encountering contaminated soils during construction.	MM GEO-2 During grading or excavation work, if contamination indicators are observed during construction, the contractor shall implement appropriate measures to protect human health and the environment.
GEO-7	Operations ▪ Natural Gas Pipeline	Surface fault rupture could cause damage to the natural gas pipeline or result in injury or death to people.	MM GEO-3 Perform a fault evaluation study to confirm the location of the mapped trace of the potentially active Casmalia fault across the natural gas pipeline route.
HAZARDOUS MATERIALS / RISK OF UPSET (Section 4.7)			
RISK-2	Routine Operations ▪ Oil truck transportation	The proposed Project could generate risks to public safety by exposing the public to hazards from truck transport of light crude oil (LCO) and blended crude oil product.	MM RISK-4 Prepare and implement Truck Hazard Mitigation Plan that addresses the various aspects of truck operation safety.
HAZ-1	Construction, Equipment ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline	Hazardous materials released during construction.	MM RISK-3 Prepare and implement Spill Prevention Control and Countermeasures Plan to include features and procedures for Project facilities to prevent crude oil or other oil product discharges from occurring.
HAZ-2	Routine Operations ▪ Oil Field ▪ Power Line	Release of hazardous materials during operations and maintenance.	MM HAZ-1 Prepare and implement a Corrosion Control and Inspection Program.
			MM RISK-2 Prepare and implement Oil Spill Contingency Plans that includes best management practices, handling, training and clean up procedures for hazardous materials.
			MM RISK-3 Prepare and implement Spill Prevention Control and Countermeasures Plan to include features and procedures for Project facilities to prevent crude oil or other oil product discharges from occurring.
			MM RISK-4 Prepare and implement Truck Hazard Mitigation Plan that addresses the various aspects of truck operation safety.
Regulatory. Adherence to California Department of Conservation Division of Oil, Gas and Geothermal Resources regulations and oversight.			

Table ES-3. Class II Impacts of the Proposed Project – Impacts that Can Be Mitigated to Less than Significant Levels

The decision maker must adopt Findings and mitigation measures [State CEQA Guidelines §15091; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Mitigation Measures	
FIRE-1	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Introduction of development into an existing high fire hazard area.	MM FIRE-1	A Fire Protection Master Plan shall be developed and implemented for the Project site, including the NGL pipeline.
FIRE-2	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Introduction of development into an area without adequate water pressure, fire hydrants, or adequate access for firefighting.	MM FIRE-1	A Fire Protection Master Plan shall be developed and implemented for the Project site, including the NGL pipeline.
NOISE (Section 4.8)				
NOISE-1	Construction <ul style="list-style-type: none"> ▪ Oil Field well drilling ▪ Power Line ▪ Natural Gas Pipeline 	Construction noise	MM NOISE-1	Prepare and implement a Construction Noise Control Plan.
NOISE-2	Routine Operations <ul style="list-style-type: none"> ▪ Oil Field well workovers 	Operational noise	MM NOISE-2	Prepare and implement a Maintenance Noise Control Plan.
SURFACE and GROUNDWATER RESOURCES (Section 4.9)				
SGW-2	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Project construction and routine operations have the potential to violate water quality standards or waste discharge requirements, or otherwise degrade water quality.	MM SGW-1	Prepare and implement Erosion and Sediment Control Plan.
			MM SGW-2	Prepare and implement Flood Protection Plan.
			MM BIO-1	Prepare and implement Emergency Response Action Plan
SGW-3	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Place within a watercourse or flood hazard area structures which could impede or redirect flood flows, or otherwise alter the existing drainage pattern of the site or area, including through land disturbance or the alteration of the course of a stream or river, in a manner which would result in erosion, siltation, or mudflow.	MM SGW-1	Prepare and implement Erosion and Sediment Control Plan.

