Appendix B

Air Quality and Greenhouse Gases Technical Memorandum

MEMORANDUM

To:	Shelly Amrhein, Department of Water Resources
From:	Elena Nuño, Dudek
Subject:	Air Quality and Greenhouse Gas Emissions Technical Memorandum for the Modesto Irrigation District Claribel Substation Site Project
Date:	January 4, 2023
Attachments:	A – Construction Schedule and Equipment B – CalEEMod Construction Results C – Permitting Calculations D – DWR GHG Consistency Determination

This memorandum estimates criteria air pollutant and greenhouse gas (GHG) emissions and evaluates potential associated impacts from construction and operation of the Modesto Irrigation District Claribel Substation Site Project (proposed project or project).

The contents and organization of this memorandum are as follows: (1) project understanding; (2) air quality assessment, including a brief environmental and regulatory setting, criteria for assessment, and impact analysis; (3) GHG emissions assessment, including a brief environmental and regulatory setting, criteria for assessment, and impact analysis; and (4) references cited.

1 Project Understanding

California Assembly Bill (AB) 205 and AB 209 created a state-led Strategic Reliability Reserve (SRR) to be developed by the California Department of Water Resources (DWR) in conjunction with its sister state agencies, California Energy Commission (CEC) and the California Air Resources Board (CARB), to be used only in extreme events, such as heat waves, and only as a last resort.

The proposed project would include installation of 123 natural gas generators manufactured and produced by Enchanted Rock, LLC. The generators would be installed in 25 sets arranged in rows; 24 rows would contain five generator units, and one would contain three units. Associated infrastructure would also be installed, including 25 transformers and 25 generator step-up transformers (GSUs). Each of the generator sets (gensets) would be identical and have an engine rating of 673 horsepower. Operations of the gensets would be installed to provide back-up emergency power in the event the California Independent System Operator (CAISO)-controlled grid cannot support periods of peak demand, or to prevent grid failure during emergency periods such as extreme weather events. When in operation, the gensets would operate in grid synchronous mode at 400 kilowatt electric (kWe). The installed gensets would be capable of delivering emergency power at any time, but annual operations are not expected to exceed 300 hours per year. This would include monthly tests that are included as part of standard operations. Air permitting for the project will be based on up to 1,000 hours per year.

2 Air Quality

2.1 Environmental and Regulatory Setting

2.1.1 Environmental Setting

The proposed project is located within the San Joaquin Valley Air Basin (SJVAB) under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD).

Air pollution in the SJVAB can be attributed to both human-related (anthropogenic) and natural (non-anthropogenic) activities that produce emissions. Air pollution from significant anthropogenic activities in the SJVAB includes a variety of industrial-based sources as well as on- and off-road mobile sources.

Climate and Topography

The following information is excerpted from the most recent version of the SJVAPCD Guide for Assessing, and Mitigating Air Quality Impacts (GAMAQI) adopted in March 2015 (SJVAPCD 2015a).

The SJVAB has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Basin averages over 260 sunny days per year. The SJVAB is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the SJVAB form natural horizontal barriers to the dispersion of air contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Southeast Desert Air Basin portion of Kern County. As the wind moves through the Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

Generally, the temperature of air decreases with height, creating a gradient from warmer air near the ground to cooler air at elevation. This gradient of cooler air over warm air is known as the environmental lapse rate. Inversions occur when warm air sits over cooler air, trapping the cooler air near the ground. These inversions trap pollutants from dispersing vertically and the mountains surrounding the San Joaquin Valley trap the pollutants from dispersing horizontally. Strong temperature inversions occur throughout the SJVAB in the summer, fall, and winter. Daytime temperature inversions occur at elevations of 2,000 to 2,500 feet above the San Joaquin Valley floor during the summer and at 500 to 1,000 feet during the winter. The result is a relatively high concentration of air pollution in the valley during inversion episodes. These inversions cause haziness, which in addition to moisture may include suspended dust, a variety of chemical aerosols emitted from vehicles, particulates from wood stoves, and other pollutants. In the winter, these conditions can lead to carbon monoxide "hotspots" along heavily traveled roads and at busy intersections. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NO_x), which results in the formation of ozone.

Because of the prevailing daytime winds and time-delayed nature of ozone, concentrations are highest in the southern portion of the Basin. Summers are often periods of hazy visibility and occasionally unhealthful air, while winter air quality impacts tend to be localized and can consist of (but are not exclusive to) odors from agricultural operations; soot or smoke around residential, agricultural, and hazard-reduction wood burning; or dust near mineral resource recovery operations.

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include ozone (O_3) nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter 10 microns or smaller (PM_{10}), particulate matter 2.5 microns or smaller ($PM_{2.5}$), and lead. ROGs (also referred to as volatile organic compounds [VOCs])[1] and NO_x are also important because they are precursors to O_3. These pollutants are discussed in the following paragraphs.[2]

Ozone. O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly NO_x and ROGs. The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere ozone layer (stratospheric O_3) and at the Earth's surface in the troposphere (ground-level O_3).[3] The O_3 that the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good," O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013).

Inhalation of O_3 causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms. Exposure to O_3 can reduce the volume of air that the lungs breathe in, thereby causing

1 The SJVAPCD threshold is set for ROG. However, ROG and VOC are generally considered equivalent for environmental analyses; as such, ROG and VOC are used interchangeably in this analysis.

2 The descriptions of the criteria air pollutants and associated health effects are based on the U.S. Environmental Protection Agency's "Criteria Air Pollutants" (EPA 2022a), as well as the California Air Resources Board's "Glossary" (CARB 2019a) and CARB's "Common Air Pollutants" (CARB 2022a).

3 The troposphere is the layer of the Earth's atmosphere nearest to the surface of the Earth. The troposphere extends outward about 5 miles at the poles and about 10 miles at the equator.

shortness of breath. O_3 in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. The occurrence and severity of health effects from O_3 exposure vary widely among individuals, even when the dose and the duration of exposure are the same. Research shows adults and children who spend more time outdoors participating in vigorous physical activities are at greater risk from the harmful health effects of O_3 exposure. While there are relatively few studies on the effects of O_3 on children, the available studies show that children are no more or less likely to suffer harmful effects than adults. However, there are a number of reasons why children may be more susceptible to O_3 and other pollutants. Children and teens spend nearly twice as much time outdoors and engaged in vigorous activities as adults. Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults. Also, children are less likely than adults to notice their own symptoms and avoid harmful exposures. Further research may be able to better distinguish between health effects in children and adults. Children, adolescents, and adults who exercise or work outdoors, where O_3 concentrations are the highest, are at the greatest risk of harm from this pollutant (CARB 2019b).

Nitrogen Dioxide. NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO), which is a colorless, odorless gas. NO_x plays a major role, together with ROGs, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers. NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections (CARB 2019c).

A large body of health science literature indicates that exposure to NO_2 can induce adverse health effects. The strongest health evidence, and the health basis for the ambient air quality standards for NO_2, results from controlled human exposure studies that show that NO_2 exposure can intensify responses to allergens in allergic asthmatics. In addition, a number of epidemiological studies have demonstrated associations between NO_2 exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses. Infants and children are particularly at risk because they have disproportionately higher exposure to NO_2 than adults due to their faster breathing rate for their body weight and their typically greater outdoor exposure duration. Several studies have shown that long-term NO_2 exposure during childhood, the period of rapid lung growth, can lead to smaller lungs at maturity in children with higher levels of exposure compared to children with lower exposure levels. In addition, children with asthma have a greater degree of airway responsiveness compared with adult asthmatics. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (CARB 2019c).

Carbon Monoxide. CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the Project location, automobile exhaust accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

CO is harmful because it binds to hemoglobin in the blood, reducing the ability of blood to carry oxygen. This interferes with oxygen delivery to the body's organs. The most common effects of CO exposure are fatigue, headaches, confusion and reduced mental alertness, light-headedness, and dizziness due to inadequate oxygen delivery to the brain. For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress. Inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance. Unborn babies whose mothers experience high levels of CO exposure during pregnancy are at risk of adverse developmental effects. Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO (CARB 2019d).

