

4.2 Air Quality

This section describes environmental and regulatory settings related to air quality in the proposed Project area; identifies air quality impacts of the proposed Project and cumulative impacts from this and other projects in the region; and recommends mitigation measures to reduce those impacts. Alternatives to the proposed Project are discussed in Section 5.0. Compliance with applicable air quality management rules and regulations would serve to reduce or avoid certain impacts that might otherwise occur with the implementation of the proposed Project. This section draws from the Applicant's *Air Quality Impact Analysis, East Cat Canyon Redevelopment Project*, prepared by Insight Environmental Consultants (Revised July 2018) and reviewed by the SBCAPCD, as peer-reviewed by Aspen Environmental Group. This technical study is provided in full in Appendix E of this EIR.

4.2.1 Environmental Setting

The Aera East Cat Canyon Oil Field Redevelopment Project would re-establish oil production and introduce new sources of air emissions to Northern Santa Barbara County, in the South Central Coast Air Basin, under the jurisdiction of the Santa Barbara County Air Pollution Control District (APCD). The South Central Coast Air Basin also includes the neighboring San Luis Obispo and Ventura County local air districts. These local air districts oversee programs to improve air quality in the region.

4.2.1.1 Physical Setting

The ambient air quality conditions of the environmental setting and baseline conditions reflect the emissions associated with background sources in the air basin.

Regional Meteorology, Topography, and Air Pollution Potential

The South Central Coast Air Basin has a Mediterranean climate characterized by mild winters, and warm, dry summers. The influence of the Pacific Ocean causes mild temperatures year-round along the coast, while inland areas experience a wider range of temperatures. Precipitation is confined primarily to the winter months. Occasionally, tropical air masses result in rainfall during summer months. Annual precipitation in the region varies widely over relatively short distances, primarily due to topographical effects. The long-term annual total precipitation along the coast is approximately 12 to 16 inches, but on mountain-tops, totals are nearly 30 inches. See Section 4.9, Surface/Groundwater Resources for a description of persistent drought conditions, and Section 4.4, Climate Change/Greenhouse Gas Emissions for a discussion of the effects of global climate change on water supply.

Regional winds are normally onshore and are generally light. This can contribute to higher levels of pollution, since low wind speeds minimize dispersion of pollutants. During summer months, northwesterly winds are stronger and persist later into the night. When the strong and persistent high-pressure system that lies over the Pacific Ocean weakens, a Santa Ana condition can develop, with air traveling westward into the County from the east. Stagnant air often occurs at the end of a Santa Ana condition, causing a buildup of pollutants offshore.

Topography plays a significant role in affecting the direction and speed of winds. Year round, light onshore winds hamper the dispersion of primary pollutants, and the orientation of the inland mountain ranges interrupts air circulation patterns. Pollutants become trapped, creating ideal conditions for the production of secondary pollutants.

Pollutants Subject to Air Quality Management

Air quality is determined by measuring ambient concentrations of air pollutants, which are known to have adverse health effects. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are planning standards that define the upper limits for airborne concentrations of pollutants. The standards are designed to protect the most sensitive individuals and ensure public health and welfare with a reasonable margin of safety. At the national level, the federal Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to establish NAAQS and designate geographic areas that are either attaining or violating the standards. In California, air quality management and regulation is the shared responsibility of the California Air Resources Board (ARB) and local air quality management and local air pollution control districts.

The NAAQS and CAAQS are established for the “criteria pollutants” which are ozone, respirable particulate matter (PM10), fine particulate matter (PM2.5), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead. Nitrogen oxides (NO_x) and reactive organic compounds (ROC), or reactive organic gases (ROG), including volatile organic compounds (VOC), are regulated as precursors to ozone formation. The U.S. EPA and ARB both have independent authority to develop and establish ambient air quality standards, and in general, the CAAQS are more stringent than the corresponding NAAQS. The national and California standards, and the relevant health effects of the pollutants, are summarized in Table 4.2-1.

Table 4.2-1. National and California Ambient Air Quality Standards and Relevant Health Effects

Pollutant	Averaging Time	California Standards	National Standards	Relevant Health Effects
Ozone	1-hour	0.09 ppm	—	(a) Short-term exposures: (1) Pulmonary function decrements and localized lung edema in humans and animals (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage.
	8-hour	0.070 ppm	0.070 ppm	
Respirable Particulate Matter (PM10)	24-hour	50 µg/m ³	150 µg/m ³	(a) Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children.
	Annual Mean	20 µg/m ³	—	
Fine Particulate Matter (PM2.5)	24-hour	—	35 µg/m ³	Decreased lung function from exposures and exacerbation of symptoms in sensitive patients with respiratory disease, elderly, and children.
	Annual Mean	12 µg/m ³	12.0 µg/m ³	
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm	a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses.
	8-hour	9 ppm	9 ppm	

Table 4.2-1. National and California Ambient Air Quality Standards and Relevant Health Effects

Pollutant	Averaging Time	California Standards	National Standards	Relevant Health Effects
Nitrogen Dioxide (NO ₂)	1-hour	0.18 ppm	0.100 ppm	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration.
	Annual Mean	0.030 ppm	0.053 ppm	
Sulfur Dioxide (SO ₂)	1-hour	0.25 ppm	0.075 ppm	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
	24-hour	0.04 ppm	0.14 ppm	
	Annual Mean	—	0.03 ppm	
Lead	30-day Average	1.5 µg/m ³	—	(a) Increased body burden; (b) Impairment of blood formation and nerve conduction.
	Calendar Quarter	—	1.5 µg/m ³	
Visibility Reducing Particles	8-hour	extinction 0.23/kilometer, except Lake Tahoe	—	Reduction of visibility, aesthetic impact and impacts due to particulates (see above).
Sulfates	24-hour	25 µg/m ³	—	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage due to corrosion.
Hydrogen Sulfide	1-hour	0.03 ppm	—	Odor annoyance level.
Vinyl Chloride	24-hour	0.01 ppm	—	Known carcinogen.

Notes: ppm=parts per million; µg/m³= micrograms per cubic meter; “—” = no standard.
Source: ARB, 2016. Ambient Air Quality Standards Chart. <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>.

Another class of air pollutants that are subject to regulatory requirements is called hazardous air pollutants (HAPs) or air toxics. Substances that are acutely or chronically harmful to health, such as those considered under the U.S. EPA hazardous air pollutant programs or California’s air toxics programs, are collectively called toxic air contaminants (TACs). There are 186 federal hazardous air pollutants. There are generally no County-specific monitoring data for the majority of the TACs or federal HAPs. Regulatory ambient air quality standards and exposure thresholds for TACs or HAPs are based on scientific and medical research. These standards establish minimum concentrations of an air pollutant in the ambient air that could initiate adverse health effects.

Criteria Air Pollutants. Criteria air pollutants are also categorized as inert or photochemically reactive, depending on their subsequent behavior in the atmosphere. By definition, inert pollutants are relatively stable, and their chemical composition remains stable as they move and diffuse through the atmosphere. The photochemical pollutants may react to form secondary pollutants. For these pollutants, adverse health effects may be caused directly by the emitted pollutant or by the secondary pollutants created by atmospheric reactions. The reactive pollutants of primary concern are the ozone precursors, ozone, and the precursors to particulate matter.

- **Ozone.** Ozone is formed in the atmosphere through a series of complex photochemical reactions involving nitrogen oxides (NO_x), reactive organic compounds (ROC), and sunlight, occurring over a period of several hours. Since ozone is not emitted directly into the atmosphere, but is formed as a result of photochemical reactions, it is classified as a secondary or regional pollutant. Because these ozone-forming reactions take time, peak ozone levels are often found downwind of major source areas. Santa Barbara County is not in attainment for the State ozone standard, but the County is in attainment for the Federal 8-hour ozone standard.
- **Carbon Monoxide.** CO is formed primarily by the incomplete combustion of organic fuels. High values are generally measured during winter, when dispersion is limited by morning surface inversions. Seasonal and diurnal variations in meteorological conditions lead to lower values in summer and in the afternoon.
- **Nitrogen Dioxide.** NO₂ a brownish gas can be formed from nitric oxide (NO), which is a colorless gas released during combustion and rapidly oxidizes in the atmosphere. The highest nitrogen dioxide values are generally measured in urbanized areas with heavy traffic.
- **Sulfur Dioxide.** SO₂ is a gas produced primarily from combustion of sulfurous fuels by stationary and mobile sources. However, SO₂ can react in the atmosphere to produce acids or particulate sulfates, which can also cause impacts.
- **Sulfate.** SO₄²⁻ is an aerosol that occurs primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. Sulfur is oxidized to sulfur dioxide (SO₂) during the combustion process and is subsequently converted to sulfate compounds which exist in the atmosphere as sulfuric acid and sulfate salts.
- **PM10 and PM2.5.** PM10 is particulate matter that measures 10 micrometer or less in diameter. PM2.5 is particulate matter that measures 2.5 micrometer or less in diameter. The largest quantities of direct PM10 emissions are generally produced by industrial processes such as bulk material handling, combustion and minerals processing as well as from soils via roads, construction, agriculture, and natural, windblown dust. Fine particulate matter (PM2.5) is more likely than PM10 to deeply penetrate respiratory systems. PM2.5 is directly produced during combustion, and ambient levels of nitrogen oxides (NO_x) and sulfur oxides (SO_x) play an important role by reacting, generally with ambient gas-phase ammonia, in the formation of secondary PM2.5.
- **Lead.** Lead is a heavy metal that in ambient air occurs as a lead oxide aerosol or dust. Since lead is no longer added to gasoline or to paint products, lead emissions have been reduced significantly in recent years.

Hazardous Air Pollutants (HAPs)

HAPs are contaminants that are known or suspected to cause cancer, genetic mutations, birth defects, or other serious illnesses in humans. HAPs may be emitted from three main source categories: (1) industrial facilities; (2) internal combustion engines (stationary and mobile); and (3) small “area sources” (such as solvent use). The ARB publishes lists of Volatile Organic Compound Species Profiles for many industrial applications and substances, some of which are classified as HAPs.

Generally, HAPs behave in the atmosphere in the same general way as criteria pollutants, and HAPs are normally treated as inert pollutants that do not react chemically, but preserve the same chemical composition from point of emission to point of impact. The concentrations of toxic pollutants are therefore determined by the quantity and concentration emitted at the source and the meteorological conditions encountered as the pollutants are transported away from the source. HAPs include compounds such as, but not limited to: benzene, ethyl benzene, toluene, chlorine, formaldehyde, hydrochloric acid, vinyl chloride,

arsenic compounds (inorganic including arsine), lead compounds, coke oven emissions and others. Thus, impacts from toxic pollutant emissions tend to be site-specific and their intensity is subject to constantly changing meteorological conditions. The Cat Canyon Oil Field is not within an area that is likely to contain serpentine soils with naturally occurring asbestos (DOC, 2000).

Odorous Compounds

Several compounds associated with the oil and gas industry can produce odors that can be determined to be nuisances. Sulfur compounds, found in oil and gas, have very low odor threshold levels. H₂S is produced during the decay of organic material and is also found naturally in petroleum and natural gas. H₂S is an odorous, toxic, gaseous compound that can be detected by humans at very low concentrations. For instance, H₂S can be detected by humans at concentrations as low as 0.5 ppb (detected by two percent of the population) to 40 ppb (qualified as annoying by 50 percent of the population). These levels are significantly lower than concentrations that could affect human health. Inhalation of more than 600 ppm can be instantly lethal, and inhalation of over 100 ppm can be lethal if exposure lasts longer than 60 minutes. To protect public health and to significantly reduce odor annoyance, the ARB adopted a standard of 0.03 ppm over a one-hour average (ARB 2009).

Many volatile compounds found in oil and gas (ethane and longer chain hydrocarbons) typically have petroleum or gasoline odor with various odor thresholds. Natural gas contains mostly methane (which is odorless), thus the natural gas that is supplied to end-users is required by law to be odorized, before being placed into a distribution pipeline. The various compounds that are used for odorizing include sulfur compounds having a very low odor threshold and which can be detected easily if mixed with the air.

The Cat Canyon Oil Field occasionally attracts complaints as a source of odors affecting the community of Sisquoc and other scattered residences, especially on non-windy days. During a six-month period within 2016, the Santa Barbara County Fire Station Number 23 received one complaint of the H₂S odors from the Cat Canyon Oil Field. (Record of Conversation with Aspen Environmental Group, 11/18/2016.)