Table ES-3. Class II Impacts of the Proposed Project – Impacts that Can Be Mitigated to Less than Significant Levels

The decision maker must adopt Findings and mitigation measures [State CEQA Guidelines §15091; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Mitigation Measures	
SGW-4	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, create or contribute to runoff water which would exceed the capacity of existing or planned stormwater drainage systems, divert or obstruct flow in a manner that would induce or exacerbate flooding, or otherwise contribute to flood-related damage, on or off-site.	MM SGW-1	Prepare and implement Erosion and Sediment Control Plan.
			MM SGW-2	Prepare and implement Flood Protection Plan.
SGW-5	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line (construction) ▪ Natural Gas Pipeline (construction) 	Cyclic steam or steam flooding injected under pressure to enhance oil recovery in oil-bearing formations or injection of produced water/brine could adversely affect groundwater quality.	MM SGW-3a	Conduct pressure testing of well casing and cement seals as outlined in DOGGR requirements.
			MM SGW-3b	Monitor the well casing, tubing, and annular space for pressure changes during injection operations.
			MM SGW-4	Prepare and implement an Area Specific Groundwater Monitoring Plan as required by DOGGR.
			MM SGW-5	Conduct a records search and surface geophysical surveys or other methods to locate abandoned wells and verify seal integrity. If necessary, additional well abandonment to install cement seals in compliance with DOGGR regulations and across all protected groundwater zones shall be implemented.

TRAFFIC and TRANSPORTATION (Section 4.10)

TR-1	Construction <ul style="list-style-type: none"> ▪ Natural Gas Pipeline 	Construction trips could increase the volume to capacity (V/C) ratio for relevant roadway segments.	MM TR-3	Prepare and implement Construction Traffic Control Plan
TR-3	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Project-related heavy truck trips could impose safety hazards.	MM TR-1	Prepare and implement Vehicle Safety Plan.
TR-4	Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line 	Project-related heavy truck trips could degrade public roadway conditions.	MM TR-2	Prior to production activities, the Project Owner/Operator shall enter into a Roadway Maintenance Agreement with Santa Barbara County regarding its fair share cost sharing for maintenance and repair of pavement or other infrastructure damage.

Table ES-4. Class III Impacts of the Proposed Project – Impacts that are Adverse but Insignificant

The decision maker does not have to adopt findings for Class III impacts [State CEQA Guidelines §15____; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Comments
AIR QUALITY (Section 4.2)			
AQ-2	Routine Operations <ul style="list-style-type: none"> ▪ Power Line ▪ Natural Gas Pipeline 	Operational emissions could result in a considerable net increase of pollutants that would violate air quality standards or contribute substantially to an existing or projected air quality violation	NOTE: Proposed power line and natural gas pipeline would be owned and operated by PG&E and SoCal Gas, respectively.
AQ-3	Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Project activities could create objectionable odors affecting a substantial number of people.	Regulatory. APCD Rule 310 and Rule 359 requirements regarding limiting the release of odorous sulfur-containing compounds and raw field gas, respectively, would apply.
AQ-4	Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Project activities could expose sensitive receptors to substantial pollutant concentrations exceeding adopted health risk thresholds for air toxics	NOTE: Proposed facility changes and operational procedures to reduce project emissions apply.
CLIMATE CHANGE / GREENHOUSE GAS EMISSIONS (Section 4.4)			
GHG-2	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Project emissions could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	Regulatory. Compliance with State Cap-and-Trade Program and Mandatory Reporting Rule.
GEOLOGY and GEOLOGIC HAZARDS (Section 4.6)			
GEO-1	Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Seismically induced ground shaking, Project induced ground shaking, or slope failure could cause damage to project structures or result in injury or death to people.	Regulatory. The proposed oil development infrastructure shall be designed and constructed to withstand anticipated horizontal and vertical ground acceleration in the Project area, based on the California Building Code.
GEO-2	Construction <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Slope Failures, such as landslides, could be triggered by project construction.	Regulatory. The Project grading plan shall conform to the requirements set forth in Chapter 70 of the California Building Code and the County Grading and Building Codes.
GEO-3	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Construction and routine operations of the Project could trigger or accelerate soil erosion.	Regulatory. Storm Water Pollution Prevention Plan required to address erosion, sediment and pollution control during all phases of development of the site until all disturbed areas are permanently stabilized. Additionally, Project would need to conform to Santa Barbara County grading permit requirements.

Table ES-4. Class III Impacts of the Proposed Project – Impacts that are Adverse but Insignificant