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

Controlled human exposure and epidemiological studies show that children and adults with asthma are more likely to experience adverse responses with SO_2 exposure, compared with the non-asthmatic population. Effects at levels near the 1-hour standard are those of asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness of breath, and chest tightness, especially during exercise or physical activity. Also, exposure at elevated levels of SO_2 (above 1 part per million [ppm]) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality. Older people and people with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most likely to experience these adverse effects (CARB 2019e).

SO_2 is of concern both because it is a direct respiratory irritant and because it contributes to the formation of sulfate and sulfuric acid in particulate matter (NRC 2005). People with asthma are of particular concern, both because they have increased baseline airflow resistance and because their SO_2-induced increase in airflow resistance is greater than in healthy people, and it increases with the severity of their asthma (NRC 2005). SO_2 is thought to induce airway constriction via neural reflexes involving irritant receptors in the airways (NRC 2005).

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. PM_{10} consists of particulate matter that is 10 microns or less in diameter, which is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. $PM_{2.5}$ consists of particulate matter that is 2.5 microns or less in diameter, which is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and ROG.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the bloodstream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissue. Suspended particulates also damage and discolor surfaces on which they settle and produce haze and reduce regional visibility.

A number of adverse health effects have been associated with exposure to both $PM_{2.5}$ and PM_{10}. For $PM_{2.5}$, short-term exposures (up to 24-hour duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases. In addition, of all the common air pollutants, $PM_{2.5}$ is associated with the greatest proportion of adverse health effects related to air pollution, both in the United States and worldwide, based on the World Health Organization's Global Burden of Disease Project. Short-term exposures to PM_{10} have been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to hospitalization and emergency department visits (CARB 2017a).

Long-term exposure (months to years) to $PM_{2.5}$ has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children. The effects of long-term exposure to PM_{10} are less clear, although several studies suggest a link between long-term PM_{10} exposure and respiratory mortality. The International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer (CARB 2017a).

Non-Criteria Air Pollutants

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of (1) risk identification and (2) risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health

effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Diesel Particulate Matter. Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90% of DPM is less than 1 micrometer in diameter (about 1/70th the diameter of a human hair), and thus is a subset of $PM_{2.5}$ (CARB 2019f). DPM is typically composed of carbon particles ("soot," also called black carbon, or BC) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene (CARB 2019f). The CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM; 17 CCR 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars and off-road diesel engines, including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000). Because it is part of $PM_{2.5}$, DPM also contributes to the same noncancerous health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB 2019f). Those most vulnerable to noncancerous health effects are children whose lungs are still developing and the elderly who often have chronic health problems.

Odorous Compounds. Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., a coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. In a phenomenon known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

2.1.2 Regulatory Setting

The SJVPACD regulates air quality in eight counties including: Fresno, Kern (western and central), Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. The SJVAPCD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in the SJVAB.

Attainment Status

Pursuant to the 1990 federal Clean Air Act amendments, the United States Environmental Protection Agency (EPA) classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the national ambient air quality standards (NAAQS) have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant.

If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are re-designated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "nonattainment," but based on California Ambient Air Quality Standards (CAAQS) rather than the NAAQS. Table 1 depicts the current attainment status of the project site with respect to the NAAQS and CAAQS.

Table 1. San Joaquin Valley Air Basin Attainment Status

Pollutant	Designation/Classification	
	National Designation	California Designation
Ozone (O_3) – 1-hour	No national standard[1]	**Nonattainment/Severe**
Ozone (O_3) – 8-hour	**Nonattainment/Extreme[2]**	**Nonattainment**
Nitrogen dioxide (NO_2)	Unclassifiable/attainment	Attainment
Carbon monoxide (CO)	Unclassifiable/attainment	Attainment
Sulfur dioxide (SO_2)	Unclassifiable/attainment	Attainment
Respirable particulate matter (PM_{10})	Attainment (Maintenance)[3]	**Nonattainment**
Fine particulate matter ($PM_{2.5}$)	**Nonattainment[4]**	**Nonattainment**
Lead (Pb)[5]	Unclassifiable/attainment	Attainment
Sulfates (SO_4)	No national standard	Attainment
Hydrogen sulfide (H_2S)	No national standard	Unclassified
Vinyl chloride[5]	No national standard	No designation
Visibility-reducing particles	No national standard	Unclassified

Sources: SJVAPCD 2022
Notes: Attainment = meets the standards; Attainment (maintenance) = achieve the standards after a nonattainment designation; Nonattainment = does not meet the standards; Unclassified or unclassifiable = insufficient data to classify; Unclassifiable/ attainment = meets the standard or is expected to be meet the standard despite a lack of monitoring data.

1 Effective June 15, 2005, the EPA revoked the national 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the SJVAB as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan (SJVAPCD 2004) on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

2 Though the San Joaquin Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved San Joaquin Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).

3 On September 25, 2008, EPA re-designated the San Joaquin Valley to attainment for the PM_{10} NAAQS and approved the PM_{10} Maintenance Plan.

4 The San Joaquin Valley is designated nonattainment for the 1997 $PM_{2.5}$ NAAQS. EPA designated the San Joaquin Valley as nonattainment for the 2006 $PM_{2.5}$ NAAQS on November 13, 2009 (effective December 14, 2009).

5 CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined.

In summary, the EPA has designated the SJVAB as a nonattainment area for the national 8-hour O_3 standard, and CARB has designated the SJVAB as a nonattainment area for the California 1-hour and 8-hour O_3 standards. The SJVAB has been designated as a nonattainment area for the California 24-hour and annual PM_{10} standards, a nonattainment area for the national 24-hour and annual $PM_{2.5}$ standards, and as a nonattainment area for the California annual $PM_{2.5}$ standard. The SJVAB is designated as unclassified or attainment for all other criteria air pollutants.

Air Quality Plans

The SJVAPCD has prepared several air quality attainment plans to achieve the O_3 and particulate matter standards, the most recent of which include the *2020 Reasonably Available Control Technology Demonstration for the 2015 8-Hour Ozone Standard, 2016 Plan for the 2008 8-Hour Ozone Standard*, *2014 Reasonably Available Control Technology Demonstration for the 8-Hour Ozone State Implementation Plan*, *2013 Plan for the Revoked 1-Hour Ozone Standard*, *2007 PM_{10} Maintenance Plan and Request for Redesignation, 2012 $PM_{2.5}$ Plan*, *2015 Plan for the 1997 $PM_{2.5}$ Standard*, *2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard*, and the *2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards*. The SJVAPCD also released its *Proposed 2022 Plan for the 2015 8-Hour Ozone Standard* on November 15, 2022. The Proposed Plan will be considered for adoption on December 15, 2022.

The SJVAPCD's primary means of implementing air quality plans is by adopting and enforcing rules and regulations. Stationary sources within the jurisdiction are regulated by the SJVAPCD's permit authority over such sources and through its review and planning activities.

Applicable Laws, Regulations, Ordinances, and Standards

The following regulations would apply to the proposed project.

Federal Clean Air Act. The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The EPA is responsible for implementing most aspects of the Clean Air Act, including setting National Ambient Air Quality Standards (NAAQS) for major air pollutants; setting hazardous air pollutant (HAP) standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric O_3 protection measures, and enforcement provisions. Under the Clean Air Act, NAAQS are established for the following criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

Federal Hazardous Air Pollutants – National Emission Standards for Hazardous Air Pollutants (HAPs). The 1977 federal Clean Air Act amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants (HAPs) to protect public health and welfare. HAPs include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 federal Clean Air Act Amendments, which expanded the control program for HAPs, 187 substances and chemical families were identified as HAPs.

California Clean Air Act. The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS.

California Air Toxics Program. The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California TAC list identifies more than 200 pollutants, for a subset of which carcinogenic and noncarcinogenic toxicity criteria have been established pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. In 1987, the California State Legislature (Legislature) enacted the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years. TAC emissions from individual facilities are quantified and prioritized. High-priority facilities are required to perform a health risk assessment (HRA), and if specific thresholds are exceeded, the facility operator is required to communicate the results to the public in the form of notices and public meetings.

San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation II Permits, Rule 2010 Permits Required Rule. The purpose of this rule is to require any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate.