Local Ambient Air Quality and Attainment Status

The U.S. EPA, ARB, and local air districts work together to classify local areas in California as in attainment, unclassified, or nonattainment. The classification depends on whether the monitored ambient air quality data show compliance (attainment), insufficient data available (unclassified), or non-compliance (nonattainment) with the ambient air quality standards.

A summary of the attainment status for Santa Barbara County is provided in Table 4.2-2. Ambient air quality in the County is generally good (i.e., within applicable ambient air quality standards), with the exception of PM₁₀ and ozone.

Table 4.2-2. Attainment Status for Santa Barbara County

Pollutant	California Designation	Federal Designation
Ozone	Nonattainment-Transitional	Unclassifiable/Attainment
PM ₁₀	Nonattainment	Attainment
PM _{2.5}	Attainment	Attainment
CO	Attainment	Attainment
NO ₂	Attainment	Attainment
SO ₂	Attainment	Attainment
All Other Pollutants	Attainment/Unclassified	Attainment/Unclassified

Table 4.2-3 summarizes the highest concentrations from recent ambient air quality data from the nearby Santa Maria monitoring station. As depicted in the table, the Santa Maria monitoring station data shows that the ozone standard for the particular area is in attainment while the PM10 is in nonattainment.

Table 4.2-3. Summary of Ambient Air Quality Data, Santa Maria Monitoring Station

Pollutant	Most Restrictive Standard	2015	2016	2017
Ozone (1-hour, ppm)	0.09 (CAAQS)	0.066	0.062	0.068
Ozone (8-hour, ppm)	0.070 (CAAQS)	0.055	0.056	0.063
Ozone (days over the 8-hour State standard)	—	—	—	—
PM10 (24-hour, µg/m ³)	50 (CAAQS)	66.4	78.6	106.9
PM10 (annual average, µg/m ³)	20 (CAAQS)	23.8	25.7	26.9
PM10 (days over the 24-hour State standard)	—	~10	~16	~22
PM2.5 (24-hour, µg/m ³)	35 (NAAQS)	19.2	19.4	19.9
PM2.5 (annual average, µg/m ³)	12 (CAAQS)	7.8	—	7.3
PM2.5 (days over the 24-hour federal standard)	—	—	—	—
NO ₂ (1-hour, ppm)	0.100 (NAAQS)	0.046	0.036	0.044
NO ₂ (annual average, ppm)	0.030 (CAAQS)	0.007	0.006	0.006
SO ₂ (24-hour, ppm)	0.04 (CAAQS)	0.002 (2012)	—	—

Notes: ppm=parts per million; µg/m³= micrograms per cubic meter; "—" =not applicable or not available.
 Source: CARB Air Quality Data Statistics for Santa Maria (906 S. Broadway), except SO₂ was most-recently (2012) measured in Lompoc.

4.2.1.2 Air Basin Criteria Pollutant Emission Inventory

Emissions of criteria air pollutants are inventoried by ARB into five different stationary source subcategories, with all mobile sources and area-wide sources derived separately. The stationary source category of Petroleum Production and Marketing includes primarily the ROC emissions from oil and gas production along with pipeline transmission and distribution of petroleum products. The combustion emissions from fuel used by stationary sources as part of the petroleum production process, and all other downstream processes, are categorized separately as Fuel Combustion. The emissions inventory compiled by ARB for the Santa Barbara County APCD portion of the statewide SIP is shown in Table 4.2-4.

Table 4.2-4. Santa Barbara County APCD, Emissions for 2012 (average tons per day)

Source Category	NOx	ROC	PM10	PM2.5	CO	SOx
Stationary Sources						
Fuel Combustion, includes fuel combustion for Oil and Gas Production	5.21	0.98	0.34	0.33	7.79	0.45
Waste Disposal	0.01	0.09	0.01	0.01	0.05	0.00
Cleaning and Surface Coatings	—	5.56	—	—	—	—
Petroleum Production and Marketing	0.09	3.84	0.03	0.03	0.34	0.29
Industrial Processes	0.13	0.19	0.64	0.11	0.26	0.32
— Total Stationary Sources	5.45	10.66	1.02	0.49	8.44	1.06
Areawide Sources						
Solvent Evaporation	—	8.63	—	—	0	0
Miscellaneous Processes	0.92	1.86	10.33	2.23	7.13	0.03
— Total Areawide Sources	0.92	10.49	10.33	2.23	7.13	0.03

Table 4.2-4. Santa Barbara County APCD, Emissions for 2012 (average tons per day)

Source Category	NOx	ROC	PM10	PM2.5	CO	SOx
Mobile Sources						
On-Road Motor Vehicles	10.44	5.24	0.73	0.39	41.73	0.05
Other Mobile Sources, includes Oceangoing Vessels	55.77	4.88	2.50	2.41	41.78	11.06
— Total Mobile Sources	66.20	10.11	3.23	2.80	83.51	11.10
Grand Total for Santa Barbara County APCD	72.57	31.27	14.57	5.52	99.08	12.20

Source: ARB, 2016. CEPAM: 2016 SIP - Standard emission projections for Santa Barbara County APCD. Data for year 2012.

In Santa Barbara County, the APCD relies upon an inventory of NOx and ROC emissions for 2012 that forms the baseline for the most-recent ozone attainment planning efforts (SBCAPCD, 2016). The APCD air quality management plans and the baseline inventory show that a substantial portion of ROC emissions are from natural sources. These natural sources of ROC, that are not in the APCD’s planning inventory, include approximately 124 tons per day of biogenic emissions from plants and trees, 26 tons per day from natural uncontrolled seeps of oil and gas constituents through cracks and voids in the ocean floor, and 11 tons per day from wildfires on average (SBCAPCD, 2016). Emissions of CO and NOx mostly occur due to mobile sources (e.g., on-road vehicles and oceangoing vessels). The majority of SOx emissions in Santa Barbara County come from oceangoing vessels and mineral processes, specifically from diatomaceous earth processing. Particulate emissions sources vary from dust caused by agricultural and construction activities, on-road dust, various mineral processing, to particulate emissions from combustion engines.

4.2.1.3 Existing Site Conditions

The site for the Aera East Cat Canyon Oil Field Redevelopment Project is in the eastern area of the State-designated Cat Canyon Oil Field. Figure 2-4 (Historical Timeline and Production) shows that the development of the East Area of the Cat Canyon Oil Field started in 1917 and was in production for 72 years. A thermal enhanced oil recovery operation (cyclic steam injection) occurred from 1965 through 1989 and a thermal pilot operation (steam drive) was conducted from 1980 through 1983. The field’s abandoned 131 wells, as shown on Figure 2-5 (DOGGR Well Map), were abandoned per DOGGR regulations and nearly all of the facilities were removed by 2002, with the exception of four non-producing test wells (Victory G1, G3, and G7, as well as Field Fee G2). These non-producing test wells were drilled in 2012 in support of reservoir sampling and testing efforts. The proposed Project site is currently inactive and includes no existing stationary sources of air pollutants.

The western portion of the proposed Project site is located adjacent to an existing and active oil and gas production site known as ERG’s West Cat Canyon Holdings, which holds various permits to operate sources of emissions.

4.2.2 Regulatory Setting

Federal, State, and local agencies have established standards and regulations that govern the proposed Project. A summary of the regulatory setting for air quality is provided below.

4.2.2.1 Federal Regulations

Federal Clean Air Act (CAA)

The NAAQS were originally established for criteria air pollutants in 1970, with a mandate for periodic updating of the standards (Table 4.2-1). Criteria pollutants are the most prevalent air pollutants known to be hazardous to human health. The federal CAA required states exceeding the standards to prepare air

quality plans showing how the standards were to be met by December 1987. The federal CAA Amendments of 1990 reestablished the timelines for attaining the NAAQS, directed the U.S. EPA to set emissions performance standards for toxic air contaminants, and required certain stationary source facilities to sharply reduce emissions. Emissions from mobile and portable sources, and temporary activities (such as construction) are managed through a range of federal and State programs that set motor gasoline and diesel fuel standards and emissions control requirements for motor vehicles, including exhaust from equipment powered by diesel engines. The relevant local air district rules and regulations that enable the demonstration of attaining the standards are incorporated into the State Implementation Plan from the local air quality management plans, including the APCD's Clean Air Plan.

Reaching attainment for the ozone NAAQS depends on implementation of control strategies for stationary sources of VOC and NO_x, as well as programs for mobile sources. The U.S. EPA released recommendations specifically for controlling VOC from the oil and natural gas industry with the "2016 Control Techniques Guidelines" (U.S. EPA, 2016). Although the Control Techniques Guidelines provide recommendations for state and local air agencies to consider when determining the emissions limits for the oil and gas industry, the U.S. EPA established these guidelines for federal ozone nonattainment areas that are classified as "moderate" and above. Because Santa Barbara County attains the federal ozone NAAQS, these guidelines would not apply.

Federal New Source Performance Standards (NSPS) under CAA Section 111

The U.S. EPA establishes and maintains emission standards of performance for new stationary sources under Federal CAA Section 111(b), known as the New Source Performance Standards (NSPS). Categories of existing stationary sources can also be retroactively controlled under Federal CAA Section 111(d). Categories of sources that cause HAP emissions are controlled through separate standards under CAA Section 112, National Emission Standards for Hazardous Air Pollutants (NESHAP). These standards are specifically designed to reduce the potency, persistence, or potential for bioaccumulation of toxic air pollutants. The emission standards for HAPs under Federal CAA Section 112 prevent adverse health risks and carcinogenic effects from targeted types of facilities.

NESHAP (40 CFR 63), Subpart HH: Oil and Natural Gas Production. [Final Rule: August 16, 2012.] This rule requires control of hazardous air pollutants and toxic air contaminants from certain natural gas processing units, such as dehydration facilities, and storage vessels. Recordkeeping and reporting provisions would apply to the dehydration units, but emissions control provisions in this NESHAP regulation may not apply to the proposed Project, because the regulation focuses on facilities that exceed the federal threshold for major sources of hazardous air pollutants, either 10 tons per year of a single HAP or 25 tons per year of any combination of HAPs.

4.2.2.2 California State Regulations

California Clean Air Act

The California CAA requires regions to develop and implement strategies to attain California's Ambient Air Quality Standards (CAAQS). For some pollutants, the California standards are more stringent than the national standards. California also has separate standards for visibility reducing particles, sulfates, hydrogen sulfide (H₂S), and vinyl chloride.

The APCD has the responsibility to develop the necessary regional air quality management plan for attaining and maintaining the ambient air quality standards. The Federal CAA and California CAA also give the APCD the authority to issue permits through its rules and regulations by requiring that new stationary sources

be subject to New Source Review (NSR). The NSR program ensures that the new stationary sources would not interfere with progress to attain the ambient air quality standards. Various new stationary sources would be associated with the proposed Project and subject to APCD permitting requirements through the NSR program. Emissions from mobile and portable sources and temporary activities (such as construction) are managed through a range of State and federal programs that control mobile sources, motor vehicle emissions, and emissions from equipment powered by diesel engines.

ARB On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation

This regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. This program is informally known as the Truck and Bus Regulation, in California Code of Regulations (CCR) Title 13, Division 3, Chapter 1, Section 2025. The purpose is to reduce emissions from the in-use (existing) on-road fleet of heavy-duty diesel fueled vehicles statewide, and the reporting and emissions control requirements generally apply to any owner or operator of on-highway heavy-duty diesel vehicles or vehicle fleets in California. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

ARB Off-Road Mobile Sources Emission Reduction Programs

The California CAA mandates ARB to achieve the maximum degree of emission reductions from all off-road mobile sources in order to attain the State ambient air quality standards. Off-road mobile sources include heavy construction equipment, including drilling rigs, workover rigs, and pump engines. Tier 1, Tier 2, and Tier 3 standards for large compression-ignition engines used in off-road mobile sources went into effect in California for most engine classes in 1996, 2001, and 2006, respectively. Tier 4 or Tier 4 Interim (4i) standards apply to all off-road diesel engines model year 2012 or newer. In addition, equipment can be retrofitted to achieve lower emissions using the ARB-verified retrofit technologies. The engine standards and a separate program for in-use off-road equipment fleets jointly address the products of diesel combustion, including NO_x emissions and toxic diesel particulate matter (DPM). The California Emission Standards for Off-Road Compression-Ignition Engines are as specified in California Code of Regulations (CCR) Title 13, Division 3, Chapter 9, Article 4, Section 2423. As of January 1, 2018, ARB's regulation to reduce NO_x and DPM from in-use (existing) off-road heavy-duty diesel vehicles prohibits owners of larger fleets from adding any Tier 2 or lower tiered equipment to their fleets (13 CCR Section 2449).