The decision maker does not have to adopt findings for Class III impacts [State CEQA Guidelines §15____; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Comments
GEO-5	Construction & Routine Operations ▪ Oil Field	Soils incapable of supporting septic system.	Regulatory. Permit is required by Santa Barbara County Environmental Health Services (EHS) for the construction of new septic system as well as the repair, modification or abandonment of existing systems.
HAZARDOUS MATERIALS / RISK OF UPSET (Section 4.7)			
RISK-1	Construction & Routine Operations ▪ Oil Field	The proposed Project could generate risks to public safety by exposing the public to produced gas releases from the oil field gathering pipelines, and gas treatment plant.	NOTE: An Emergency Response Plan, Spill Prevention Control and Countermeasures Plan, and Oil Spill Contingency Plan shall be prepared to meet regulatory requirements, as well as incorporate assumptions used in the proposed Project QRAs regarding Project features and procedures. In addition, a Fire Protection Master Plan shall be developed and implemented for the Project oil field site.
RISK-3	Routine Operations ▪ Natural Gas Pipeline	The proposed Project could generate risks to public safety by exposing the public to hazards from releases of natural gas from the SoCal Gas natural gas pipeline	Regulatory: The natural gas pipeline will be designed, constructed, operated, maintained, and inspected in accordance with all applicable regulatory requirements.
HAZ-1	Construction ▪ Oil Field well blowout	Hazardous materials released during construction.	Regulatory. Use of blow-out prevention equipment.
FIRE-3	Construction & Routine Operations ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline	Introduction of development that will hamper fire prevention techniques such as controlled burns or backfiring in high fire hazard areas	NOTE: Santa Barbara Fire Department Development Standards and the Fire Protection Master Plan shall be implemented for the Project site, including the power line and natural gas pipeline.
FIRE-4	Construction & Routine Operations ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline	Development of structures beyond safe Fire Department response time.	NOTE: Santa Barbara Fire Department Development Standards and the Fire Protection Master Plan shall be implemented for the Project site, including the power line and natural gas pipeline.
NOISE (Section 4.8)			
NOISE-1	Construction ▪ Oil Field	General oil field construction noise, except well drilling.	
NOISE-2	Routine Operations ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline	Operational noise (general oil field O&M except well workovers, power line & natural gas pipeline).	

Table ES-4. Class III Impacts of the Proposed Project – Impacts that are Adverse but Insignificant

The decision maker does not have to adopt findings for Class III impacts [State CEQA Guidelines §15____; County CEQA Guidelines, Article VII (H)]

Impact #	Project Phase	Description of Impact	Comments
NOISE-3	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Vibrations	
SURFACE and GROUNDWATER RESOURCES (Section 4.9)			
SGW-6	Construction & Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Potential for the Project's fresh water usage to exceed thresholds of significance for the Santa Maria and San Antonio Groundwater Basins.	
TRAFFIC and TRANSPORTATION (Section 4.10)			
TR-1	Construction <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line 	Construction trips could increase the volume to capacity (V/C) ratio for relevant roadway segments.	
TR-2	Routine Operations <ul style="list-style-type: none"> ▪ Oil Field ▪ Power Line ▪ Natural Gas Pipeline 	Operational trips could increase the volume to capacity (V/C) ratio for relevant roadway segments and intersections.	

Table ES-5. Cumulative Impacts of the Proposed Project

AIR QUALITY (Section 4.2)

Construction. Cumulatively adverse air quality impacts would occur if the projects identified above were constructed concurrently with the Project and within 0.5 mile of a sensitive receptor. The potential for cumulative construction emissions to cause excessive air pollutant concentrations would be greatest for any sensitive receptors located proximate to two or more work sites that are active at the same time. The potential for construction activities to overlap cannot be predicted. However, each individual project would be expected to implement feasible emissions control measures that would be required through County and/or APCD review.

Routine Operations. A significant cumulative air quality impact could occur if any project's total emissions of PM10 or ozone precursors (NOx or ROC) exceed the County thresholds because emissions over these levels could contribute substantially to existing nonattainment conditions. Consistency with the air quality management plan and whether a project's emissions are accounted for in the air quality management plan's emissions growth assumptions are factors in assessing the cumulative air quality impact. The proposed Project and other oil and gas projects in the cumulative scenario could cause emissions from the oil and gas sector to grow more than anticipated in the air quality management plan, which anticipates no growth in oil and gas production. Mitigation identified for the proposed Project's potential to conflict with the air quality management plan (Impact AQ-5) would reduce the Project's contribution to the cumulative impact to a less than significant level.

BIOLOGICAL RESOURCES (Section 4.3)

The proposed Project could result in adverse effects on biological resources that are cumulatively considerable when evaluated in conjunction with other past or present projects in the vicinity. Most of the cumulative projects involve oil field expansions (ERG and PetroRock) and related projects (i.e., the Foxen Petroleum Pipeline [FPP]). Oil field expansions which include the drilling of additional wells could result in an increased threat of spills, and disturbances to sensitive migratory corridors and upland habitat for sensitive amphibian species. An increase in operating wells would likely include additional well pad and pipeline construction within leases, some of which could occur in locations where sensitive biological resources have been recorded. It is likely that such projects would add to the cumulative effect of disturbances to sensitive habitats that potentially support special-status plant or wildlife species, or constrain the movement of wildlife through the local area. Although the proposed Project would contribute to adverse cumulative effects to wildlife movement in conjunction with other nearby projects, these impacts are not expected to lead to the loss of an entire species or an entire population of any sensitive species from the area.