SJVAPCD Regulation II Permits, Rule 2201 New and Modified Stationary Source Review Rule. The purpose of this rule is to provide for the following: (1) The review of new and modified Stationary Sources of air pollution and to provide mechanisms including emission trade-offs by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards; and (2) No net increase in emissions above specified thresholds from new and modified Stationary Sources of all nonattainment pollutants and their precursors.

SJVAPCD Regulation IV Prohibitions, Rule 4001 New Source Performance Standards. The purpose of this rule is to incorporate the New Source Performance Standards from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR), which requires all new sources of air pollution and modification of existing sources of air pollution to comply with standards, criteria, and requirements set forth therein.

SJVAPCD Regulation IV Prohibitions, Rule 4002 National Emission Standards for Hazardous Air Pollutants. This rule incorporates the National Emission Standards for HAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the National Emission Standards for HAPs for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, CFR. All sources of hazardous air pollution shall comply with the standards, criteria, and requirements set forth therein.

SJVAPCD Regulation IV Prohibitions, Rule 4101 Visible Emissions. The purpose of this rule is to prohibit the emissions of visible air contaminants to the atmosphere.

SJVAPCD Regulation IV Prohibitions, Rule 4102 Nuisance. The purpose of this rule is to protect the health and safety of the public.

SJVAPCD Regulation IV Prohibitions, Rule 4701 Internal Combustion Engines – Phase 1. The purpose of this rule is to limit the emissions of NO_x, CO, VOC, particulate matter (PM), and SO_x from internal combustion engines.

SJVAPCD Regulation IV Prohibitions, Rule 4702 Internal Combustion Engines. The purpose of this rule is to limit the emissions of NO_x, CO, VOC, PM, and SO_x from internal combustion engines.

SJVAPCD Regulation VIII, Fugitive Dust Prohibitions, Rule 8021. Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities. The purpose of this rule is to limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities. The rule outlines Dust Control Plan requirements for certain applicable construction activities.

2.2 Criteria for Assessment

2.2.1 Self-Certification

AB 205 establishes a process to streamline new energy projects by exempting the projects from the California Environmental Quality Act (CEQA) and allowing DWR to self-certify certain energy generation projects and to establish a certification process requiring applications to be submitted to the CEC.

2.2.2 Thresholds of Significance

As discussed above, the proposed project is exempt from CEQA, however, the self-certification process is intended to be protective of air quality. As such, the following thresholds of significance, which are typically used in CEQA analysis are informative for determining potential air quality impacts. The SJVAPCD recommends that its quantitative air pollution thresholds (shown in Table 2) be used to determine the significance of project emissions under CEQA. If a project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts.

Table 2. SJVAPCD CEQA Significance Thresholds for Criteria Pollutants

Pollutant	Construction Emissions (tons per year)	Operational Emissions (tons per year)	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
ROG	10	10	10
NO_x	10	10	10
CO	100	100	100
SO_x	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Source: SJVAPCD 2015a.

The SJVAPCD has determined that use of District Rule 2201 (New Source Review -NSR) Offset thresholds as the SJVAPCD thresholds of significance for criteria pollutants under CCR Section15064.7 is an appropriate and effective means of promoting consistency in significance determinations within the environmental review process and is applicable to both stationary and non-stationary emissions sources.

NSR is a major component of the SJVAPCD's attainment strategy as it relates to growth. It applies to new and modified stationary sources of air pollution. NSR provides mechanisms, including emission trade-offs, by which Authorities to Construct such sources may be granted, without interfering with the attainment or maintenance of Ambient Air Quality Standards. District implementation of NSR ensures that there is no net increase in emissions above specified thresholds from new and modified Stationary Sources for all nonattainment pollutants and their precursors.

Under NSR, all new permitted sources (emission units) with emission increases exceeding two (2) pounds per day, for any criteria pollutant is required to implement best available control technology (BACT).

Ambient Air Quality Impacts

The thresholds of significance for ambient air quality are based on the CAAQS and NAAQS, whereby a project would be considered to have a significant impact if its emissions are predicted to cause or contribute to a violation of an ambient air quality standard by exceeding any CAAQS or NAAQS (SJVAPCD 2015a). The SJVAPCD recommends that an Ambient Air Quality Assessment be performed when on-site emissions of any criteria pollutant would equal or exceed any applicable threshold of significance for criteria pollutants or 100 pounds per day of any criteria pollutant (SJVAPCD 2015a). In the Ambient Air Quality Assessment, air pollutant concentrations are determined through air quality dispersion modeling, added to the corresponding background level, and compared to the relevant CAAQS and/or NAAQS. If the air pollutant concentrations plus background levels, however, would exceed a CAAQS or NAAQS, the SJVAPCD recommends that specified significant impact levels (SILs) be applied to the modeled concentrations to assess whether a project's emissions would contribute substantially to an existing violation of the CAAQS or NAAQS (SJVAPCD 2019).

Expose Sensitive Receptors to Substantial Pollutant Concentrations

In addition to the annual emissions mass thresholds described in Table 2, the SJVAPCD has also established screening criteria to determine whether a project would result in a CO hotspot at affected roadway intersections (SJVAPCD 2015a). If neither of the following criteria is met at any of the intersections affected by the project, the project would result in no potential to create a violation of the CO standard:

- A traffic study for the project indicates that the level of service (LOS) on one or more streets or at one or more intersections in the project site will be reduced to LOS E or F.
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at more or more intersections in the project site.

The SJVAPCD has established thresholds of significance for combined TAC emissions from the operations of both permitted and non-permitted sources (SJVAPCD 2015a). projects that have the potential to expose the public to TACs in excess of the following thresholds would be considered to have a significant air quality impact:

- Probability of contracting cancer for the maximally exposed individual equals or exceeds 20 in 1 million people[4]
- Hazard Index[5] for acute and chronic non-carcinogenic TACs equals or exceeds 1 for the maximally exposed individual

Result in Other Emissions (such as those leading to odors) Adversely Affecting a Substantial Number of People

As described in the GAMAQI, due to the subjective nature of odor impacts, there are no quantitative thresholds to determine if potential odors would have a significant impact (SJVAPCD 2015a). projects must be assessed for odor impacts on a case-by-case basis for the following two situations:

- Generators: projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate
- Receivers: Residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources

The SJVAPCD has identified some common types of facilities that have been known to produce substantial odors, as well as screening distances between these odor sources and receptors. These are depicted in Table 3.

Table 3. Screening Levels for Potential Odor Sources

Type of Facility	Screening Distance (Miles)
Wastewater Treatment Facility	2
Sanitary Landfill	1
Transfer Station	1
Composting Facility	1
Petroleum Facility	2
Asphalt Batch Plant	1
Chemical Manufacturing	1
Fiberglass Manufacturing	1
Painting/Coating (i.e., auto body shop)	1

[4] The cancer risk threshold was increased from 10 to 20 in 1 million with approval of APR 1906 (Framework for Performing Health Risk Assessments) on June 30, 2015.

[5] Non-cancer adverse health impact, both for acute (short-term) and chronic (long-term) health effects, is measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentration from the project to a published reference exposure level that could cause adverse health effects as established by the Office of Environmental Health Hazard Assessment (OEHHA). The ratio (referred to as the hazard quotient) of each noncarcinogenic substance that affects a certain organ system is added together to produce an overall hazard index for that organ system.

Table 3. Screening Levels for Potential Odor Sources

Type of Facility	Screening Distance (Miles)
Food Processing Facility	1
Feed Lot/Dairy	1
Rendering Plant	1

Source: SJVAPCD 2015a.

If the project would result in an odor source and sensitive receptors being located within these screening distances, additional analysis would be required. For projects involving new receptors locating near an existing odor source where there is currently no nearby development and for new odor sources locating near existing receptors, the SJVAPCD recommends the analysis be based on a review of odor complaints for similar facilities, with consideration also given to local meteorological conditions, particularly the intensity and direction of prevailing winds. Regarding the complaint record of the odor source facility (or similar facility), the facility would be considered to result in significant odors if there has been:

- More than one confirmed complaint per year averaged over a 3-year period.
- Three unconfirmed complaints[6] per year averaged over a 3-year period.

2.3 Impact Assessment

2.3.1 Approach and Methodology

The proposed project was assessed against the SJVAPCD's recommended thresholds of significance to determine if construction and operational emissions would result in a significant air quality impact.