ARB Portable Equipment Registration Program (PERP)

The Portable Equipment Registration Program allows owners or operators of portable engines and associated equipment commonly used for construction or farming to register their units under a statewide portable program that allows them to operate their equipment throughout California without having to obtain individual permits from local air districts.

ARB Airborne Toxic Control Measures (ATCM)

Diesel engines on portable equipment and vehicles are subject to various ATCM that dictate how diesel sources must be controlled statewide. For example, the ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling generally limits idling of commercial motor vehicles (including buses and trucks) within 100 feet of a school or residential area for more than five consecutive minutes or periods aggregating more than five minutes in any one hour (13 CCR, Chapter 10, Section 2485). Diesel engines used in portable equipment fleets are subject to stringent DPM emissions standards, generally requiring use of only newer engines or verified add-on particulate filters (17 CCR Section 93116). Certain stationary compression-ignition engines

running on diesel fuel, including emergency standby engines, must also control particulate matter emissions by installing verified add-on equipment (17 CCR Sections 93115.4 and 93115.6).

California Programs for Health Risks

Air Toxics “Hot Spots” Information and Assessment Act of 1987 – AB 2588 (California Health & Safety Code, Division 26, Part 6). The Hot Spots Act requires an inventory of air toxics emissions from individual facilities, an assessment of health risk, and notification of potential significant health risk.

California Health & Safety Code Sections 25531–25543, The Calderon Bill (SB 1889). These sections set forth changes in the following four areas: (1) provide guidelines to identify a more realistic health risk; (2) require high-risk facilities to submit an air toxic emission reduction plan; (3) hold air pollution control districts accountable for ensuring that the plans will achieve their objectives; and (4) require high-risk facilities to achieve their planned emission reductions.

4.2.2.3 Local Regulations

APCD Air Quality Management Plans

The 2013 Clean Air Plan was adopted by the APCD Board on March 19, 2015, and the 2016 Ozone Plan was adopted by the APCD Board on October 20, 2016. These are the applicable air quality management plans for air quality attainment, and these plans include forecasts of economic activity as a means of predicting future year emissions for horizon years 2030 and 2035, respectively. In adopting these plans, the (future) growth factors for oil and gas-related activity County-wide were set by the APCD to one, due to growth uncertainty in that sector over the long-term (SBCAPCD, 2015; SBCAPCD, 2016). The previous 2007 and 2010 Clean Air Plans included assumptions of gradually *decreasing* production and *decreasing* activity in the oil and gas sector. While assuming a long-term steady level of overall oil and gas activity, the 2016 Ozone Plan notes that ozone precursor emissions from these activities do not necessarily trend at a direct ratio with oil production in the County (SBCAPCD, 2016; p. 3-4).

APCD Rules and Regulations

In the proposed Project area, air quality rules and regulations are promulgated by the APCD. The purpose of the rules and regulations is to limit emissions which in turn would reduce impacts from the proposed Project in order to maintain and/or achieve air quality standards. Some rules also specify emission controls and control technologies for specific types of sources. The regulations also include requirements for obtaining an Authority to Construct (ATC) permit and a Permit to Operate (PTO). These permits are conditioned and issued by the APCD for the construction and/or operation of any new, modified or reevaluated emission source.

Depending on the source type and emission levels many components of the proposed Project and/or alternatives would be required to obtain permits through the APCD rules and regulations which serve to implement the aforementioned NSR program. Increases in emissions of any nonattainment pollutant or its precursor from a new or modified facility that exceed certain thresholds in APCD Regulation VIII (New Source Review) would be required to be offset by surrendering emission reduction credits.

Other applicable rules are summarized below.

Rule 201, Permits Required. Specifies the permits required for construction or operation of equipment that emits air contaminants.

Rule 202, Exemptions to Rule 201. Lists equipment categories that are exempt from the requirements to obtain an APCD permit (exempt from Rule 201).

Rule 303, Nuisance and Rule 310, Odorous Organic Sulfides. These rules prohibit air emissions that cause a nuisance, e.g., odorous sulfates, and prohibit ground level concentrations measured at or beyond the property line in excess of 0.06 ppm H₂S over a 3-minute average or 0.03 ppm H₂S over a 1-hour average.

Rule 325, Crude Oil Production and Separation. Requires emissions controls for crude oil tanks, including wash tanks, produced water tanks, and wastewater separators, and requires control of emissions of produced gas.

Rule 331, Fugitive Emissions Inspection and Maintenance. Requires inspection of components in liquid or gaseous hydrocarbon service at oil and gas production fields, oil and gas processing plants, and pipeline transfer stations for potential leaks and fugitive emissions and requires repairs, recordkeeping and reporting.

Rule 342, Control of Oxides of Nitrogen (NO_x) from Boilers, Steam Generators and Process Heaters. Requires certain NO_x performance standards be achieved for any device with a rated heat input of greater than or equal to 5 MMBtu/hour.

Rule 343, Petroleum Storage Tank Degassing. Requires emissions controls for tanks or other storage containers larger than 40,000 gallons, or for smaller tanks and storage containers as small as 500 gallons, if containing liquids of high volatility.

Rule 344, Petroleum Sumps, Pits and Well Cellars. Requires control and capture of certain sumps, pits, and well cellars at facilities where petroleum is produced, gathered, separated, processed or stored.

Rule 345, Control of Fugitive Dust from Construction and Demolition Activities. Prohibits visible dust emissions into the atmosphere beyond the property line of construction, demolition, or earth moving activity.

Rule 346, Loading of Organic Liquid Cargo Vessels. Requires low-emitting filling technologies and vapor recovery for transferring liquids to vessels including trucks and trailers.

Rule 359, Flares and Thermal Oxidizers. Requires use of smokeless technology and avoiding flaring of high sulfur fuels, although emergency flare events are exempt from the sulfur content provisions of this rule.

Rule 370, Potential to Emit – Limitations for Part 70 Sources. Specifies actual emission level criteria below which Part 70 sources are exempt from Part 70 permit requirements.

Rule 802, Nonattainment Review. For new or modified emission sources, this rule specifies emission limits that would trigger emission offsets (25 tons/year for the nonattainment pollutants and precursors NO_x, ROC, PM₁₀, and SO_x). This rule also establishes levels that trigger Best Available Control Technology (BACT) requirements for stationary sources (25 lb/day for the nonattainment pollutants and precursors NO_x, ROC, PM₁₀, and SO_x; 55 lb/day for PM_{2.5}; and 500 lb/day for CO). New sources over these trigger levels must implement the BACT for the subject pollutants. This rule also forces new and modified sources to conduct an Air Quality Impact Analysis (AQIA) before an ATC can be issued, if stationary source emissions would be greater than: 120 lb/day for NO_x or SO_x; 80 lb/day for PM₁₀; 55 lb/day for PM_{2.5}; and 500 lb/day for CO.

Rule 805, Air Quality Impact Analysis, Modeling, Monitoring, and Air Quality Increment Consumption. This rule identifies the methodologies and standards applicable to new or modified sources when conducting an AQIA to comply with the NSR program. This regulation ensures that the proposed emissions

from the new or modified stationary source do not cause a violation of an ambient air quality standard or lead to a violation of any air quality increment defined in the rule.

Rule 810, Federal Prevention of Significant Deterioration (PSD). This rule implements the components of the federal PSD permitting program (40 CFR 52.21) that are delegated by U.S. EPA to the APCD.

Regulation XIII, Part 70 Operating Permit Program. Defines criteria for determining source applicability to obtain a Federal Title V operating permit (40 CFR Part 70). The regulation specifies permit content and requirements for Part 70 sources that may include equipment that predates or was constructed before stringent NSR programs became applicable.

4.2.3 Environmental Thresholds

Proposed Project operations would produce emissions of criteria pollutants from Project equipment and from offsite mobile emissions; could increase odor events; and could produce health risk impacts. Each of these topics can be characterized with separate thresholds. The Santa Barbara County Environmental Thresholds and Guidelines Manual (Santa Barbara County, 2015b) defines separate significance thresholds for operational activities and construction activities as follows. Thresholds for GHGs are identified in Section 4.4.3 of the EIR.

4.2.3.1 County Thresholds for Construction Air Pollutants

Emissions from construction activities are normally short-term. Currently, neither the County nor the APCD have daily or quarterly quantifiable emission thresholds established for short-term construction emissions. PM₁₀ impacts from dust emissions should be discussed and standard mitigation measures implemented, e.g., watering, as required in the Scope and Content of Air Quality Sections in Environmental Documents (SBCAPCD, 2015b) and the County Environmental Thresholds and Guidelines Manual (Santa Barbara County, 2015b).

Although quantitative thresholds of significance are not currently in place for short-term or construction emissions, the APCD requires construction projects that would emit more than 25 tons per year to obtain emission offsets under Rule 804 and would consider these emissions to be significant under CEQA. APCD Rule 202 (related to permits and offset requirements and exemptions), requires that:

Notwithstanding any exemption in these rules and regulations, if the combined emissions from all construction equipment used to construct a stationary source which requires an Authority to Construct have a projected actual in excess of 25 tons of any pollutant, except carbon monoxide, in a 12 month period, the owner of the stationary source shall provide offsets as required under the provisions of Rule 804, Emission Offsets, and shall demonstrate that no ambient air quality standard would be violated.

4.2.3.2 County Thresholds for Operational Air Pollutants

A project will not have a significant air quality effect on the environment, if operation of the project will:

- Emit (from all project sources, mobile and stationary), less than the daily triggers of: 55 lb/day for NO_x or ROC and 80 lb/day for PM₁₀ (Santa Barbara County, 2015b). Because PM₁₀ includes PM_{2.5}, emissions of PM_{2.5} are presumed to be subject to the PM₁₀ threshold;
- Emit less than 25 pounds per day of NO_x or ROC from motor vehicle trips only;
- Not cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone);

- Not allow land uses that create objectionable odors or does not expose sensitive receptors to objectionable odors;
- Not exceed the APCD health risk public notification thresholds adopted by the APCD Board for air toxics; and
- Be consistent with the adopted federal and state Air Quality Plans.

4.2.4 Environmental Impacts and Mitigation Measures

This Section assesses the proposed Project’s air quality impacts related to the construction and operation activities of the proposed Project and associated air pollutant emissions.

Applicant proposed Avoidance and Minimization Measures (AMMs) for air quality emissions (AMM AQ-1 and AQ-2), odors (AMM AQ-3), and dust abatement (AMMs AQ-1 and BIO-4) are included in Appendix C. Table 4.2-5 lists the AMMs specific to air quality.