The proposed Project would not directly impact breeding habitat for CTS and CRLF, and therefore would not contribute to cumulative impacts to aquatic breeding habitat regionally. However, the Project would directly impact upland habitats that could support CTS during dispersal. The cumulative oil field projects and the FPP would also impact potential upland dispersal habitat. Although the FPP's impacts would be temporary and the pipeline route would be restored following construction, impacts to dispersing CTS could occur during the construction phase, which could overlap with the proposed Project and result in cumulative impacts to dispersing CTS and their upland habitat.

Mitigation recommended for the proposed Project would minimize the Project's incremental contribution to cumulative effects on biological resources. However, the potential impacts from an oil spill, either from the proposed Project itself or the FPP, if it were carrying oil from the proposed Project, would be substantial and are not mitigable to less than significant. If a spill were to occur, the Project's contribution to adverse cumulative impacts to sensitive plants and wildlife, native habitats, and jurisdictional waters would be cumulatively considerable.

Table ES-5. Cumulative Impacts of the Proposed Project**CLIMATE CHANGE/GREENHOUSE GAS (GHG) EMISSIONS (Section 4.4)**

As discussed in Sections 4.4.3 and 4.4.4, the geographic extent and context of climate change is global, and the impacts caused by GHG emissions are, by their nature, cumulative. Emissions of carbon dioxide (CO₂) and methane (CH₄) are long-lived and contribute to the total amount of GHG in the atmosphere, and the effects of GHG emissions are not limited to the localities where they are generated.

As presented in Table 4.4-5, Section 4.4.5, GHG emissions forecasted to occur as a result of cumulative oil and gas projects in the immediate area of Aera Project-related activities would total 760 thousand metric tons of CO₂ equivalent (MTCO₂e) annually under the worst case, peak scenario; annual GHG emissions are expected to be lower. The impact of these foreseeable projects would add to the impact of global GHG emissions. For comparison with past emissions, these cumulative projects would add to the baseline GHG inventory of approximately 1.5 million MTCO₂e in the unincorporated areas of Santa Barbara County, based on 2007 data published in the ECAP (1,192,970 MTCO₂e under County jurisdiction and 315,890 MTCO₂e from stationary sources under APCD jurisdiction; see Section 4.4.1.4).

The produced oil from the proposed Project and neighboring cumulative projects would be fed into to California's refineries and refined into transportation fuels such as gasoline, diesel, or jet fuel, and other petroleum-based end use products such as lubricants, asphalt, or synthetic materials. The produced oil would serve a large and existing demand for petroleum products in California (see Section 6.3, Energy Conservation), and the market demand would continue to be served through California's existing pipeline, refining, and distribution infrastructure. As a result, the change in the oil supply brought about by the proposed Project and neighboring cumulative projects would not require or create any new markets or use of new or different refineries or refining methods from those that exist today to serve California's end use demand for transportation fuels. The overall consumption of fuels and other petroleum products by end-users would not change as a result of the produced oil supplied by these projects.

Among the programs in place to reduce the overall end-use demand for transportation fuels across California's economy are efforts to transition to battery-electric and fuel-cell electric vehicles and to increase transportation fuel efficiencies. Locally, strategies in the ECAP and GHG mitigation recommendations from the APCD show how project-specific reductions can be achieved in the County in fuel use and GHG emissions where necessary to achieve additional local benefits. The mitigation recommended for the proposed Project in MM GHG-1 would achieve GHG reductions either locally or outside the Project area.

CULTURAL, TRIBAL CULTURAL, AND PALEONTOLOGICAL RESOURCES (Section 4.5)

The proposed Project could result in adverse effects on cultural resources (historical and paleontological) that are cumulatively considerable when evaluated in conjunction with other past or present projects in the vicinity. Most of the cumulative projects involve oil field expansions and related projects, such as the ERG West Cat Canyon Revitalization Project and PetroRock UCCB Project within Cat Canyon. These projects have potential to impact sensitive cultural resources through ground disturbance and through visual impacts associated with further transition of a rural landscape to an industrial landscape. It is likely that such projects would add to the cumulative effect of impacts to cultural resources.