Construction

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate potential project-generated criteria air pollutant emissions during construction. Construction of the project would result in criteria air pollutant emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. All details for construction criteria air pollutants are provided in the Construction Schedule and Equipment attachment.

Operations

The only source of operational emissions would come from stationary sources that would be subject SJVAPCD permitting. There would be no increase in non-permitted operational emissions. Operational emissions were estimated based on Enchanted Rock, LLC's ERG450 guaranteed emission factors for its generators and AP- 42 Section 1.4 Natural Gas emission factors for SOx.

[6] An unconfirmed complaint means that either the odor/air contaminant release could not be detected or the source/facility cannot be determined (SJVAPCD 2015a).

2.3.2 Impact Analysis

2.3.2.1 Construction Criteria Air Pollutant Emissions

Estimated annual construction emissions associated with the proposed project are shown in Table 4. For assumptions in estimating construction emissions please refer to the Construction Schedule and Equipment assumptions attachment.

Table 4. Estimated Annual Construction Criteria Air Pollutant Emissions – Unmitigated

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Year	Tons Per Year					
2023	0.10	0.77	0.71	0.00	0.19	0.10
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	No	No	No	No	No	No

As shown in Table 4, the project would not exceed the SJVAPCD thresholds of significance during construction; air quality impacts would be less than significant.

2.3.2.2 Operational Criteria Air Pollutant Emissions

There would be no increase in operational emissions from the existing facility site. The only increase in operational emissions would come from the stationary source generators. Preliminary emissions estimates have been prepared based on the anticipated permitting requirements pursuant to the SJVAPCD's New Source Review and BACT requirements. Table 5 provides the estimated project's annual operational emissions.

Table 5. Estimated Annual Operational Criteria Air Pollutant Emissions – Unmitigated

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Emission Source	Tons Per Year					
Generators	0.55	2.01	5.66	0.18	3.28	3.28
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Threshold Exceeded?	No	No	No	No	No	No

As shown in Table 5, the project would not exceed the SJVAPCD thresholds of significance during operations; air quality impacts would be less than significant.

2.3.2.3 Ambient Air Quality

For projects subject to CEQA, the SJVAPCD provides an ambient air quality screening level to determine if refined dispersion modeling through an ambient air quality analysis (AAQA) is recommended. The SJVAPCD recommends an AAQA when a stationary source project would result in an increase of 100 pounds per day screening level of any

criteria pollutant for construction, operational permitted sources, and operational non-permitted source. The project will not have any non-permitted operational sources and its construction and operations from permitted sources will not overlap. Table 6 shows the estimated maximum daily construction emissions.

Table 6. Estimated Daily Construction Criteria Air Pollutant Emissions – Unmitigated

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Year	Maximum Pounds Per Day					
2023	1.72	13.80	12.82	0.03	3.45	1.87
SJVAPCD Screening Threshold	*100*	*100*	*100*	*100*	*100*	*100*
Threshold Exceeded?	No	No	No	No	No	No

As shown in Table 6, construction emissions would not exceed the screening level. Impacts would be less than significant.

Table 7 shows the estimated maximum daily operational emissions from stationary sources.

Table 7. Estimated Daily Operational Criteria Air Pollutant Emissions – Unmitigated

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Emission Source	Maximum Pounds Per Day					
Generators	26.28	96.36	271.55	8.48	157.68	157.68
SJVAPCD Threshold	*100*	*100*	*100*	*100*	*100*	*100*
Threshold Exceeded?	No	No	Yes	No	Yes	Yes

As shown in Table 7, CO and PM emissions would exceed the screening level threshold of 100 pounds per day. This is a potentially significant impact. However, the project is subject to SJVAPCD permitting. Pursuant to the SJVAPCD's permitting process, the SJVAPCD will perform an AAQA to determine whether a new or modified stationary source will cause or make worse a violation of a state or national ambient air quality standard (SJVAPCD 2018). Compliance with Rule 2201 New and Modified Stationary Source Review Rule would be required. Rule 2201, Section 4.14 Ambient Air Quality Standards includes a provision that no ambient air quality standard shall be exceeded.

> *4.14.1 Emissions from a new or modified Stationary Source shall not cause or make worse the violation of an Ambient Air Quality Standard. In making this determination, the APCO shall take into account the increases in minor and secondary source emissions as well as the mitigation of emissions through offsets obtained pursuant to this rule. Modeling used for the purposes of this rule shall be consistent with the requirements contained in the most recent edition of EPA's "Guideline on Air Quality Models" unless the APCO finds such model is inappropriate for use. After making such a finding, the APCO may designate an alternative model only after allowing for public comments and only with the concurrence of the ARB or the EPA.*

The project would be required to comply with SJVAPCD permitting requirements and as such if the AAQA determines that an ambient air quality standard violation would occur, refinements to the project operations would be required to ensure no violation of ambient air quality standards occur. Accordingly, compliance with SJVAPCD permitting would reduce potential localized impacts to less than significant.

2.3.2.4 Carbon Monoxide Hotspots

CO Hotspots are a violation of the CO ambient air quality standards and are associated with heavy congestion within an area with where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).). The SJVAPCD has established screening criteria to determine whether a project would result in a CO hotspot at affected roadway intersections (SJVAPCD 2015a), as discussed in Section 3.

There was no traffic study prepared for the project as there would be no increase in operational activities that would generate additional traffic. Construction would occur for a limited duration and would result in minimal traffic. The greatest amount of traffic would be generated during the generator installation phase which would result in up to 50 passenger vehicle and 10 medium- to heavy duty trucks trips per day from construction workers and vendors respectively and a total of 65 heavy duty trucks.

The project site is not located in a heavily congested area and there are no impediments to vertical or horizontal mixing. Based on these characteristics, the project would not result in a CO hotspot impact; the impact would be less than significant.

2.3.2.5 Fugitive Dust

The project would involve minimal soil disturbance through grading and trenching as the project would be located on developed sites with limited earthwork requirements. Fugitive dust (PM_{10}) would be generated from site grading and other earth-moving activities. Most of this dust would remain localized and would be deposited near the project site. However, the potential for impacts from fugitive dust exists unless control measures are implemented to reduce the emissions from the project site. The project would comply with SJVAPCD Regulation VIII Fugitive Dust Prohibitions which prescribes control measures to reduce fugitive dust emissions during construction. The project's fugitive dust impacts would be less than significant based on the minimal soil disturbance and compliance with SJVAPCD Regulation VIII.

2.3.2.6 Health Risks

Construction

The primary pollutant of concern related to exposure of sensitive receptors is diesel particulate matter (DPM) generated by construction related vehicles and equipment. The actual risk of adverse air quality effects depends on the pollutant type and concentration; the age sensitivity and breathing rates of the person exposed; and the length of exposure to the polluted air, including fraction of time exposed, among other factors. Health risk is a function of the concentration of contaminants in the environment and the duration of exposure to those contaminants. Health effects from TACs are often described in terms of individual cancer risk, which is based on a 30-year lifetime exposure to TACs (OEHHA 2015). Construction activities were modeled based upon an

approximately 5-month construction duration, which would be approximately 1% of the total exposure period used for typical health risk calculations. Additionally, concentrations of mobile-source DPM emissions are typically reduced by 70% at a distance of approximately 500 feet (CARB 2005). The nearest sensitive receptor (residence) is located approximately 492 feet west of the project site. Due to the temporary nature of construction activities and the dispersive properties of DPM, the nearest residential receptors would not be impacted regarding construction health risks. The impact associated with construction-related health risk would be less than significant.

Operations

The project would be subject to SJVAPCD permitting requirements. Pursuant to SJVAPCD Risk Management Policy APR-1905, all projects resulting in increases in hourly, daily, or annual potential to emit HAPs, shall undergo public health risk evaluation as part of the permit review process prior to any final decision on Authority to Construct or Permits to Operate (SJVAPCD 2015b).

APR-1905 requires implementation of Toxic Best Available Control Technology (T-BACT) when a new or modified emissions unit results in a greater than *de minimus* increase in cancer risk (greater than one in one million) or a greater than *de minimus* increase in noncancer risk (increase in hazard index of one). Additionally, the SJVAPCD will not permit a project if the emissions unit results in an increase in the Maximum Excess Cancer Risk of 20 in a million or greater (SJVAPCD 2015c).