Table 4.2-5. Applicant Proposed Avoidance and Minimization Measures Related to Air Quality

Number	Measure
Air Quality	
AQ-1	<p>Short-Term Construction Emissions.</p> <p>a. During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. The Project should water exposed unpaved traffic areas two to three times per day or as needed, and with increasing frequency when wind speed exceeds 15 miles per hour. Reclaimed water should be used if available and practicable. Soil binders may be used instead of water if practical. The amount of disturbed area will be minimized. Vehicle speeds on unpaved roads will be limited to 15 miles per hour or less. If stockpiling of fill material is required, soil stockpiled for more than two days will be covered, kept moist, or treated with soil binders to mitigate dust generation. Trucks transporting fill material to and from the site will be covered with a tarp from the point of origin, and at least six inches of freeboard space to the top of the container will be maintained. Gravel pads or shakers will be installed at external access points to prevent tracking mud onto public roads. After clearing, grading, earth moving, or excavation is completed, disturbed areas will be watered, re-vegetated, or otherwise controlled to mitigate dust generation.</p> <p>b. All non-exempt portable diesel-powered construction equipment will be registered with the state’s portable equipment registration program OR will obtain a Santa Barbara County Air Pollution Control District permit. Fleet owners of mobile construction equipment are subject to the California Air Resource Board Regulation for In-use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, § 2449), the purpose of which is to reduce diesel particulate matter and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles. For more information, please refer to the California Air Resources Board website at www.arb.ca.gov/msprog/ordiesel/ordiesel.htm. All commercial diesel vehicles are subject to Title 13, § 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading will be limited to five minutes; electric auxiliary power units will be used whenever possible.</p> <p>c. Diesel construction equipment will meet the California Air Resources Board Tier 4 Final emission standards for off-road heavy-duty diesel engines.</p>

Table 4.2-5. Applicant Proposed Avoidance and Minimization Measures Related to Air Quality

Number	Measure
AQ-2	<p>Long-Term Operational Emissions.</p> <ul style="list-style-type: none"> a. During operations, use of water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. The Project should water exposed unpaved traffic areas three times per day unless conditions do not warrant such frequency (e.g. during rainy conditions, when the soil is otherwise moist, or when soil stabilizers are effectively eliminating the need for water applications in order to control dust), and with increasing frequency when wind speed exceeds 15 miles per hour. Reclaimed water should be used if available and practicable. Apply soil stabilizers once per month unless conditions do not warrant such frequency (e.g. when previously applied soil stabilizers are continuing to work effectively to control dust). The amount of disturbed area will be minimized. Vehicle speeds on unpaved roads will be limited to 15 miles per hour or less. b. In accordance with Santa Barbara County and Santa Barbara County Air Pollution Control District requirements, Aera will provide the required emission reduction credits for stationary source pollutants. c. Operation and Maintenance equipment will meet the California Air Resources Board Tier 4 Final emission standards for off-road heavy-duty diesel engines d. Emissions will be mitigated to less than significant or to the greatest extent feasible, if less than significant cannot be achieved.
AQ-3	<p>Odors.</p> <ul style="list-style-type: none"> a. In order to mitigate odor releases from tanks due to hatch release, Aera will set up the vapor recovery system to notify the operator when the tank pressure is within ten percent of the tank relief pressure. Additionally, personal hydrogen sulfide monitors and wind socks that will be deployed onsite for employee safety will further mitigate the risk of objectionable odors leaving the Project site. b. The operator will develop an Odor Minimization Plan which will address potential odors from oil field equipment and measures to reduce or eliminate these odors. The Plan will address issues such as facility information, buffer zones, signs with contact information, logs of odor complaints, protocol for handling odor complaints and odor event investigation and methods instituted to prevent re-occurrence.

4.2.4.1 Oil Field Development & Operation

Impact AQ-1: 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.

Construction would entail a wide range of activities that includes the use of gasoline and diesel-powered heavy equipment for site preparation and grading, installation of new well equipment, paving for well pads and access roads, and installing facilities for thermal enhanced oil recovery steam generation, field systems, central processing, and other support infrastructure. Section 2 (Project Description) of this EIR describes the types of activities for site development.

These construction activities would cause emissions of air pollutants due to ground disturbance, travel on unpaved surfaces, and burning of fuels by the construction vehicles and off-road equipment. Diesel off-road and gasoline-powered construction equipment would include trucks for crews, equipment, materials, and water delivery, drill rigs, dozers, loaders, scrapers, motor graders, excavators, compactors, and rollers. Air pollutants that would be directly emitted in the exhaust from vehicles and equipment include ozone precursors (volatile organic compounds and NOx), CO, and particulate matter (PM10 and PM2.5) including DPM, and fugitive dust as particulate matter would be caused by ground-disturbing activities. Outside of work sites, exhaust emissions would be caused by vehicles transporting equipment and supplies to the site, trucks removing debris and excess spoils, and workers commuting to and from the site.

For the proposed Project, the Applicant expects over 30 years of activity would be needed to develop the site and incrementally complete drilling. Year-by-year activity levels would vary widely, and accordingly

the construction emissions would vary substantially over time. The Applicant proposes to undertake construction through two major phases. Phase I of plant and infrastructure construction would occur for approximately 3 years preceding the first steam injection and would continue for approximately 3 years after the first steam injection with continued grading of well pads and roadways, installation of intra-field gathering and distribution pipelines, installation of intra-field electrical distribution, well drilling and completion, and well hookups. This second 3-year period of Phase I would overlap with Phase II.

The Applicant predicts two different peak years of construction emissions, during which most of the well drilling and completions would occur, in Year 3 and Year 8 (as in EIR Table 2-3 and Table 2-4). The first peak would be in Year 3 (variously shown as either 2019 or year “-1” in the AQIA), and this would occur during Phase I plant and infrastructure construction. The second peak would be in Year 8, which would occur while developing the full buildout of Phase II, with the emissions primarily from drilling the remaining wells (variously shown as either 2024 or year “5” in the AQIA). Because construction-phase activities would include a combination of construction and drilling, this analysis considers the sum of these emissions in presenting the worst-case annual rate for any pollutant in any year.

The emissions for the construction equipment as provided by Applicant are based on the following assumptions:

- Diesel construction and drilling equipment will meet the California Air Resources Board Tier 4 Final emission standards for off-road heavy-duty diesel engines.
- The proposed drilling schedule would have a peak rate of 95 wells drilled per year and an annualized average rate of 27 wells drilled per year during Phase I of construction, with a maximum of two drilling rigs being located at the facility simultaneously. Only one replacement well would be drilled per year.
- Construction crews would work up to 6 working days per week for 10 hours per day. Workers would travel between the site and Santa Maria over a round-trip distance of 32.4 miles, or 16.2 miles each way, and materials and equipment would travel from a mix of origins including Bakersfield (138 miles each way) and beyond.
- Emissions are based on ARB EMFAC2014 emission factors for on-road mobile sources and use of the CalEEMod (version 2013.2.2) software for off-road construction equipment.

The detailed emissions estimates appear in the AQIA. This technical study is provided in full in Appendix E of this EIR. Table 4.2-6 summarizes the estimated annual rates of air pollutant emissions from oil field development construction activities.

Table 4.2-6. Proposed Project Construction, Estimated Peak Year Annual Emission Rates (tons per year)

Construction-Phase Sources		NOx	ROC	PM10	PM2.5	CO	SOx
	Construction Equipment	8.92	0.83	0.09	0.09	32.48	0.06
	Construction Fugitive Dust	—	—	6.81	0.68	—	—
Onsite	Well Drilling Equipment	4.34	0.96	0.13	0.13	37.43	0.08
	Well Drilling Fugitive Dust	—	—	1.49	0.15	—	—
	Replacement Well Drilling Equipment	0.05	0.01	0.002	0.002	0.43	0.001
	Replacement Well Drilling Fugitive Dust	—	—	0.012	0.001	—	—
	Well Drilling Muds (fugitive ROC)	—	7.49	—	—	—	—
Offsite	Construction Traffic (mobile)	0.87	0.06	0.04	0.04	0.60	0.00
	Well Drilling Traffic (mobile)	0.67	0.02	0.005	0.005	0.27	0.00
	Replacement Well Drilling Traffic (mobile)	0.006	0.000	0.000	0.000	0.002	0.00
Construction-Phase Emissions (annual, tons per year)		14.86	9.37	8.58	1.10	71.21	0.14
Significance Threshold (APCD Rule 202, Annual Basis)		25	25	25	25	None	25
Significant?		No	No	No	No	—	No

Source: AQIA Table 5-16 (Short Term Mitigated Construction); AQIA Attachment p.91 plus Well Drilling Mud spreadsheet.

Notes: Construction peak year of emissions occur with 95 wells drilled in 2019 (or year “-1” in the AQIA Attachment) or with 84 wells drilled in 2024 (or year “5”) for CO and SOx.

Emissions from well drilling mud based on 157.59 lb ROC/well, at 7.5 standard cubic feet of gas per barrel of mud returns.

Emissions without mitigation for fugitive dust and off-road equipment appear in AQIA Table 5-10.

Although the Santa Barbara County Environmental Thresholds and Guidelines Manual does not include quantitative thresholds of significance for short-term or construction emissions, the APCD requires construction projects that would emit more than 25 tons per year to obtain emission offsets under Rule 804, pursuant to thresholds promulgated in APCD Rule 202. The estimates in Table 4.2-6 show that mitigated oil field construction-phase activities would not exceed the applicable significance thresholds.

Fugitive Dust Control. Construction emissions presented in Table 4.2-6 incorporate the Applicant proposal to reduce emissions of fugitive dust during construction, as necessary to comply with APCD Rule 345 regarding construction activities, which prohibits visible dust emissions beyond the property line of construction, demolition, or earth moving activity. To comply with the truck hauling provisions in the rule, bulk material or soil hauling requires:

- Using properly secured tarps or cargo covering that covers the entire surface area of the load or use a container type enclosure;
- Maintaining a minimum of 6 inches of freeboard below the rim of the truck bed where the load touches the sides of the cargo area and ensure that the peak of the load does not extend above any part of the upper edge of the cargo area; or
- Watering or otherwise treating the bulk material to minimize loss of material to wind or spillage.

APCD Rule 345 also requires controlling spillage of visible material from trucks and track-out or carry-out of material, including gravel beds for egress points, wheel-washing, and applying soil binders, chemical soil stabilizers or other means of stabilizing unpaved surfaces. Visible roadway dust must also be removed at the conclusion of each work day.

The Thresholds and Guidelines Manual (Santa Barbara County, 2015b) recommends that throughout the County, dust mitigation measures should be required for all discretionary construction activities. Dust

control measures are required under the County of Santa Barbara's Grading Ordinance for most projects. Mitigation Measure (MM) AQ-1a would ensure that the PM10 emissions from construction dust are controlled in a manner consistent with the estimates presented above and consistent with APCD and County guidelines.

Construction Fleet Emissions Controls for NOx, PM10, and PM2.5. Construction emissions presented in Table 4.2-6 assume that the Applicant would reduce emissions from the diesel-powered engines used in powering the construction fleet. Mitigation Measure (MM) AQ-1b would ensure that "Tier 4 Final" engines would be used for all equipment engines during the construction and development of the proposed Project. Equipment meeting these specifications would need to be identified within contract specifications. MM AQ-1b would ensure that NOx, PM10, and PM2.5 emissions during development of the proposed Project are controlled in a manner consistent with the estimates presented above.

With the recommended mitigation measures, construction emissions would not exceed the thresholds for construction air pollutants, and at levels below the thresholds, construction activity would not result in a considerable net increase of pollutants or have the potential to violate air quality standards or contribute substantially to an existing or projected air quality violation.

Impact AQ-1 is considered potentially significant, but mitigable to a less than significant level with the implementation of Applicant proposed AMMs and MMs AQ-1a and AQ-1b (Class II).

Mitigation Measures

MM AQ-1a Onsite Dust Control. The Owner/Applicant shall comply with the following dust control requirements at all times, including weekends and holidays, throughout construction and during operation and maintenance of the oil field:

1. During clearing, grading, earth-moving, excavation, or transportation of cut or fill materials, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site and to create a crust after each day's activities cease. The Owner/Applicant should water exposed unpaved traffic areas three times per day unless conditions do not warrant such frequency (e.g., during rainy conditions, when the soil is otherwise moist, or when soil stabilizers are effectively eliminating the need for water applications in order to control dust), and with increased watering frequency whenever the wind speed exceeds 15 mph and when necessary to prevent dust from leaving the site. Reclaimed water may be used if available and practicable. However, reclaimed water should not be used in or around crops for human consumption. Soil binders may be used instead of water if practical. Apply soil stabilizers once per month unless conditions do not warrant such frequency (e.g., when previously applied soil stabilizers are continuing to work effectively to control dust).
2. Minimize the amount of disturbed area.
3. Limit on-site vehicle speeds on unpaved roads to 15 miles per hour or less.
4. If importation, exportation or stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.

5. Gravel pads shall be installed at all external access points to prevent tracking of mud onto public roads.
6. After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until the area is paved, developed or otherwise restored so that dust generation will not occur. Soil binders shall be reapplied as needed.
7. If the site is graded and left undeveloped for over four weeks, the Owner/Applicant shall immediately: (i) Seed and water to revegetate graded areas; and/or (ii) Spread soil binders; and/or; (iii) Employ any other method(s) deemed appropriate by P&D or APCD.
8. The Owner/Applicant shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. The monitor's duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District and County Planning & Development Division.

PLAN REQUIREMENTS: These dust control measures shall be noted on all grading and building plans prior to issuance of the Zoning Clearance.

TIMING: The dust control monitor shall be designated prior to issuance of the Zoning Clearance. The dust control measures shall be implemented throughout Project grading, construction, and operation.