The proposed Project would contribute to adverse cumulative effects to cultural resources in conjunction with other nearby projects. Mitigation measures recommended for the proposed Project would minimize the Project's incremental contribution to cumulative effects on cultural resources. This mitigation includes cultural and tribal monitoring, and authority to halt worker crews during ground disturbance in Holocene sediments (MM CULT-1a, MM CULT-2) and plans for the inadvertent discovery of historical resources, unique archaeological resources, tribal cultural resources or human remains (MM CULT-3a, MM CULT-3b, MM CULT-3c). The mitigation measures recommended for the Project would reduce any impacts to less than significant with mitigation (Class II). Therefore, the proposed project's contribution to cumulative cultural impacts would not be considerable.

Table ES-5. Cumulative Impacts of the Proposed Project

GEOLOGY AND GEOLOGIC HAZARDS (Section 4.6)

Geologic and soils impacts (such as slope instability/failure, soil erosion, ground shaking, and expansive/corrosive soils) are typically site-specific. The impacts of each past, present, and reasonably foreseeable project would be specific to the respective site and its users, and would not normally occur in common with or add to impacts on other sites. In addition, development of each site would be subject to site development and construction guidelines and standards (local, State, and federal) that are designed to protect public safety. In order to be cumulatively considerable, adverse geologic conditions would have to occur at the same time and in the same location as the same or similar conditions of the proposed Project.

Seismic impacts (such as ground shaking and earthquake-induced slope failure) from the numerous local and regional faults comprise an impact of the geologic environment on individual projects and would not introduce cumulatively considerable impacts. As discussed, based on historic development of the Cat Canyon Oil Field, induced seismicity is also unlikely. Impacts from unsuitable soils (expansive or corrosive soils) would also represent an impact of the environment on individual projects and would not be cumulatively considerable.

HAZARDOUS MATERIALS AND RISK OF UPSET (Section 4.7)

Risk of Upset

Given the comparable scale of the ERG and PetroRock projects, it is expected that the oil field hazard footprints presented in Table 4.7-3 would be similar to those for the proposed Project. The Quantitative Risk Assessments (QRAs) for the proposed Project and ERG Project (SCS 2016) concluded that the risk of upset for oil field operations would be less than significant, using Santa Barbara criteria, and that any overlap area for hazard impacts would be mostly within the lease areas. Due to the low population density (20/sq.mi.) adjacent to the oil field site, the QRAs concluded that the increased risks of these projects to the general public due to oil field operations would be less than significant.

However, the proposed Aera Project includes the construction of a 14 mile 8-inch SoCal Gas natural gas pipeline, which traverses the community of Orcutt and requires the crossing of U.S. 101. To accommodate the ERG Project, a 3.5-mile 8-inch natural gas pipeline would be built that also crosses U.S. 101. The PetroRock Project would require the construction of a new 2.7 mile natural gas pipeline, which would cross Foxen Canyon Road. The cumulative risk impact to the general public due to hazards associated with natural gas pipelines is considered significant, but mitigable (Class II) with implementation of proposed mitigation and applicable State and federal requirements.

Assuming a scenario where the Foxen Petroleum Pipeline is not built or is non-operational, the proposed Aera, ERG, and PetroRock projects would contribute up to 410 one-way tanker truck trips per day for light and blended crude transport, or 17 one-way truck trips per hour. Annual miles traveled for the three projects, would exceed 12 million miles per year, with the majority of these miles being contributed by the Aera Project since all of its light and blended crude truck trips would travel to/from Kern County. The Aera Transportation QRA concluded that trucking associated with the Aera Project would be less than significant with mitigation. With implementation of MM Risk-4, the proposed Aera Project's contribution to this potentially significant cumulative impact would not be considerable.

Hazardous Materials

For the proposed Aera, ERG, and PetroRock projects, there are currently no known oil seeps or existing petroleum-hydrocarbon containing soils on the oil field sites other than soils managed under the applicants' existing and future beneficial reuse programs. If contaminated soils are encountered during construction activities, they would be analyzed for indications of hazardous concentrations of chemicals of potential concern and handled as required by existing regulations.

Hazardous materials that would be used during project construction activities include gasoline, diesel fuel, oil, lubricants, paint and small quantities of solvents. Small volumes of these materials would be temporarily stored on-site. To minimize the potential for a release, all handling and storage of these materials would be conducted in accordance with oil field best management practices including secondary containment and proper storage of materials in accordance with federal, State, and local codes and standards, and crew training.