During the permitting process, the SJVAPCD will conduct a health risk assessment for the project. Compliance with the permitting process will ensure that potential operational health risk impacts are less than significant.

2.3.2.7 Odors

The analysis of the project's potential to result in other emissions is focused on potential odor impacts. The occurrence and severity of potential odor impacts depend on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Construction

Diesel exhaust and ROGs/VOCs would be emitted during construction of the project from equipment exhaust which could result in an objectionable odor to some people. However, construction activities would be minimal and short-term, and emissions would disperse rapidly from the project site. Therefore, project construction would not create objectionable odors affecting a substantial number of people. Construction odor would be less than significant.

Operation

Land uses typically considered associated with odors include wastewater treatment facilities, waste disposal facilities, or agricultural operations. The project does not contain land uses typically associated with emitting objectionable odors as shown in Table 3. Operational odor would be less than significant.

2.3.2.8 Consistency with Applicable Laws, Regulations, Ordinances, and Standards

Table 8 provides a summary of the project's consistency with applicable laws, regulations, ordinances, and standards. As shown below, the project is consistent with all applicable standards.

Table 8: Applicable Laws, Regulations, Ordinances, and Standards

Applicable Laws, Regulations, Ordinances, and Standards	Project Consistency
Air Quality and Greenhouse Gas Emissions	
Federal Clean Air Act – National Ambient Air Quality Standards	**Consistent.** The project was evaluated against SJVAPCD thresholds adopted to determine a project's consistency with attainment plans for achieving federal and state ambient air quality standards and was found to be less than significant. Furthermore, the project would comply with all federal regulations through the New Source Review permitting process.
Federal Hazardous Air Pollutants – National Emission Standards for Hazardous Air Pollutants (HAPs)	**Consistent.** The project would comply with national emissions standards for HAPs through the New Source Review permitting process. The SJVAPCD would prepare a health risk assessment and require T-BACT to reduce risk if necessary.
California Clean Air Act – California Ambient Air Quality Standards	**Consistent.** The project was evaluated against SJVAPCD thresholds adopted to determine a project's consistency with attainment plans for achieving federal and state ambient air quality standards and was found to be less than significant.
San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation II Permits, Rule 2010 Permits Required Rule	**Consistent.** The project would submit an Authority to Construct application in accordance with Rule 2010.
SJVAPCD Regulation II Permits, Rule 2201 New and Modified Stationary Source Review Rule	**Consistent.** The project would submit an Authority to Construct permit application and would follow the SJVAPCD permitting process.
SJVAPCD Regulation IV Prohibitions, Rule 4001 New Source Performance Standards	**Consistent.** Through the permitting process the project would comply with new source performance standards.
SJVAPCD Regulation IV Prohibitions, Rule 4002 National Emission Standards for Hazardous Air Pollutants	**Consistent.** Through the permitting process the project would comply with HAPs standards.
SJVAPCD Regulation IV Prohibitions, Rule 4101 Visible Emissions	**Consistent.** Through the permitting process the project would comply with visible emission limits.
SJVAPCD Regulation IV Prohibitions, Rule 4102 Nuisance	**Consistent.** Through the permitting process the project would comply with prohibitions of discharges of air contaminants.
SJVAPCD Regulation IV Prohibitions, Rule 4703 Stationary Gas Turbines.	**Consistent.** Through the permitting process the project would comply with standards established for stationary gas turbines.

Table 8: Applicable Laws, Regulations, Ordinances, and Standards

Applicable Laws, Regulations, Ordinances, and Standards	Project Consistency
Air Quality and Greenhouse Gas Emissions	
SJVAPCD Regulation VIII Fugitive Dust Prohibitions, Rule 8021.	**Consistent.** The project would comply with Regulation VIII and implement best management practices to limit fugitive dust impacts.

2.3.3 Conclusion

The proposed project construction and operational emissions would be below the SJVAPCD's thresholds of significance, which have been established to determine when a project would have the potential to conflict with attainment plans and hinder attainment of ambient air quality standards. The project would comply with SJVAPCD permitting requirements, which would ensure the project's operational emissions do not exceed ambient air quality standards or result in a health risk impact. Because the project's emissions are less than the SJVAPCD thresholds and would comply with permitting requirements, the project would have a less than significant impact on air quality.

3 Greenhouse Gases

3.1 Environmental and Regulatory Setting

3.1.1 Environmental

Climate Change Overview

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period (i.e., decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (EPA 2022a).

The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows: Short-wave radiation emitted by the Sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on the Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-twentieth century and is the most significant driver of observed climate change (IPCC 2013). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2013). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2013).

Greenhouse Gases

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code, Section 38505(g), for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. The following paragraphs provide a summary of the most common GHGs and their sources.[7]

Carbon Dioxide. CO_2 is a naturally occurring gas and a by-product of human activities and is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are from the combustion of fuels such as coal, oil, natural gas, and wood and changes in land use.

Methane. CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (e.g., rockets, racecars, and aerosol sprays).

[7] The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (1995), IPCC Fourth Assessment Report (2007), CARB's "Glossary of Air Pollution Terms" (2019a), and EPA's "Glossary of Climate Change Terms" (2016).

Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2022). The Intergovernmental Panel on Climate Change (IPCC) developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2e).

CalEEMod version 2020.4.0 assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the IPCC Fourth Assessment Report (IPCC 2007). The GWP values identified in CalEEMod were applied to the project.

Sources of Greenhouse Gas Emissions

Anthropogenic GHG emissions worldwide in 2020 (the most recent year for which data is available) totaled approximately 49,800 MMT CO_2e, excluding land use change and forestry (PBL 2022). The five largest emitting countries and the European Union (EU-27), together account for about 60% of total global GHG emissions: China (27%), the United States (12%), the European Union (about 7%), India (7%), the Russian Federation (4.5%) and Japan (2.4%). These countries also have the highest CO2 emission levels. (PBL 2022).

Per the EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020 (EPA 2022b, total United States GHG emissions were approximately 5,981 MMT CO_2e in 2020 (EPA 2022b). The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 76.4% of total GHG emissions (4,760 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 92.8% of CO_2 emissions in 2018 (5,031.8 MMT CO_2e). Relative to 1990, gross United States GHG emissions in 2020 are lower by 7.3%, down from a high of 15.2% above 1990 levels in 2007. GHG emissions decreased from 2019 to 2020 by 10.6% and overall, net emissions in 2020 were 21.4% below 2005 levels (EPA 2022b).

According to California's 2000–2020 GHG emissions inventory (2022 edition), California emitted 369.2 MMT CO_2e in 2020, including emissions resulting from out-of-state electrical generation (CARB 2022b). The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high-GWP substances, and recycling and waste. The California GHG emission source categories and their relative contributions in 2022 are presented in Table 9.

Table 9. Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total
Transportation	136.60	37%
Industrial uses	73.84	20%

Table 9. Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total
Electricity generationa	59.07	16%
Residential and commercial uses	36.92	10%
Agriculture and Forestry	33.22	9%
High GWP substances	22.15	6%
Recycling and waste	7.38	2%
Totals	**369.2**	**100%**

Source: CARB 2022b.
Notes: GHG = greenhouse gas; GWP = global warming potential; MMT CO_2e = million metric tons of carbon dioxide equivalent. Emissions reflect 2020 California GHG inventory.
Totals may not sum due to rounding.
[a] Includes emissions associated with imported electricity, which account for 18.46 MMT CO_2e.

Per capita GHG emissions in California have dropped from a 2001 peak of 13.8 MT CO_2e per person to 9.3 MT CO_2e per person in 2020, a 33% decrease. In 2016, statewide GHG emissions dropped below the 2020 GHG Limit of 431 MMT CO_2e and have remained below the limit since that time (CARB 2022b).

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 IPCC Synthesis Report (IPCC 2014) indicated that warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, rising sea levels, and ocean acidification (IPCC 2014).