MONITORING: P&D shall ensure measures are on plans. P&D grading and building inspectors shall spot check in the field to ensure compliance onsite. APCD inspectors shall respond to nuisance complaints.

MM AQ-1b

Performance Specifications for Construction Fleet Engines. The Owner/Applicant shall ensure that all construction equipment, drilling rig engines, and engines deployed with the drilling rigs, including those powering mud pumps and generators, shall be powered with engines certified to comply with Tier 4 Final standards, as defined in the California Emission Standards for Off-Road Compression-Ignition Engines in California Code of Regulations (CCR) Title 13, Division 3, Chapter 9, Article 4, Section 2423, or newer or more-stringent emissions performance standards.

PLAN REQUIREMENTS and TIMING: Owner/Applicant shall submit evidence of inclusion of the required specifications in construction contracts to P&D prior to issuance of the Zoning Clearance.

MONITORING: P&D permit compliance staff shall confirm provision of the required specifications.

Impact AQ-2: 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.

New facilities that are to be added by the proposed Project include numerous individual pieces of equipment that would be sources of emissions. The proposed Project would add 296 new wells to support thermally enhanced oil production (using cyclical steam injection and/or a pattern steam flood). Phasing of well drilling and completions would occur with gradually increasing operation starting in Year 3 (or 2019

in the AQIA) and continuing until Year 19 (or 2035 in the AQIA; see also EIR Table 2-3 and Table 2-4), with the first wells becoming operational by the end of Year 3. Processing facilities, storage, loading and unloading facilities, and a variety of new combustion sources, primarily for steam generation would also become operational by the end of Year 3. With the start of operations, the proposed Project would also generate emissions from onsite maintenance activities, and emissions from traffic offsite due to operations staff and light crude oil (LCO) and blended crude trucking. Workover activities would occur with one well workover crew assumed within the routine repair and maintenance activities, which are separate from replacement well drilling activities assumed as part of construction (Impact AQ-1).

The operational emissions would overlap with many years of construction emissions. Well drilling and replacement well drilling would continue during the operational phase, with a maximum of two drilling rigs being located at the facility simultaneously. Upon completion of the full buildout of Phase II, the proposed Project would facilitate a production rate of up to 10,000 barrels of oil per day (bpd). Production from the proposed 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's facilities would include multiple pieces of equipment or devices that would be subject to the air permitting requirements of the APCD. The following types of stationary sources are subject to the requirements to obtain ATC and PTO permits:

- Seven steam generators, including six steam generators fired on natural gas (each rated for 85 MMBtu/hour), blended with sweetened produced gas, plus one steam generator (65 MMBtu/hour) fired on treated desulfurized produced gas. The seven steam generators, when taken together, would operate at a maximum of 88 percent utilization, according to the Applicant's proposal to limit the heat input to the steam generators (AQIA, p.41 and p.46).
- The produced gas steam generator (65 MMBtu/hour) could require an emission control system, if necessary to stay below the allowable sulfur dioxide emission limit. Exhaust from the produced gas steam generation would be sent to a one or two stage sulfur dioxide scrubbing system using a caustic solution to strip sulfur components from the flue gas. If necessary, the treated flue stream may also be sent to a wet electrostatic precipitator for particulate matter removal.
- One emergency flare (40 MMBtu/hour) for periods of breakdown or upset, estimated not to exceed 1.5 hours per day or 180 hours per year. Emission calculations for the annual basis are based on the sulfur content of the gas flared being 80 ppm by volume as H₂S, which reflects occasional flaring of sweetened produced gas, meaning that the raw produced gas has been treated through H₂S removal. Emissions during flaring events shorter than one hour are based a scenario of flaring raw and unsweetened produced gas with 10,000 ppm total sulfur content (AQIA, p.42).
- One emergency generator engine (1,126 brake-horsepower) fired on pipeline-quality natural gas for backup electrical power, estimated not to exceed 600 hours per year (AQIA, p.43).
- Loading racks for receiving light crude oil deliveries up to 1,666 barrels per day during Phase I and 3,000 barrels per day during Phase II operations and for loading out the produced heavy crude oil at an annual average equivalent rate of 10,000 barrels per day. The loading racks would use submerged loading and have a vapor recovery efficiency of 95 percent (AQIA, p.44).
- Tanks for organic liquid storage with vapor recovery systems having a short term vapor control efficiency of 95 percent and 95 percent long term vapor collection efficiency, per APCD Rule 325.
- Fugitive leaks from equipment components handling gaseous and liquid organic compounds, subject to control and a program for inspection and maintenance under APCD Rule 331.

- Evaporative emissions of volatile organic compounds due to use of low-VOC solvents, for example in parts washers (AQIA Attachment p.50).

Operational emissions would vary widely depending on production levels and the variable pace of development of wells toward the targeted production rate of up to 10,000 bpd. Different pollutants would peak during different years. The NO_x peak year would depend on the proposed Project's changing use of on-road vehicles and the changing makeup of the transportation fleet over time. Peak daily NO_x emission from operations is forecast to occur in 2028, but overall higher levels of NO_x would occur (in 2024) due to the overlap of long-term construction activities with operational emissions. The peak year for emissions of other pollutants is forecast to occur later (2031 or 2035 in the AQIA). (Details are provided in AQIA Table 5-23, Long Term Operational Emissions after Mitigation, and AQIA Attachment p.93).

Emissions from traffic offsite and on-highway mobile sources would also increase above the existing levels. Emissions from oil transportation would increase due to delivering light crude oil by truck to the site as well as the truck transport of the blended, produced crude at a rate of up to 10,000 bpd. Emissions assume each tanker truck trip for imports of light crude oil, as diluent, and for exports of blended, produced crude would travel 140.4 miles each-way to and from Kern County. This distance is based on the Applicant's proposal to transport the diluent and produced oil to and from Aera's Belridge Producing Complex in the South Belridge Oil Field near Bakersfield. During each day of the peak year of production (2031), these tanker trucks would make up to 95 round-trips (190 one-way daily trips). The proposed Project would also add a workforce of 40 new employees as operating personnel plus approximately 75 additional contractor personnel, for well and equipment maintenance and on-going construction, who would commute to the site daily from Santa Maria or 16.2 miles each way. Emissions for on-road mobile sources are based on ARB EMFAC2014 emission factors, except for compressed natural gas (CNG) mobile tanker truck trip emissions that are based on manufacturer guarantees. The Applicant expects that all CNG-fueled tanker trucks delivering light crude from the Belridge facility to Cat Canyon would be used on the return trip to haul blended crude back to Belridge. Refueling would occur at stations that exist at some of the cities along the way, for example in Santa Maria, San Luis Obispo, or Paso Robles.

The Applicant would need to obtain ATC and PTO permits for the stationary sources subject to the New Source Review program implemented by the APCD. For the onsite stationary sources that would be subject to APCD permitting requirements, the APCD in 2016 replaced the New Source Review Rule 802 daily triggers with the following annual offset thresholds for nonattainment pollutants and precursors: 25 tons/year for NO_x, ROC, PM₁₀, and SO_x (revised by APCD Board on August 25, 2016). The County thresholds for operational air pollutants are defined in terms of daily emissions. For this reason, annual and daily emissions increases are presented separately.

The detailed emissions estimates appear in the AQIA. The AQIA technical study is provided in full in Appendix E of this EIR. Table 4.2-7 summarizes the proposed Project-related air pollutant emissions on an annual basis due to operations and maintenance, in the peak year for each pollutant. Table 4.2-8 compares the proposed Project-related average daily emissions increase with the County significance thresholds, and the daily emissions from all sources indicate that the proposed Project would exceed the County thresholds for NO_x and ROC.

Table 4.2-7. Proposed Project Operations, Annual Emissions Increase (tons per year)

Project Sources		NOx	ROC	PM10	PM2.5	CO	SOx
Onsite	Stationary Sources (proposed steam generators, wells, tanks, and fugitive leaks)	14.21	12.15	2.65	2.65	41.89	8.69
	O&M Portable and Off-road Equipment and Mobile Sources	1.44	0.37	0.05	0.04	11.66	0.03
	Solvents and Coatings	—	0.48	—	—	—	—
	O&M Fugitive Dust	—	—	0.92	0.09	—	—
Offsite	Offsite Motor Vehicle Traffic (mobile sources, except tankers)	1.05	0.05	0.15	0.06	1.06	0.01
	Offsite Motor Vehicle Traffic (mobile tankers)	1.39	0.90	0.77	0.77	1,197.54	0.15
	Offsite Paved Road Fugitive Dust	—	—	5.57	1.37	—	—
Total Proposed Project Operations Emissions (tons per year)		18.09	13.95	10.11	4.98	1,252.15	8.88

Source: AQIA Table 5-23 (Long Term Operational Emissions after Mitigation); AQIA Attachment pp.43-50 and 52.

Notes: Operational emissions on an annual basis are derived from NOx peak daily emissions to occur in 2028 and in 2031 for other pollutants. Emissions without mitigation for fugitive dust and off-road equipment appear in AQIA Table 5-22.

Table 4.2-8. Proposed Project Operations, Average Daily Emissions Increase (lb/day)

Project Sources		NOx	ROC	PM10	PM2.5	CO	SOx
Onsite	Stationary Sources (proposed steam generators, wells, tanks, and fugitive leaks)	94.92	75.83	17.46	17.46	284.03	55.07
	O&M Portable and Off-road Equipment and Mobile Sources	7.88	2.01	0.26	0.23	63.87	0.18
	Solvents and Coatings	—	2.65	—	—	—	—
	O&M Fugitive Dust	—	—	5.63	0.56	—	—
Offsite	Offsite Motor Vehicle Traffic (mobile sources, except tankers)	16.67	0.72	1.46	0.59	8.45	0.15
	Offsite Motor Vehicle Traffic (mobile tankers)	7.65	4.99	4.28	4.28	6,629.55	0.82
	Offsite Paved Road Fugitive Dust	—	—	33.95	8.33	—	—
Total Proposed Project Operations Emissions (average daily, lb/day)		127.12	86.20	63.04	31.45	6,985.90	56.22
Subtotal (excluding PERP emissions)		127.12	86.20	63.04	31.45	6,985.90	56.22
Significance Thresholds (County Threshold, Daily Basis)		55	55	80	80	None	None
Significant without Mitigation?		Yes	Yes	No	No	—	—
Effectiveness of Mitigation Measures, Applicant-proposed credits		-72.14	-31.21	—	—	—	—
Total Proposed Project Operations Emissions with Mitigation (lb/day)		54.98	54.99	—	—	—	—
Significant with Mitigation?		No	No	—	—	—	—
Subtotal (motor vehicles exhaust only)		24.86	6.03	5.77	4.90	6,640	0.98
Significance Thresholds (County Threshold, Vehicle Trips Only)		25	25	None	None	None	None
Significant?		No	No	—	—	—	—

Source: AQIA Table 5-23 (Long Term Operational Emissions after Mitigation); AQIA Attachment pp.50 and 93.

Notes: No separate quantification of PERP emissions appears in AQIA.

Operational NOx peak daily emissions to occur in 2028 and in 2031 for other pollutants.

Emissions without mitigation for fugitive dust and off-road equipment appear in AQIA Table 5-22.

The proposed Project would include an overlap of many years of construction activities with operational emissions. As discussed for Impact AQ-1, the AQIA quantifies the construction-related emissions, including well drilling, as “short-term” although over 30 years of activity would be needed to develop the site and incrementally complete drilling. The County Environmental Thresholds and Guidelines Manual (Santa Barbara County, 2015b) allow a separate discussion of “long term” or operational emissions, which are subject to the specific environmental thresholds on the foundation that operational emissions would be relatively continuous and not subject to the year-by-year variations inherent with construction. Because this proposed Project would involve a prolonged construction phase, some long-term construction-phase emissions would occur at the same time as operational emissions.

Two tables show how the daily emissions rates of overlapping operations with long-term construction could vary as presented in the AQIA. Table 4.2-9 shows the overlapping emissions for the years when the Applicant plans to have different peak years of long-term construction activity, primarily for well drilling and completion during Phase II. Motor vehicle exhaust emissions during operations would also vary and overlap with varying amounts of motor vehicle emissions resulting from the different peak years of long-term construction. Table 4.2-10 shows these overlapping emissions of ozone precursors from motor vehicle trips that would be subject to the 25 lb/day (NOx and ROC) County thresholds.