Table ES-5. Cumulative Impacts of the Proposed Project

Releases during drilling activities can occur due to surface equipment failures, such as ruptured hoses or failed valves, or can be due to an uncontrolled release from a well, commonly referred to as a blowout. The use of blowout prevention equipment reduces the frequency and severity of blowouts. In order for a blowout to occur, the drill would need to pass through a pressurized reservoir. A reservoir that does not have sufficient pressure to flow to the surface cannot have a blowout. Based on the reservoir pressures measured in Cat Canyon production areas, pressures that would be encountered in the cumulative projects are not anticipated to be sufficient to produce a sustained blowout release. Therefore, the proposed Project's contribution to area-wide risks of upset impacts would not be cumulatively considerable.

The cumulative projects would require the use of chemicals on-site for routine operations, as well as the generation of hazardous materials during the production and processing of produced oil, gas, and water. Bulk chemicals would be imported by truck for use on-site throughout the life of each project. The projects would utilize and store these chemicals and produced crude oil on-site in vessels, tanks, and various ancillary processing equipment located within their respective oil field, and their use and storage would be conducted in accordance with the Project Hazardous Material Business Plan. Hazardous materials storage vessels are designed in conformance with the applicable laws and regulations. Plant personnel would be properly trained in the handling, use, and cleanup of hazardous materials used at the plant, and in procedures to be followed in the event of a leak or spill. Adequate supplies of appropriate cleanup materials would be stored at each project site. SPCC Plans would be prepared and implemented for each project as well.

Cumulative hazardous materials impacts are considered to be less than significant with the adherence to regulatory requirements, including implementation of Spill Prevention Control and Countermeasures Plans.

Fire

The proposed Project, in conjunction with other planned and pending projects in the vicinity would result in an incremental increase in activities that could increase the risk of fires in the area. Each of the cumulative oil and gas developments projects would be required to develop and implement a Fire Protection Plan which would be submitted to the County Fire Department and Planning and Development Department for approval. County Fire vegetation abatement, access requirements, and onsite fire-fighting equipment would be implemented and verified through ongoing inspections. Additionally, existing Fire Stations in Sisquoc, Orcutt, Santa Maria, and Los Alamos provide fire protection services in the cumulative project region, within acceptable response times. Therefore, the proposed Project's incremental contribution to area-wide fire risk is not cumulatively considerable.

NOISE (Section 4.8)

Construction. The geographic context for cumulative noise impacts assessment conservatively included any of the larger oil and gas projects that would be within 2 miles of a sensitive receptor location. These receptors could be affected by the proposed Project, ERG, and PetroRock projects' well drilling and workovers, and Foxen Petroleum Pipeline construction. The geographic extent of cumulative impacts from truck noise is generally limited to other projects within approximately 0.5 mile of any truck route.

Due to the location of affected receptors, temporary construction noise from the ERG and PetroRock projects could be perceptible and combine with temporary Aera Project noise should construction/drilling activities overlap. The potential for construction schedules to overlap and cumulatively generate noise at receptor locations is unknown at this time and the variable site-specific terrain and wind conditions that could affect noise impacts at receptors have not been determined for each project. Even with implementation of Mitigation Measure NOISE-1, temporary construction noise could have a significant cumulative contribution to noise level increases over ambient conditions at some of the sensitive receptors, especially those located near project property boundaries. The Aera Project's contribution to this cumulative impact could be potentially significant. Mitigation Measure NOISE-3 stipulates coordination efforts among the three cumulative oil and gas projects to reduce this impact; however, given the unknown final approved configuration of each project and future construction schedules, this impact is considered significant and unavoidable (Class I).

Table ES-5. Cumulative Impacts of the Proposed Project

Operation and Maintenance. Permanent noise from operation and maintenance of the proposed Project would attenuate to below ambient conditions at the nearest receptors. Therefore, the proposed Project's operation would have no cumulative contribution to increased ambient noise levels at receptor locations that could be affected by the ERG and PetroRock projects. Noise from workover drilling activities could result in temporarily increased ambient noise levels, but would not be cumulatively considerable with the implementation of proposed Mitigation Measure NOISE-2. Therefore, noise impacts from the proposed Project workover drilling would not be cumulatively considerable.