In California, climate change impacts have the potential to affect sea-level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, frequency of severe weather events, and electricity demand and supply.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The Office of Environmental Health Hazard Assessment identified various indicators of climate change in California, which are scientifically based measurements that track trends in various aspects of climate change. Many indicators reveal discernible evidence that climate change is occurring in California and is having significant, measurable impacts in the state. Changes in the state's climate have been observed including an increase in annual average air temperature with record warmth from 2012 to 2016, more frequent extreme heat events, more extreme drought, a decline in winter chill, an increase in cooling degree days and a decrease in heating degree days, and an increase in variability of statewide precipitation (OEHHA 2018).

To address local and regional governments need for information to support action in their communities, the Fourth Assessment (CNRA 2018a) includes reports for nine regions of the state, including the San Joaquin Region, where the project is located. Key projected climate changes for the San Joaquin Region include the following (CNRA 2018b):

- Agriculture is one of the most vulnerable sectors under climate change due in part of more frequent and severe drought, as well as tighter water supply.

- Ecosystems in the San Joaquin Valley are highly vulnerable to climate change given existing anthropogenic stressors and the lack of organization of landscape-scale science, funding, and mitigation of adverse impacts within the region.
- Water resources within the San Joaquin Valley region will be severely impacted by climate change.
- Infrastructure in the San Joaquin Valley, including urban, water, and transportation systems may face increased stress from higher temperatures and extreme precipitation events, including droughts and floods.

Electricity Reliability

According to the Draft 2022 Scoping Plan (CARB 2022c), in 2021, about 48% of electricity generation serving California came from nonrenewable and unspecified resources, while 52% came from renewable and zero-carbon resources. The state's Strategic Reliability Reserve, established in AB 205 to provide additional reliability insurance during extreme events, may make three of the fossil gas-fired OTC plants planned for retirement available to support the grid on a limited basis after 2023. The state also adopted legislation to facilitate extension of the Diablo Canyon Nuclear Power Plant for five years beyond its 2025 planned closure. At the same time, the state continues to rapidly expand deployment of clean energy generation and storage resources and plan for increased electrification. This is critical to reducing GHG emissions and addressing the long-term impacts of climate change. Climate change is causing unprecedented stress on California's energy system—driving high demand and constraining supply. Heat, drought, and wildfires can both reduce electricity supply from reductions in hydropower generation and impacts on generation and transmission performance, and increase demand, especially in the evening hours when solar generation is declining.

3.1.2 Regulatory

There has been extensive regulation with respect to greenhouse gases. The following regulations would be applicable.

EO S-3-05. EO S-3-05 (June 2005) identified California's GHG emissions reduction targets and laid out responsibilities among the state agencies for implementing the EO and for reporting on progress toward the targets.

AB 32. In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32 (Núñez and Pavley). The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive multiyear program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the state's long-range climate objectives.

EO B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. To facilitate achieving this goal, EO B-30-15 called for CARB to update the Scoping Plan to express the 2030 target in terms of MMT CO_2e.

SB 32 and AB 197. SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to the Board as

nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the scoping plan.

EO B-55-18. EO B-55-18 (September 2018) establishes a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." This EO directs CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal."

Assembly Bill 1279. The Legislature enacted AB 1279, the California Climate Crisis Act, in September 2022. The bill declares the policy of the state to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter. Additionally, the bill requires that by 2045, statewide anthropogenic GHG emissions be reduced to at least 85% below 1990 levels.

CARB's Climate Change Scoping Plan. One specific requirement of AB 32 is for CARB to prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (Health and Safety Code, Section 38561(a)), and to update the plan at least once every 5 years. In 2008, CARB approved the first scoping plan. The *Climate Change Scoping Plan: A Framework for Change* (*Scoping Plan*) included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the state's long-range climate objectives.

In 2014, CARB approved the first update to the Scoping Plan. The First Update to the Climate Change Scoping Plan: Building on the Framework (First Update) defined the state's GHG emission reduction priorities for the next 5 years and laid the groundwork to start the transition to the post-2020 goals set forth in EOs S-3-05 and B-16-2012. In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05.

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80% below 1990 levels by 2050 as set forth in S-3-05. The Governor called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. In the summer of 2016, the Legislature affirmed the importance of addressing climate change through passage of SB 32 (Pavley, Chapter 249, Statutes of 2016).

In December 2017, CARB's Governing Board adopted the 2017 Climate Change Scoping Plan Update (2030 Scoping Plan) (CARB 2017b). The 2030 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update, while identifying new, technologically feasible and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target and define the state's climate change priorities to 2030 and beyond. The strategies' "known commitments" include implementing renewable energy and energy efficiency (including the mandates of SB 350), increased stringency of the LCFS, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and increased stringency of SB 375 targets. To fill the gap in additional reductions needed to achieve the 2030 target, it recommends continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20%.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and the EOs and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. A project is considered consistent with the statutes and EOs if it meets the general policies in reducing GHG emissions to facilitate the achievement of the state's goals and does not impede attainment of those goals. As discussed in several cases, a given project need not be in perfect conformity with each and every planning policy or goals to be consistent. A project would be consistent if it will further the objectives and not obstruct their attainment.

CARB released the Draft 2022 Scoping Plan Update in May 2022, which outlines the state's plan to reach carbon neutrality by 2045 or earlier, while also assessing the progress the state is making toward reducing GHG emissions by at least 40% below 1990 levels by 2030, as is required by SB 32 and laid out in the Second Update. The carbon neutrality goal requires CARB to expand proposed actions from only the reduction of anthropogenic sources of GHG emissions to also include those that capture and store carbon (e.g., through natural and working lands, or mechanical technologies). The carbon reduction programs build on and accelerate those currently in place, including moving to zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen (CARB 2022c).

The Draft 2022 Scoping Plan Update also emphasizes that there is no realistic path to carbon neutrality without carbon removal and sequestration, and to achieve the state's carbon neutrality goal, carbon reduction programs must be supplemented by strategies to remove and sequester carbon. Strategies for carbon removal and sequestration include carbon capture and storage from anthropogenic point sources, where CO_2 is captured as it leaves a facility's smokestack and is injected into geologic formations or used in industrial materials (e.g., concrete); and carbon dioxide removal from ambient air, through mechanical (e.g., direct air capture with sequestration) or nature-based (e.g., management of natural and working lands) applications.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and the EOs; it also establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. A project is considered consistent with the statutes and EOs if it would meet the general policies in reducing GHG emissions to facilitate the achievement of the state's goals and would not impede attainment of those goals.

CARB's Regulations for the Mandatory Reporting of Greenhouse Gas Emissions. CARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that EPA promulgated in its Final Rule on Mandatory Reporting of Greenhouse Gases (Title 40, CFR, Part 98). Specifically, Section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that EPA promulgated in the Federal Register on October 30, 2009; July 12, 2010; September 22, 2010; October 28, 2010; November 30, 2010; December 17, 2010; and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit over 10,000 MT CO_2e per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MT CO_2e per year threshold are required to have their GHG emission report verified by a CARB-accredited third-party verified.

EO B-18-12. EO B-18-12 (April 2012) directed state agencies, departments, and other entities under the governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10% by 2015 and 20% by 2020, as measured against a 2010 baseline. EO B-18-12 also established goals for existing state buildings for reducing grid-based energy purchases and water use.

AB 1279. The California Climate Crisis Act declares the policy of the state is both to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85% below the 1990 levels. The law requires the CARB to work with relevant state agencies to ensure that updates to the scoping plan identify and recommend measures to achieve these policy goals and to identify and implement a variety of policies and strategies that enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies in California, as specified. The law requires the CARB to submit an annual report, as specified.

Department of Water Resources Greenhouse Gas Emissions Reduction Plan (GGERP) Update. In 2012, DWR developed the Greenhouse Gas Emissions Reduction Plan (2012 Plan) as the first phase of its Climate Action Plan to guide decision making related to energy use and GHG emissions. DWR's near-term goal in the 2012 Plan was to reduce its emissions to 50% below 1990 emissions level by 2020. DWR achieved this goal five years early. For Update 2020, DWR lays out the following midterm and long-term GHG emissions reduction goals to guide decision-making beyond 2020:

- Mid-term Goal — By 2030, reduce GHG emissions to at least 60% below the 1990 level.
- Long-term Goal — By 2045, supply 100% of electricity load with zero-carbon resources and achieve carbon neutrality.