Table 4.2-9. Proposed Project Operations plus Long-Term Construction, Daily Emissions (lb/day)

Project Sources		NOx	ROC	PM10	PM2.5	CO	SOx
Year 8 (2024)	Long-Term Construction	61.59	46.46	29.37	4.05	390.19	0.82
	Operations	87.92	52.42	34.33	19.34	3,161.12	38.28
	Total Daily Emissions for 2024	149.51	98.88	63.70	23.39	3,551.31	39.10
Year 12 (2028)	Long-Term Construction	3.23	0.71	2.30	0.33	27.51	0.05
	Operations	127.13	85.68	57.63	29.79	6,289.40	56.13
	Total Daily Emissions for 2028	130.36	86.39	59.93	30.12	6,316.91	56.18
Year 15 (2031)	Long-Term Construction	7.84	8.01	4.55	0.66	58.08	0.11
	Operations	126.57	86.21	63.03	31.45	6,985.90	56.23
	Total Daily Emissions for 2031	134.41	94.22	67.58	32.11	7,043.98	56.34
Year 19 (2035)	Long-Term Construction	18.85	20.56	11.84	1.64	142.52	0.33
	Operations	121.90	85.62	58.16	29.93	6,356.14	56.13
	Total Daily Emissions for 2035	140.75	106.18	70.00	31.57	6,498.66	56.46
Total Proposed Project Operations plus Long-Term Construction (peak year)		149.51	106.18	70.00	32.11	7,043.98	56.46
Significance Thresholds (County Threshold, Daily Basis)		55	55	80	80	None	None
Significant without Mitigation?		Yes	Yes	No	No	—	—
Effectiveness of Mitigation Measures, Applicant-proposed credits		-72.14	-31.21	—	—	—	—
Additional Mitigation Measures, in MM AQ-2c		-24	-21	—	—	—	—
Total Proposed Project Daily Emissions with Mitigation (lb/day)		53.37	53.97	—	—	—	—
Significant with Mitigation?		No	No	—	—	—	—

Source: AQIA Attachment p.91 (construction); AQIA Attachment p.93 (operations), and peer-review notes (Appendix E).

Notes: Total daily emissions rates in this table are shown for certain years of Applicant-anticipated peak activities, primarily long-term well drilling and completion during Phase II (see also EIR Figure 2-6, Table 2-3 and Table 2-4). Other years would have lower emissions.

Table 4.2-10. Motor Vehicle Trip Emissions from Operations plus Long-Term Construction (lb/day)

Project Sources		NOx	ROC
Year 8 (2024)	Long-Term Construction (motor vehicles exhaust)	1.52	0.07
	Operations (motor vehicles exhaust)	24.77	3.30
	Subtotal (motor vehicles exhaust) for 2024	26.29	3.37
Year 12 (2028)	Long-Term Construction (motor vehicles exhaust)	0.05	0.00
	Operations (motor vehicles exhaust)	24.86	5.51
	Subtotal (motor vehicles exhaust) for 2024	24.91	5.51
Year 15 (2031)	Long-Term Construction (motor vehicles exhaust)	0.16	0.00
	Operations (motor vehicles exhaust)	24.31	6.03
	Subtotal (motor vehicles exhaust) for 2031	24.47	6.04
Year 19 (2035)	Long-Term Construction (motor vehicles exhaust)	0.24	0.01
	Operations (motor vehicles exhaust)	19.64	5.45
	Subtotal (motor vehicles exhaust) for 2035	19.88	5.46
Subtotal (motor vehicles exhaust) Proposed Project Operations plus Long-Term Construction (peak year)		26.29	6.04
Significance Thresholds (County Threshold, Vehicle Trips Only)		25	25
Significant without Mitigation?		Yes	No
Additional Mitigation Measures, in MM AQ-2b		up to 5.08	—
Subtotal (motor vehicles exhaust only) with Mitigation (lb/day)		21.21	—
Significant with Mitigation?		No	No

Source: AQIA Attachment pp.26 and 28 (construction); AQIA Attachment pp.43, 45 and 46 (operations), and peer-review notes (Appendix E).
 Notes: Total daily emissions rates in this table are shown for certain years of Applicant-anticipated peak activities, primarily long-term well drilling and completion during Phase II (see also EIR Figure 2-6, Table 2-3 and Table 2-4). Other years would have lower emissions.

The operational-phase emission rates presented in Tables 4.2-7 through Table 4.2-10 assume that the Applicant would implement certain emission controls and emission reduction practices. To ensure enforceability of the Applicant-proposed controls, this analysis also identifies additional mitigation measures to ensure that the proposed Project does not exceed the County daily emission thresholds for NOx, ROC, PM10, or PM2.5. The Applicant-proposed controls and the mitigation recommended by this analysis are discussed as follows.

Curtail Steam Generators. The Applicant would curtail the combined operation of the seven steam generators, so that when taken together, they would operate at a maximum of 88 percent utilization. This would reduce emissions of all products of combustion from these stationary sources, and this limitation would be made enforceable by the ATC and PTO permits from the APCD.

Use of Sweetened Produced Gas. The fuel delivered to six steam generators would be a blend of utility pipeline-quality natural gas with produced field gas sweetened onsite. The Applicant would manage the sulfur content of this fuel by processing the field gas and removing sulfur to achieve a blended sulfur content of no more than 16 ppm by volume in the fuel for six steam generators rated for 85 MMBtu/hour. The seventh steam generator would be fired on produced gas with sulfur removed to achieve a sulfur content of no more than 80 ppm by volume in the fuel. Using treated field gas as fuel in the combustion devices would avoid unnecessary emissions of SOx. These sulfur content limitations would be made enforceable by the ATC and PTO permits from the APCD.

Fugitive Dust Controls during Operations. Fugitive dust emissions during operation and maintenance activities would contribute PM10 emissions to the existing ambient air quality conditions that do not attain the state standard for PM10. The proposed Project includes paving onsite roads for dust control. The dust control measures applicable to construction would be necessary for the unpaved portions of onsite roads, and these measures would be made enforceable by Mitigation Measure (MM) AQ-1a under Impact AQ-1, which applies to construction and operations. Implementation of MM AQ-1a as recommended would also reduce operational-phase emissions and avoid excessive fugitive dust emissions during long-term operations of the proposed Project, which would reduce the Project-related PM10 emissions to the levels presented in Table 4.2-7 and Table 4.2-8.

O&M Fleet. Operational emissions assume that the Applicant would reduce emissions from the diesel-powered engines used for all O&M activities through the use of “Tier 4 Final” engines for all onsite, portable and off-road equipment. The Applicant assumes that workover activities would occur with one workover rig and mud pump in use at up to 874 hours per year, and one well servicing rig would be used up to 4,368 hours per year for routine repair and maintenance (AQIA Attachment p.21). Workover activities include precautions to prevent oil or gas coming into the wellbore or rising up through the well to the surface. To make the engine emissions controls and fleet activity assumptions enforceable, Mitigation Measure MM AQ-2a would ensure that NOx, PM10, and PM2.5 emissions from O&M equipment are controlled in a manner consistent with the emissions estimates presented in Table 4.2-7 and Table 4.2-8.

CNG Tanker Fleet and Emissions from Motor Vehicle Trips. The tanker trucks for the proposed Project would be new, Compressed Natural Gas (CNG) trucks equipped with Ultra Low NOx emission engines, as certified by the Air Resources Board. By using a CNG-fueled fleet that achieves low NOx engine exhaust performance specifications to transport light crude oil and produced oil to and from the site, offsite mobile source emissions of NOx, PM10, and PM2.5, including diesel particulate matter, from tankers would be minimized. To make this strategy enforceable and control these emissions in a manner consistent with the estimates presented above, MM AQ-2b would require all use of CNG fueled tankers for all deliveries of light crude oil and all shipments of blended, produced crude oil throughout the operational life of the proposed Project. Diesel trucks would likely be used for other miscellaneous O&M trips, such as materials deliveries and waste disposal, and mitigation would be needed to confirm that all motor vehicle NOx emissions from operations emissions plus long-term construction remain below the County’s 25 lb/day emissions threshold, as shown in Table 4.2-10. Along with the standard for CNG fueled tankers, MM AQ-2b includes a combination of activity limits and diesel engine performance specifications to avoid excessive NOx emissions due to overlapping operation and long-term construction motor vehicle trips. Heavy-duty diesel truck trips for O&M could be limited to no more than 2,440 daily miles traveled (basis: AQIA Attachment pp.43-44 at 2.9 grams NOx per vehicle-mile-traveled by diesel heavy-duty trucks in 2023 or 2024) to avoid potentially overlapping NOx emissions in excess of the County’s 25 lb/day emissions threshold, and this is recommended as an activity limit in MM AQ-2b.

Additional NOx and ROC Mitigation. With the controls described here, emissions from operations would exceed the County’s 55 lb/day emissions thresholds for NOx and ROC, according to the estimates summarized in Table 4.2-8. The Applicant-proposed strategy for mitigation is to offset these emissions by purchasing and surrendering 72.14 lb/day NOx and 31.21 lb/day ROC of stationary source emissions offsets (AQIA, p. 47). The amount of Applicant-proposed credits to be surrendered would need to be increased by an additional 24 lb/day NOx and 21 lb/day ROC to ensure that emissions from operations emissions plus long-term construction remain below the County’s 55 lb/day emissions thresholds for NOx and ROC, as shown in Table 4.2-9. Accordingly, mitigation is recommended to specify a sufficient amount NOx and ROC offsets to avoid a considerable net increase of these ozone precursor pollutants and to reduce the potential of the Project to violate air quality standards or contribute substantially to an existing

or projected air quality violation. Mitigation Measure (MM) AQ-2c is recommended to ensure that proposed Project-related operational emissions increases that are in excess of the significance thresholds would be offset to avoid long-term regional air quality impacts.

Summary of Ambient Air Quality Impacts. The ATC to be issued by the APCD and this evaluation of potential impacts to ambient air quality standards must partially rely on an air quality impact analysis (AQIA) using dispersion modeling to airborne concentrations of the Project-related pollutants. The Applicant's AQIA includes the initial impact analysis, and the APCD reviewed the technical approach and methodology and revised the modeling and emission calculations. The results of the APCD impact analysis demonstrates that emissions from the proposed Project would not cause any ambient air quality standard to be exceeded, although background concentrations of PM10 without the proposed Project do exceed the CAAQS. The modeled PM10 concentrations due to the proposed Project-related sources are well below the CAAQS. The AQIA and the APCD review of the AQIA July 2018 and October 2017, respectively) are provided in full in Appendix E of this EIR.

Impact AQ-2 is considered potentially significant, but mitigable to a less than significant level with the implementation of Applicant proposed AMMs and MMs AQ-2a, AQ-2b, and AQ-2c (Class II).

Mitigation Measures

MM AQ-2a Performance Specifications for O&M Fleet Engines. The Owner/Applicant shall allow no more than one workover rig and mud pump engine in use at a time (up to 874 hours per year) and one well servicing rig in use at a time (up to 4,368 hours per year) for routine repair and maintenance activities (AQIA Attachment p.21). The Owner/Applicant also shall ensure that all portable and off-road equipment used for onsite O&M shall be powered with engines certified to comply with Tier 4 Final standards, as defined in the California Emission Standards for Off-Road Compression-Ignition Engines in California Code of Regulations (CCR) Title 13, Division 3, Chapter 9, Article 4, Section 2423, or newer or more-stringent emissions performance standards.

PLAN REQUIREMENTS and TIMING: Owner/Applicant shall submit evidence of inclusion of the required specifications in O&M contracts to P&D prior to issuance of the Zoning Clearance.

MONITORING: P&D permit compliance staff shall confirm provision of the required specifications.

MM AQ-2b Trucking Emissions Management Plan and Performance Specifications. The Owner/Applicant shall ensure that any on-road transportation by tanker truck for deliveries of light crude oil (LCO) or for shipments of blended, produced crude oil, during the operational life of the proposed Project shall be carried by tanker trucks powered by compressed natural gas (CNG) engines, fired on pipeline-quality natural gas and certified by the manufacturer to achieve no more than a fully-loaded, trip-average NOx emissions rate of 0.1455 grams per vehicle-mile-traveled (AQIA Attachment p.45).