The proposed Project would not generate noise from operational vehicle trips that would adversely exceed ambient conditions. However, because they would increase traffic noise levels along the travel routes, they would have an adverse cumulative contribution to permanently increasing ambient noise levels. This contribution is considered to be cumulatively considerable with the potential to be significant in the event the Foxen Petroleum Pipeline is not constructed and increased heavy truck traffic associated with the ERG and PetroRock projects would increase traffic noise along Cat Canyon, Palmer, Dominion and Foxen Canyon roads, as well as Betteravia Road.

Vibration. Cumulative vibration is not anticipated, as vibration would not extend beyond the immediate work area and therefore would not combine with vibration from other projects in the area.

SURFACE AND GROUNDWATER RESOURCES (Section 4.9)

Surface Water

Accidental Spills (Impact SGW-1). Cumulative oil field development and corresponding oil transport would result in a significant and unavoidable impact associated with an accidental oil or produced water spill. As discussed under Impact SGW-1, accidental spills and associated contaminated stormwater runoff, could affect on- or offsite surface waters and groundwater, depending on the location and size of the spill.

Water quality impacts (Impact SGW-2) for the proposed and cumulative projects could occur due to an unintentional release of hazardous materials (produced oil and water, and other fuels, lubricants, and fluids required for construction and operation) at the project sites, including spills. Disturbance of soil during construction has the potential to reduce surface water quality through the introduction of disturbed sediments into local streams or other water bodies.

Well production activities have the potential for contamination of surface water. Assuming one spill per year for every 130 oil wells, and assuming 760 cumulative wells, approximately 7 or 8 spills per year could be expected, with a total spilled volume of approximately 300 barrels per year. The proposed Project would contribute about 30% to the cumulative spill risk. These spills could result in water quality impacts to downstream beneficial uses; however, most spills would occur within developed well, equipment, and storage pads which would be located in upland areas away from surface waters, and such facilities would include secondary containment.

Federal, State and local regulations protect surface water beneficial uses by requiring a wide range of pollution-prevention Best Management Practices, thereby mitigating potential water quality cumulative impacts to a less than significant level. Although existing regulations should provide sufficient protection to prevent significant cumulative impacts, some water quality impacts may occur as a result of flooding. Mitigation Measure BIO-1 requires development and implementation of an Emergency Response Action Plan to mitigate impacts in the event of an oil or other hazardous materials spill (including any seeps or surface expressions). With Mitigation Measures SGW-1, SGW-2, and BIO-1 in place, cumulative surface water quality impacts due to construction and routine operations are considered less than significant. Likewise, the contribution of the proposed Project to cumulative, area-wide surface water impacts would not be cumulatively considerable with implementation of required mitigation.

Table ES-5. Cumulative Impacts of the Proposed Project

Erosion and siltation impacts (Impact SGW-3) would be similar to those for the proposed Project, with a greater potential for impact due to the construction of 760 new oil enhancement development wells (total ERG, Aera, and PetroRock wells). The cumulative effect of erosion and siltation caused by the construction of new oil and gas wells, as well as new ground disturbance at existing well pads could be substantial and is potentially significant. Compliance with the California Construction General Permit, which would be required for the cumulative projects, would likely reduce the cumulative construction-related soil and erosion impacts to less than significant. With implementation of Mitigation Measure SGW-1 (Implement Erosion Control Plan), the proposed Project's contribution to erosion and siltation impacts would not be cumulatively considerable.

Flooding impacts (Impact SGW-4) could occur through the development of new impervious areas, or clearing and grading for new well pads, equipment areas, and access roads that would increase the rate of runoff from the site. For the proposed and cumulative projects, new impervious areas would be widely scattered and minor and a relatively small percentage of the overall watershed generating flood peaks. Given this relatively small area of new development, and the lack of substantial new impervious areas, the effect on downstream flooding and the capacity of downstream drainage systems would not be significant.

Some well pads and their associated infrastructure may be located in flood hazard areas or areas of local flooding, but the wells and other equipment that may be on the pads are not generally subject to severe damage if flooded. There is a potential for portions of pipelines buried beneath watercourses to be exposed by scour during flood flows, possibly leading to rupture of the pipeline and contamination of surface waters. Development and implementation of a Flood Protection Plan (MM SGW-2), would reduce flood-related impacts to a less than significant level. Therefore, the proposed project's contribution to the risk of flood-related oil spill impacts would not be cumulatively considerable.