3.2 Criteria for Assessment

3.2.1 Self-Certification

AB 205 establishes a process to streamline new energy projects by exempting the projects from the CEQA and allowing DWR to self-certify certain energy generation projects and to establish a certification process requiring applications to be submitted to the CEC.

3.2.2 Thresholds of Significance

As discussed above, the proposed project is exempt from CEQA, however, the self-certification process is intended to be protective of climate change impacts from greenhouse gas emissions.

With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or performance-based standards" (14 CCR 15064.4[a]). A lead agency may use a "model or methodology" to estimate greenhouse gas emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change" (14 CCR 15064.4[c]). The

CEQA Guidelines provide that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment (14 CCR 15064.4[b]):

The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.

1. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
2. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

In addition, the CEQA Guidelines specify that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7[c]).

The extent to which a project increases or decreases GHG emissions in the existing environmental setting should be estimated in accordance with Section 15064.4, Determining the Significance of Impacts from Greenhouse Gas Emissions, of the State CEQA Guidelines. The State CEQA Guidelines indicate that when calculating GHG emissions resulting from a project, lead agencies shall make a good-faith effort based on scientific and factual data (Section 15064.4 (a)), and lead agencies have discretion to select the model or methodology deemed most appropriate for enabling decision makers to intelligently assess the project's incremental contribution to climate change (Section 15064.4 (c)).

The State CEQA Guidelines do not indicate an amount of GHG emissions that constitutes a significant impact on the environment. Instead, they authorize the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence (State CEQA Guidelines Sections 15064.4(a) and 15064.7(c)).

The SJVAPCD does not regulate GHG emissions directly through its permitting responsibilities for stationary sources. Thus, there are no SJVAPCD rules or regulations related to GHGs. The SJVAPCD, however, influences reductions of GHGs from new and modified stationary sources when acting as a lead agency for CEQA. The SJVAPCD implements its GHG policies and reviews whether new or modified stationary sources will implement best performance standards (BPSs).

3.2.3 Approach to Determining Significance

This analysis assesses compliance with applicable plans, policies, regulations, and requirements adopted to implement a statewide, regional or local plan for the reduction or mitigation of GHG emissions.

Specifically, the DWR's GGERP is the applicable GHG reduction plans. The following construction emissions thresholds have been developed in the GGERP to distinguish between typical construction projects and Extraordinary Construction Projects: a construction project will be considered an Extraordinary Construction Project and the GHG impacts from the construction activities will not be eligible to rely on Update 2020 for streamlined CEQA review if:

- The project emits more than 25,000 MT CO_2e in total during the construction phase of the project, or
- The project emits more than 12,500 MT CO_2e in any single year of construction.

The GGERP does not provide an operational threshold for which to assess a project's GHG impact, but rather the consistency with GHG Emission Reduction Measures from the GGERP is used to assess significance. In accordance with Section 15064.4 of the State CEQA Guidelines, GHG emissions resulting from operation of the project was quantitatively estimated and are provided for informational purposes only.

3.3 Impact Assessment

3.3.1 Approach and Methodology

Construction

CalEEMod Version 2020.4.0 was used to estimate potential Project-generated GHG emissions during construction. Construction of the Project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. All details for construction GHG emissions are provided in the Construction Schedule and Equipment attachment.

Operations

The only source of operational emissions would come from stationary sources that would be subject SJVAPCD permitting. There would be no increase in non-permitted operational emissions. Operational emissions were estimated based on Enchanted Rock, LLC's ERG450 fuel use and the World Resources Institute GHG Protocol tool for stationary combustion (World Resources Institute 2015).

3.3.2 Impact Analysis

3.3.2.1 Construction GHG Emissions

Construction GHG emissions associated with the proposed project are shown in Table 10. As shown below, construction emissions would be well below the extraordinary GHG construction emissions established by DWR and would not result in a significant impact.

Table 10. Estimated Annual Construction GHG Emissions – Unmitigated

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons Per Year			
2023	130.62	0.03	0.00	131.88
Threshold for Construction Duration	—	—	—	25,000
Threshold for Single Year of Construction	—	—	—	12,500

3.3.2.2 Operational GHG Emissions

There would be no increase in operational emissions from the existing facility site. The only increase in operational emissions would come from the stationary sources of the generators. Table 11 shows the stationary source emissions from the generators.

Table 11. Estimated Annual Operational GHG Emissions – Unmitigated

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons Per Year			
Generators	11,110.70	0.20	0.20	11,121.55

Note: Based on 300 hours of use.

3.3.2.3 Consistency with Department of Water Resources Greenhouse Gas Emission Reduction Plan

The project's consistency with the GGERP is evaluated below in Table 12.

Table 12. Project Consistency with GGERP

GHG Emission Reduction Measure	Measure Description	Project Consistency
OP-1 Reid Gardner Power Station (SA)	Replace energy from Reid Garner with less GHG intensive resources.	**Not applicable.** The project would not inhibit DWR from replacing the Reid Gardner Station energy with less GHG intensive resources.
OP-2 Unit Efficiency Improvements (SA)	Increase efficiency of State Water Project (SWP) pumps and generators.	**Not applicable.** The project would not impede DWR's efforts to increase the efficiency of SWP pumps and generators.
OP-3 Renewable Energy Procurement Plan (SA)	Increase the use of renewable energy to operate the SWP.	**Not applicable.** The energy generated as part of the SRR projects is to provide resiliency to the grid and not in response to SWP energy demands.
OP-4 On-Site Renewable Resources (SA)	Develop renewable energy projects on DWR's property.	**Not applicable.** The project is occurring on non-DWR owned sites in strategic locations to help improve the resiliency of the energy grid.
OP-5 Lodi Energy Center (LEC) (SA)	Replace LEC with zero carbon resources.	**Not applicable.** The project would not inhibit DWR from replacing the LEC with zero carbon resources.
OP-6 Carbon Sequestration (SA)	Sequester carbon through environmental restoration activities.	**Not applicable.** The project would not impede DWR's carbon sequestration activities. The project is located on a developed site.

Table 12. Project Consistency with GGERP

GHG Emission Reduction Measure	Measure Description	Project Consistency
OP-7 Zero Carbon Energy (SA)	Increase the use of zero carbon energy to operate the SWP	**Not applicable.** The energy generated as part of the SRR projects is to provide resiliency to the grid and not in response to SWP energy demands. The project would not impede DWR's use of zero carbon energy for its facilities.
CO-1 Construction Best Management Practices (BMPs) and Regulations (PL)	Implement BMPs and comply	**Consistent.** DWR has adopted BMPs for construction and maintenance activities and made significant changes to its construction project specifications requirements that will lead to important reductions in construction emissions. Construction BMPs apply to all construction and maintenance projects that DWR completes or for which DWR issues contracts. The project would implement the construction BMPs through the contracting process.
MA-1 SF_6 (SA)	Reduce SF_6 emission from switchgear.	**Not applicable.** This measure does not apply to the project.
MA-2 Utility Retail Renewable Program (SA)	Purchase retail energy from local utility's renewable program.	**Not applicable.** This measure does not apply to the project. The project would not impede DWR's ability to purchase renewable energy from local utilities.
MA-3 Carbon Offsets (CM)	Purchase carbon offsets.	**Not applicable.** DWR will consider purchasing carbon offsets to meet its GHG reduction goals. The project does not impede DWR's ability to purchase carbon offsets.
MA-4 DWR Sustainability Initiatives (SA)	Implement business practices to reduce energy consumption.	**Not applicable.** The project does not impede DWR's sustainability initiative.
MA-4 Retail Energy Reduction (SA)	Improve building and equipment energy efficiency.	**Not applicable.** The project would not construct any permanent buildings or equipment.

Source: DWR, GGERP 2020 Update (DWR 2020)
Note: SA = Specific Actions; PL = Project Level; CM = conditional measure

As shown in Table 12, the project would not impede DWR's GGERP and is consistent with applicable measures. As such, GHG impacts would be less than significant.

3.3.2.4 Project GHG Emissions in the Context of Senate Bill 32, Assembly Bill 1279, and Executive Order S-3-05

EO S-3-05 identified the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. SB 32 establishes a statewide GHG emissions reduction target

whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030. AB 1279 establishes a policy of the state to achieve net zero GHG emissions no later than 2045 and for statewide anthropogenic GHG emissions to be reduced to at least 85% below 1990 levels by 2045.