The Owner/Applicant shall ensure that any on-road transportation to and from the Project by heavy-duty diesel trucks for other trips such as deliveries or waste disposal, excluding those of LCO and crude oil shipments, does not exceed the following activity limit during the operational life of the Project: No more than 14 truckloads daily or no more than 2,440 daily miles traveled (AQIA Attachment p.43).

Additionally, the Owner/Applicant shall include the following engine exhaust performance requirements as specifications in contracts using on-road heavy-duty diesel trucks used for Project-related transportation: "Heavy-duty trucks shall be powered by engines certified to the Optional Low NOx emission standard of 0.10 g/bhp-hr or less NOx emissions level, for model year 2015 and subsequent years [13 CCR Section 1956.8]."

To verify compliance with the activity limit and the 25 lb/day NOx threshold for motor vehicle trips, the Owner/Applicant shall record daily and report monthly the number of truck trips to transport LCO and blended crude oil produced by the Project and for other trips. In addition, recordkeeping shall include daily miles traveled by Project LCO and blended crude oil trucks and by trucks making other trips such as deliveries or waste disposal.

PLAN REQUIREMENTS and TIMING: Owner/Applicant shall submit evidence of inclusion of the required engine specifications in all deliveries and shipments contracts to P&D prior to issuance of the Zoning Clearance, and Owner/Applicant shall submit monthly reports of all on-road deliveries and shipments, in terms of truckloads, to P&D for the project life.

MONITORING: P&D permit compliance staff shall confirm provision of the required specifications and confirm on-road transportation activity adheres to the specified limits.

MM AQ-2c

Emission Reduction Credits for Emissions Increases. Proposed Project-related emissions increases of NOx and ROC exceeding 55 lb/day could contribute substantially to an existing or projected air quality violation and could conflict with or obstruct implementation of the applicable air quality management plans. Therefore, the Owner/Applicant shall offset such Project-related incremental emissions increases of NOx and ROC by obtaining and surrendering to the APCD the following quantities of emission reduction credits, based on daily emissions from proposed Project operations that are anticipated to exceed the County thresholds of significance:

- 96.14 lb/day of NOx; and
- 52.21 lb/day ROC or VOC.

PLAN REQUIREMENTS and TIMING: The Owner/Applicant shall provide the required emission reduction credits to the APCD consistent with APCD protocols for offsets for non-exempt sources. The Owner/Applicant also shall provide copies to P&D of submittals to the APCD in compliance with this mitigation measure at the time of the submittals to APCD.

MONITORING: P&D staff shall verify the required ERCs are provided to, and approved, by APCD.

Impact AQ-3: Proposed Project activities could create objectionable odors affecting a substantial number of people.

Odors may occur during existing operations due to the fugitive emissions of hydrocarbons and compounds containing sulfur. The most common sources of odors are the vented and fugitive emissions from crude oil storage tanks, sumps and pits, well heads, and the loading facilities. In addition, produced gas contains H₂S, which is hazardous and a source of odors. Non-routine or upset conditions could occur with the proposed Project. The potential for accidental spills or releases of tank vapors is assessed in Section 4.7 of

this EIR, and these unplanned conditions could cause odors at nearby receptors. Outside of upset conditions, there would be a lower potential for objectionable odors.

The Cat Canyon Oil Field occasionally attracts complaints as a source of odors affecting the community of Sisquoc and other scattered residences, especially on non-windy days. During a six-month period within 2016, the Santa Barbara County Fire Station Number 23 received one complaint of the H₂S odors from the Cat Canyon Oil Field. (Record of Conversation with Aspen Environmental Group, 11/18/2016.) The APCD conducted a database record search at the request of the County (June 24, 2016), and found no odor complaints directed towards the existing oil and gas operations in West Cat Canyon, west of the proposed Project site, as logged with the APCD.

The proposed Project would increase the frequency of odor events due to new well drilling, development and operation of new well pad locations, and the increase in production and expansion of production facilities. These activities and new equipment would increase the number of components that could leak causing odors, and would increase the use of storage tanks, which can release odors from venting or hatch lifting. During well drilling, gas would be encountered and released from the wellbore or entrained in drilling muds, and this could release odors through the drilling mud handling system. For each of these sources, strategies like vapor recovery systems would control odors, and compliance with applicable air quality management rules and regulations would reduce the potential for excessive odors.

The Applicant's expected sulfur content for the raw or untreated produced gas is 10,000 ppm or 1 percent H₂S, and the design basis for accidents or upset conditions assessed in Section 4.7 of this EIR considers raw field gas ranging up to 100,000 ppm or 10 percent H₂S. Releasing untreated sour gas could produce detectable odors for locations within 2 miles of the source, based on analysis for a different site producing raw gas around 2 percent H₂S (PCEC Orcutt Hill, Final EIR, p.4.1-21, April 2016). Given the wide range and variability of H₂S content in the raw field gas and also the potential for leaks and venting of blended gas, releases of H₂S would need to be minimized in order to avoid potential impacts of odors and toxics (see Impact AQ-4). The APCD requirements in Rule 310 limit the release of odorous sulfur-containing compounds, including H₂S, and Rule 359 requires proper use of flaring as a means of controlling releases of raw field gas. The proposed Project includes a flare that would be used for controlling releases of raw field gas, as required by Rule 359.

The Applicant proposes to implement proposed AMM AQ-3 to avoid excessive odor releases by using the vapor recovery system on proposed storage tanks and to develop an Odor Minimization Plan to establish an odor event investigation process to prevent re-occurrence of complaints (Appendix C of this EIR).

The nearest residences to proposed Project components are primarily to the north and south-southeast on large agricultural parcels, approximately 0.4 miles away from the proposed central processing plant. Due to the relatively isolated location of the proposed Project activities, routine odors would not be expected to adversely affect a substantial number of people.

Impact AQ-3 and the potential to create objectionable odors affecting a substantial number of people is a less than significant impact (Class III).

Impact AQ-4: Proposed Project activities could expose sensitive receptors to substantial pollutant concentrations exceeding adopted health risk thresholds for air toxics.

Proposed Project activities would include many sources of organic compounds that occur naturally with petroleum hydrocarbons, some of which are hazardous air pollutants and toxic air contaminants (TAC), and use of diesel-fueled equipment and vehicles onsite and offsite would create emissions of diesel particulate matter (DPM), a known TAC.

Increased emissions of TACs and additional equipment emitting TACs can be attributed to new well drilling, development and operation of new well pad locations, and the production of oil and gas and operation of production facilities under the proposed Project. These proposed activities and new equipment would increase the potential for adverse public health risks for nearby receptors.

The Applicant’s *Air Quality Impact Analysis* includes a study of the potential health risks related to the proposed levels of air pollutant emissions. The study applies air dispersion modeling using AERMOD and the Hotspots Analysis and Reporting Program, version 2 (HARP2) to determine the downwind air pollutant concentrations caused by proposed Project-related emissions. The Health Risk Assessment (HRA) uses the quantified concentrations of toxic air contaminant emissions to predict the cancer, non-cancer acute, and chronic risk of exposure. The studies address the public health impacts at off-site locations and any on-site receptors as a result of exposure to Project-related emissions. The detailed emissions estimates appear in the AQIA. The Applicant’s HRA is within the AQIA technical study that is provided in full in Appendix E of this EIR.

The HRA for the proposed Project operational emissions includes the proposed steam generators, flare, emergency generator, loading racks, tanks, fugitive components, and onsite equipment used for drilling and other operation and maintenance activities. The off-site emissions from mobile sources from on-highway traffic for routine operation and maintenance, including emissions from tanker trucks are also included for up to 1,000 feet travel from the property boundary. Construction activities are not within the scope of the HRA.

The HRA for operational activities covers the worst-case emissions during normal and routine conditions. Accidents that create non-routine or upset conditions could also occur with the proposed Project. The potential for accidental spills or upset releases of tank vapors is assessed in Section 4.7 of this EIR, and these unplanned conditions could cause higher levels of pollutant concentrations and potential health risks than during routine operations.

Table 4.2-11 summarizes the health risk public notification thresholds adopted by the APCD Board for air toxics and the results of the APCD-reviewed HRA for operational emissions.

Table 4.2-11. Proposed Project Operations, Health Risks

Location	Proposed Project	Significant Risk Threshold	Significant?
Property Boundary, Point of Maximum Impact (PMI)			
Acute Hazard Index	0.611	1.0	No
Chronic Hazard Index	1.824	(none)	(not applicable)
Cancer Risk	335.2 per million	(none)	(not applicable)
Maximally Exposed Individual Resident (MEIR)			
Acute Hazard Index	0.145	1.0	No
Chronic Hazard Index	0.074	1.0	No
Cancer Risk	9.12 per million	10 per million	No

Source: APCD Review of ECC HRA for CEQA (October 2017).

For operational emissions that impact off-site receptors, the location of the greatest acute health hazards would occur along the western Project property boundary. (Shown in APCD Review of ECC HRA, Figure F.) The maximally exposed residential location for cancer risk and chronic health hazards would be south and east of the proposed Project property boundary. (Shown in APCD Review of ECC HRA, Figures A1 and A2 and Figures B1 to B3, respectively.)

The proposed Project's health risks would be below the risk thresholds. Cancer risk levels at the property boundary and the point of maximum impact would be an incremental probability of 335.2 per million. The maximally exposed residential location would have an incremental probability of an individual developing cancer over a lifetime of 9.12 per million, which is below the threshold of 10 in one million. Health risk hazard index levels at the maximally exposed residential location would be 0.145 for acute health hazards and 0.074 for chronic health hazards, and these levels would be below the thresholds of 1.0.

Impact AQ-4 is a less than significant impact because the proposed Project would not exceed the APCD health risk public notification thresholds adopted by the APCD Board for air toxics. The proposed Project would not create a significant impact for air quality-related health risk and would not expose sensitive receptors to substantial pollutant concentrations exceeding adopted health risk thresholds (Class III).

Impact AQ-5: Proposed Project activities could conflict with or obstruct implementation of the applicable air quality management plans.

New facilities and the proposed Project components would achieve a production rate of 10,000 bpd. This would contribute to an increase in County-wide oil and gas production, and would increase the emissions of criteria air pollutants and their precursors from onsite and offsite sources.

Proposed Project activities would be subject to APCD review through the air permitting process for new or modified stationary sources. As a result, stationary emission sources are likely to comply with all APCD policies, rules, and regulations, including federal NSPS and NESHAP requirements, and emission offset and emission control requirements made enforceable by the NSR process. The emission offset and emission control requirements are derived from the control strategies adopted within the applicable air quality management plans. Through these requirements, emissions from the new or modified stationary sources within the permitting jurisdiction of the APCD are not likely to conflict with or obstruct implementation of the applicable air quality management plans.

Emissions from sources that are not subject to direct review by the local air district and emission offset requirements, such as exempt vented or fugitive emissions, or growth in emissions from mobile or portable sources related to increasing the local rate of oil and gas production, may be inconsistent with the applicable air quality plan. Growth in emissions related to oil and gas production is not anticipated in the 2013 Clean Air Plan or the 2016 Ozone Plan, which assume that County-wide oil and gas activity remains equal to each plan's baseline level (SBCAPCD, 2015a; SBCAPCD, 2016). Because the applicable air quality management plans do not anticipate growth in oil and gas-related activities, the proposed Project-related emissions increases from exempt fugitive emissions and from mobile and portable sources that are not required to be offset by the APCD could conflict with or obstruct implementation of the applicable air quality management plans. Mitigation recommended for Impact AQ-2, specifically Mitigation Measure (MM) AQ-2c would require the Applicant to offset all proposed Project-related emissions that exceed the thresholds by surrendering emission reduction credits.

Impact AQ-5 is considered potentially significant, but mitigable to a less than significant level with the implementation of Mitigation Measure AQ-2c (Class II).

4.2.4.2 Power Line Construction and Operation

Development of the proposed Project would require construction and operation of the PG&E electrical power line to interconnect the onsite Aera-owned substation with the nearby, but offsite Sisquoc-Santa Ynez 115 kV Transmission Line. Construction of the new 0.3-mile line would include installing approximately 10 poles along existing unpaved access roads, and may require some grading and 2.1 acres of

temporary disturbance. Emissions would be caused by the off-road equipment, including a crane and cable pulling and tensioning equipment, as well as trucks to mobilize materials and crews to the power line alignment and related substations. Power line construction emissions would be in addition to those quantified for oil field development (Section 4.2.4.1).