Groundwater

Groundwater Quality (Impact SGW-5). Water or steam (cyclic steam or steam flooding) injected under pressure to enhance oil recovery in oil bearing formations or injection of produced water/brine may have potential impacts to groundwater quality (Impact SGW-5). Although the water and steam are injected in deeper non-fresh groundwater formations (2,000 to 3,000 feet below ground surface), an impact could occur if upward migration of the injected water or steam reaches the overlying fresh groundwater resources. Oil field wastewater or "produced water" may contain salts, sediment, hydrocarbons, and naturally occurring radioactive material (NORM). Contamination by oil and gas wastewater may pose risks to human health and environmental quality if fresh groundwater becomes contaminated. The primary pathway for groundwater contamination include surface spills and leaks at the drilling site or storage areas that then percolate to groundwater, or a subsurface path along damaged oil well casings or cement seals or natural subsurface pathway such as fractures or faults in the oil reservoir rock (injection zone).

Drilling of 760 new wells and future well stimulation activities must be conducted in accordance with DOGGR requirements for sealing within fresh groundwater aquifers extending below the base of fresh groundwater, including an area-specific groundwater monitoring program. As a result, all injection well sites must have a physical barrier across the site pad during injection operations to prevent spills and leaks reaching the surface and intercepting the surface to groundwater pathway. With implementation of MM SGW-3a through MM SQW-5, the proposed Project's contribution to cumulative impacts to groundwater quality would not be cumulatively considerable.

Groundwater Usage (Impact SGW-6). Cumulative groundwater usage for construction and operations for the proposed ERG, Aera, and PetroRock projects would be sourced from wells within the Santa Maria Groundwater Basin. Groundwater would be used for dust abatement (construction and operations) and domestic needs (restrooms and landscaping) during operations. Since the Santa Maria Groundwater Basin is adjudicated and construction of all of the projects would not likely occur concurrently, cumulative groundwater usage is expected to remain less than significant (Class III), including the proposed Project's contribution.

Table ES-5. Cumulative Impacts of the Proposed Project

TRAFFIC AND TRANSPORTATION (Section 4.10)

Construction (Temporary Trip Generation). Cumulative traffic impacts would occur on the roadways and other transportation facilities that would be affected by the proposed Project if construction activities from cumulative projects were to be implemented simultaneously with the construction of the proposed Project. However, the temporary addition of construction traffic volumes from the proposed and cumulative projects (should they overlap) likely would not decrease roadway operating conditions to an unacceptable level of service (LOS D or below). With the implementation of MMs TR-1 and TR-2, the proposed Project's contribution to cumulative impacts to the circulation system from temporary daily traffic volumes during construction would not be considerable.

Operation and Maintenance (Permanent Trip Generation). Light crude oil would be trucked to the Aera East Cat Canyon oil field (21 one-way trips, plus 74 empty one-way trucks) for blending with the heavy crude oil produced. In addition, light crude transport for the ERG and PetroRock projects would be required 19 roundtrip (38 one-way). As proposed for ERG and PetroRock, blended crude oil would be transported in the Foxen Petroleum Pipeline; thereby, eliminating the need for daily trucking of blended crude oil from the field to the Phillips 66 Santa Maria Pump Station (except when the pipeline is shut down for maintenance or otherwise out of service); the proposed Aera Project includes trucking of blended crude out of the County (95 one-way truck trips per day). In the event the Foxen Petroleum Pipeline is unavailable, the proposed and cumulative blended projects would result in a net increase of 91 round trip (277 one-way) blended crude truck trips over existing conditions on local roadways. These additional truck trips would not result in increases to Volume to Capacity ratios over the County Thresholds for roads operating at LOS A or diminish intersection delays or LOS. Therefore, cumulative operational traffic impacts would have a less than significant contribution to increasing average daily trip volumes or diminishing operating conditions on study area roadways. However, it is likely that worst-case cumulative trips from the ERG, Aera, and PetroRock projects combined would result in a combined cumulative effect to intersection delays since tanker trucks, due to their large size and slow acceleration, tend to add more delays at controlled and uncontrolled intersections compared to passenger vehicles.

The ERG, Aera, and PetroRock projects would contribute to roadway degradation. Mitigation Measure TR-2 is proposed to mitigate any long-term damage to the haul routes from the net increase of combined light and blended crude daily truck trips for the three projects (110 round trip truck trips and 410 one-way truck trips) assuming that the FPP is unavailable. With the implementation of Mitigation Measure TR-2, the proposed Project would not be cumulatively considerable related to roadway damage impacts.