The detailed emissions estimates appear in the AQIA. The AQIA technical study is provided in full in Appendix E of this EIR. Table 4.2-12 summarizes the estimated annual rates of air pollutant emissions from power line construction activities.

Table 4.2-12. Power Line Construction, Annual Emission Rates (tons per year)

Construction-Phase Sources	NOx	ROC	PM10	PM2.5	CO	SOx
Offsite: Construction Equipment and Fugitive Dust	0.18	0.02	0.12	0.01	0.66	< 0.01
Power Line Construction (annual, tons per year)	0.18	0.02	0.12	0.01	0.66	< 0.01
Significance Threshold (APCD Rule 202, Annual Basis)	25	25	25	25	None	25
Significant?	No	No	No	No	—	No

Source: AQIA Table 5-13 (115KV Interconnect and Substation Mitigated Construction Emissions).

Impact AQ-1: 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.

Construction of the power line would occur during the initial years of Aera Project-related construction emissions. Accordingly, power line construction activities would be subject to mitigation to ensure that overall proposed Project construction emissions do not exceed the thresholds for construction air pollutants. With mitigation to reduce construction emissions to levels below the thresholds, construction activity would not result in a considerable net increase of pollutants or have the potential to violate air quality standards or contribute substantially to an existing or projected air quality violation. **Implementation of MM AQ-1a and MM AQ-1b would reduce power line construction emissions to ensure that this impact would be less than significant with mitigation (Class II).**

Impact AQ-2: 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.

Operation of the power line, including maintenance, monitoring and controls, would be conducted by local electric utility personnel. Power line operation and maintenance crews would occasionally use on-road vehicles and off-road equipment to ensure reliable operation and make repairs. No stationary sources of air pollutants would be used for operation of the power line. Operation of the power line would not result in any notable incremental increase in O&M emissions in addition to those of the proposed Project. **Operation of the power line would not result in a considerable net increase of pollutants, and this impact would be less than significant (Class III).**

Impact AQ-3: Proposed Project activities could create objectionable odors affecting a substantial number of people.

Construction of the power line would create emissions of diesel exhaust that would be temporary and would disperse rapidly. Operation of the transmission line would not result in any notable incremental increase in O&M emissions. **The potential for the power line to create objectionable odors affecting a substantial number of people would be less than significant (Class III).**

Impact AQ-4: Proposed Project activities could expose sensitive receptors to substantial pollutant concentrations exceeding adopted health risk thresholds for air toxics.

Construction of the power line would generate toxic air contaminants routinely found in the exhaust of gasoline powered motor vehicles and of diesel-fueled equipment, including DPM. Construction would temporarily bring diesel-powered equipment to the alignment near the edge of the Aera property boundary. Short-term emissions associated with power line construction would be distributed between the pole sites and substations, and at any single location, the emissions would not occur for long. This minimizes the potential that any location would be exposed to substantial pollutant concentrations. The power line would not create any permanent sources of pollutants or new stationary sources of emissions that could expose sensitive receptors to substantial pollutant concentrations. **The potential for the power line to expose receptors to substantial pollutant concentrations would be less than significant (Class III).**

Impact AQ-5: Proposed Project activities could conflict with or obstruct implementation of the applicable air quality management plans.

The power line would not create long-term growth in emissions or add any new stationary sources of emissions that could conflict with or obstruct implementation of the applicable air quality management plans. Construction of the power line would be subject to APCD rules regarding nuisances and odors. Therefore, there would be no potential impact related to the applicable air quality management plan.

4.2.4.3 Natural Gas Pipeline Construction and Operation

Development of the proposed Project would require construction and operation of the SoCalGas natural gas pipeline to deliver natural gas to the Aera site. Construction of the new 14-mile, 8-inch pipeline would require trenching and horizontal directional drilling and boring techniques along existing public utility ROW and under existing paved road beds and shoulders. Construction activities would require 6.4 acres of ground disturbance and excavation of approximately 30,000 cubic yards of soil. Emissions would be caused by the off-road equipment, including backhoe/loaders, tractors, sweepers, cranes, compactors, drill rigs or augers and boring equipment, as well as trucks to haul materials and crews to the pipeline alignment. Natural gas pipeline construction emissions would be in addition to those quantified for oil field development (Section 4.2.4.1).

The detailed emissions estimates appear in the AQIA. The AQIA technical study is provided in full in Appendix E of this EIR. Table 4.2-13 summarizes the estimated annual rates of air pollutant emissions from pipeline construction activities.

Table 4.2-13. Natural Gas Pipeline Construction, Annual Emission Rates (tons per year)

Construction-Phase Sources	NOx	ROC	PM10	PM2.5	CO	SOx
Offsite: Construction Equipment and Fugitive Dust	2.89	0.53	1.5	0.21	24.9	0.04
Natural Gas Pipeline Construction (annual, tons per year)	2.89	0.53	1.5	0.21	24.9	0.04
Significance Threshold (APCD Rule 202, Annual Basis)	25	25	25	25	None	25
Significant?	No	No	No	No	—	No

Source: AQIA Table 5-12 (14-Mile Fuel Line Mitigated Construction Emissions).

Impact AQ-1: 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.

Construction of the natural gas pipeline would occur during the initial years of Aera Project-related construction emissions. Accordingly, pipeline construction activities would be subject to mitigation to ensure that overall proposed Project construction emissions do not exceed the thresholds for construction air pollutants. With mitigation to reduce construction emissions to levels below the thresholds, construction activity would not result in a considerable net increase of pollutants or have the potential to violate air quality standards or contribute substantially to an existing or projected air quality violation. **Implementation of MM AQ-1a and MM AQ-1b would reduce pipeline construction emissions to ensure that this impact would be less than significant with mitigation (Class II).**

Impact AQ-2: 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.

Operation of the natural gas pipeline, including maintenance, monitoring and controls, would be conducted by local gas utility personnel. Natural gas pipeline operation and maintenance crews would occasionally use on-road vehicles and off-road equipment to ensure reliable operation and make repairs. No stationary sources of air pollutants would be used for operation of the pipeline. Operation of the natural gas pipeline would not result in any notable incremental increase in O&M emissions in addition to those of the proposed Project. **Operation of the natural gas pipeline would not result in a considerable net increase of pollutants, and this impact would be less than significant (Class III).**

Impact AQ-3: Proposed Project activities could create objectionable odors affecting a substantial number of people.

Construction of the natural gas pipeline would create emissions of diesel exhaust, and the utility pipeline would carry odorized natural gas to the Aera Project site. During construction, activities would be temporary and any odors would disperse rapidly and, therefore, would not create objectionable odors affecting a substantial number of people. Operation of the natural gas pipeline would not result in any notable incremental increase in O&M emissions. **The potential for the pipeline to create objectionable odors affecting a substantial number of people would be less than significant (Class III).**

Impact AQ-4: Proposed Project activities could expose sensitive receptors to substantial pollutant concentrations exceeding adopted health risk thresholds for air toxics.

Construction of the natural gas pipeline would generate toxic air contaminants routinely found in the exhaust of gasoline powered motor vehicles and of diesel-fueled equipment, including DPM. Construction would temporarily bring diesel-powered equipment to the public utility ROW, which crosses through a mix of land uses including residential areas. Short-term emissions associated with construction would be distributed across the various staging and work areas, and the activities would be variable in timing. Equipment would need to frequently move between work areas. For any single location, the emissions would not occur for long, and this minimizes the potential that any location would be exposed to substantial pollutant concentrations. The natural gas pipeline would not create any permanent sources of pollutants or new stationary sources of emissions that could expose sensitive receptors to substantial pollutant concentrations. **The potential for the pipeline to expose receptors to substantial pollutant concentrations would be less than significant (Class III).**

Impact AQ-5: Proposed Project activities could conflict with or obstruct implementation of the applicable air quality management plans.

The natural gas pipeline would not create long-term growth in emissions or add any new stationary sources of emissions that could conflict with or obstruct implementation of the applicable air quality management plans. Construction of the natural gas pipeline would be subject to APCD rules regarding nuisances and odors. Therefore, there would be no potential impact related to the applicable air quality management plan.

4.2.5 Cumulative Effects

The geographic area of analysis for cumulative air quality impacts is the South Central Coast air basin, because the vast majority of project-related and cumulative project emissions would be confined to the region. Cumulative effects may also be experienced within the immediate vicinity of the sources.

As listed in Section 3.0, Cumulative Scenario, Table 3-2, and shown in Figure 3-1, the cumulative projects that would also cause air pollutant emissions within the immediate area of Aera Project-related activities, include the following. In addition, there are several oil and gas projects near Garey that are either currently under construction or proposed, involving facility replacement/upgrades. The proposed ExxonMobil interim trucking project and the Plains Pipeline replacement project would introduce additional truck traffic and construction traffic to the region, but neither cumulative project would permanently increase motor vehicle emissions on the local roadways servicing the cumulative projects noted below.

- Cumulative Project 1, ERG West Cat Canyon Revitalization Plan Project, 233 wells steam flooded.
- Cumulative Project 3, PetroRock UCCB Production Plan, 231 wells cyclic steaming.
- Cumulative Project 4, ERG Foxen Petroleum Pipeline.

Construction. Cumulatively adverse air quality impacts would occur if the projects identified above were constructed concurrently with the proposed 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. Mitigation identified for Project-related construction emissions (Impact AQ-1) would avoid significant levels of ozone precursor and PM10 emissions during project-specific development activities, and this mitigation would alleviate the potential for a cumulative impact. Additionally, a long-term cumulative impact would not be likely because the peak levels of construction-phase emissions would occur during limited durations as the project would incrementally complete drilling, and construction emission would cease at the end of construction. With implementation of the recommended mitigation, the Project contribution toward cumulative impacts during construction would be less than significant.

Operation and Maintenance. A significant cumulative air quality impact could occur if any project's total emissions of PM10 or ozone precursors (NO_x 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 emis-

sions from the oil and gas sector 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 toward a cumulative impact to a less than significant level.

The potential for a significant cumulative air quality impact to localized air pollution levels is limited because the cumulative scenario includes no new residential projects near the proposed Project area. The operation and maintenance emissions from cumulative oil and gas projects, especially those within 0.5 mile of a sensitive receptor, would contribute to a localized increase of pollutants that is potentially significant (Impact AQ-2). Cumulative projects would also contribute to cumulative impacts associated with odors (Impact AQ-3) and air toxics (Impact AQ-4). Mitigation would alleviate the cumulative impacts so that the proposed Project contribution toward cumulative impacts during the operational life of the project would be less than significant with the implementation of the recommended mitigation.

4.2.6 Mitigation Monitoring Program

Table 4.2-14. Mitigation Monitoring and Reporting Plan

MM #	MM Title	Monitoring/ Reporting Action	Timing & Method of Verification	Agency or County Responsibilities	Applicant Responsibilities
Air Quality					
AQ-1a	Onsite Dust Control	Include dust control requirements on construction plans	Applicant submits plans including dust control requirements	County reviews plans, and inspects Project activities for proper implementation	Implement dust controls and prevent transport of dust offsite during all Project phases.
AQ-1b	Performance Specifications for Construction Fleet Engines	Include engine exhaust performance specifications with contracts	Applicant submits contracts including engine exhaust performance specifications	County inspects construction activity and reviews engine exhaust performance specifications in contracts	Implement construction activity limit and engine exhaust performance specifications.
AQ-2a	Performance Specifications for O&M Fleet Engines	Include engine exhaust performance specifications with contracts	Applicant submits contracts including engine exhaust performance specifications	County inspects O&M activity and reviews engine exhaust performance specifications in contracts	Implement O&M activity limit and engine exhaust performance specifications.
AQ-2b	Trucking Emissions Management Plan and Performance Specifications	Include CNG tanker truck engine exhaust performance specifications and trucking activity limit with contracts	Applicant submits contracts including engine exhaust performance specifications and records and submits reports of on-road deliveries, shipments, and other trucking	County inspects tanker truck activity and reviews engine exhaust performance specifications in contracts and reviews reports of on-road deliveries, shipments, and other trucking County consults with APCD on any change	Implement tanker truck activity limit and engine exhaust performance specifications.
AQ-2c	Emission Reduction Credits for Emissions Increases	Obtain evidence of surrendered emission reduction credits	Applicant submits evidence of surrendering emission reduction credits	County reviews Applicant evidence and APCD response to surrendering emission reduction credits	Obtain and surrender emission reduction credits.