Each Scoping Plan builds upon the successful framework established by the initial Scoping Plan and subsequent updates, while also identifying new, technologically feasible, and cost-effective strategies to ensure that California meets increasingly stringent GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Scoping Plan updates have continued to express optimism in meeting future year targets of 2050 and 2030, as evaluated in the 2014 and 2017 Scoping Plans (respectively), and most recently, the 2045 goal addressed in the Draft 2022 Scoping Plan under EO B-55-18, which AB 1279 codified and expanded on.

The project will result in a short-term (five years) increase in GHG emissions from natural gas combustion used to generate electricity and increase the resiliency of the electric grid. The project is being implemented to combat current climate change impacts. As discussed in the Draft 2022 Scoping Plan, the electric grid will need to grow at unprecedented rates and ensure reliability, affordability, and resiliency through the next two decades and beyond. Accordingly, the Draft 2022 Scoping Plan acknowledges that the state will need to keep all options on the table, as it will take time to fully grow the electricity grid to be the backbone for a decarbonized economy (CARB 2022c).

Based on the above, while the project does result in an increase in GHG emissions, it is part of the state's plan for combating climate change impacts by building the grid resiliency during extreme events. The project can be considered one of the tools the state is using on an interim basis to help bridge the gap between supply and demand during the extreme events caused by climate change. As such, the project is consistent with the state's long-term goals embodied in the scoping plans and legislation.

3.3.3 Conclusion

As discussed above, consistency with DWR's GGERP was used to assess the project's potential significance. The proposed project would result in approximately 132 MT CO_2e during construction, which would be substantially less than the 25,000 MT CO_2e for the duration of construction or 12,500 MT CO_2e for a single year of construction established by DWR to indicate additional analysis is necessary, as such construction emissions would be less than significant.

The project will result in an increase in operational emissions; however, those emissions will be temporary (approximately five years) and are part of California's response to addressing climate change impacts and consistent with the state's long-term climate goals. As discussed above, the project would not impede DWR's GGERP and is consistent with applicable measures. As such, GHG impacts would be less than significant.

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Attachment A

Construction Equipment and Schedule

SRR Energy Projects – Construction Information

Modesto

Construction Vehicle Trips

Construction Phase	Start Date	End Date	One-Way Vehicle Trips			Equipment			
			Average Daily Worker Trips (LDA to LDT2)	*Average Daily Vendor Truck Trips (MHD and HHD)*	*Total Haul Truck Trips (HHD)*	*Equipment Type*	*Quantity*	*Horsepower*	*Usage Hours*
Site Preparation (11 days)	3/15/2023	3/29/2023	10	4	16	Graders	1	187	8
						Scrapers	1	247	8
						Tractors/Loaders/Backhoes	1	97	8
Grading (29 days)	3/30/2023	05/09/2023	10	4	30	Graders	1	187	8
						Rubber Tired Dozers	1	247	8
						Tractors/Loaders/Backhoes	2	97	8
Trenching (11 days)	05/10/2023	05/24/2023	10	0	0	Bore/Drill Rig	1	221	
						Excavator	1	158	
						Plate Compactor	1	8	
						Tractors/Loaders/Backhoes	2	97	8
Civil Construction/Generator Installation (59 days)	05/10/2023	07/31/2023	50	10	65	Cranes	1	231	8
						Forklifts	2	89	8
						Generator Sets	1	84	8
						Tractors/Loaders/Backhoes	1	97	8
						Welders	3	46	8
Energization (1 day)	08/01/2023		10	0	0	–	–		–

LDA = Light Duty Auto, LDT1 and LDT2= Light Duty Truck

MHD = Medium Heavy Duty Truck

HHD = Heavy Heavy Duty Truck (Semi)

Attachment B

CalEEMod Construction Results

SRR Modesto - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

SRR Modesto

Stanislaus County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.00	1000sqft	2.00	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	46
Climate Zone	3			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Less than 2 acre site

Construction Phase - Estimated Construction Schedule

Off-road Equipment - Assumed 8 hours of operation

Off-road Equipment - Assumed 8 hours of operation

Off-road Equipment - Estimated trenching equipment

Off-road Equipment - Estimated civil construction equipment

Off-road Equipment - no offroad equip for energization phase

Grading -

Trips and VMT - Estimated trips

Vehicle Trips - No operational trips

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	NumDays	4.00	29.00
tblConstructionPhase	NumDays	200.00	59.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	PhaseEndDate	2/21/2024	8/1/2023
tblConstructionPhase	PhaseEndDate	1/24/2024	5/24/2023
tblConstructionPhase	PhaseEndDate	4/19/2023	5/9/2023
tblConstructionPhase	PhaseEndDate	2/7/2024	7/31/2023
tblConstructionPhase	PhaseEndDate	4/13/2023	3/29/2023
tblConstructionPhase	PhaseStartDate	2/8/2024	8/1/2023
tblConstructionPhase	PhaseStartDate	4/20/2023	5/10/2023
tblConstructionPhase	PhaseStartDate	4/14/2023	3/30/2023
tblConstructionPhase	PhaseStartDate	1/25/2024	5/10/2023
tblConstructionPhase	PhaseStartDate	4/12/2023	3/15/2023
tblLandUse	LotAcreage	0.02	2.00
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Generator Sets	Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	16.00
tblTripsAndVMT	HaulingTripNumber	0.00	30.00
tblTripsAndVMT	HaulingTripNumber	0.00	66.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	50.00
tblVehicleTrips	ST_TR	1.99	0.00

SRR Modesto - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	SU_TR	5.00	0.00
tblVehicleTrips	WD_TR	4.96	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0954	0.7657	0.7114	1.5100e-003	0.1589	0.0327	0.1916	0.0732	0.0307	0.1039	0.0000	130.6197	130.6197	0.0274	1.9200e-003	131.8765
Maximum	**0.0954**	**0.7657**	**0.7114**	**1.5100e-003**	**0.1589**	**0.0327**	**0.1916**	**0.0732**	**0.0307**	**0.1039**	**0.0000**	**130.6197**	**130.6197**	**0.0274**	**1.9200e-003**	**131.8765**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0954	0.7657	0.7114	1.5100e-003	0.1589	0.0327	0.1916	0.0732	0.0307	0.1039	0.0000	130.6195	130.6195	0.0274	1.9200e-003	131.8763
Maximum	**0.0954**	**0.7657**	**0.7114**	**1.5100e-003**	**0.1589**	**0.0327**	**0.1916**	**0.0732**	**0.0307**	**0.1039**	**0.0000**	**130.6195**	**130.6195**	**0.0274**	**1.9200e-003**	**131.8763**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-15-2023**	**6-14-2023**	0.5724	0.5724
2	**6-15-2023**	**9-14-2023**	0.2883	0.2883
		Highest	0.5724	0.5724

SRR Modesto - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/15/2023	3/29/2023	5	11	
2	Grading	Grading	3/30/2023	5/9/2023	5	29	
3	Trenching	Trenching	5/10/2023	5/24/2023	5	11	
4	Civil Construction	Building Construction	5/10/2023	7/31/2023	5	59	
5	Energization	Architectural Coating	8/1/2023	8/1/2023	5	1	

Acres of Grading (Site Preparation Phase): 11

Acres of Grading (Grading Phase): 29

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Energization	Air Compressors	0	6.00	78	0.48
Civil Construction	Cranes	1	8.00	231	0.29
Trenching	Bore/Drill Rigs	1	8.00	221	0.50
Trenching	Excavators	1	8.00	158	0.38
Trenching	Plate Compactors	1	8.00	8	0.43
Grading	Graders	1	8.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Civil Construction	Forklifts	2	8.00	89	0.20
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Civil Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Civil Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Civil Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	10.00	4.00	16.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	4.00	30.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Civil Construction	8	50.00	10.00	66.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Energization	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

SRR Modesto - Stanislaus County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0390	0.0000	0.0390	0.0188	0.0000	0.0188	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7100e-003	0.0732	0.0387	1.0000e-004		3.0100e-003	3.0100e-003		2.7700e-003	2.7700e-003	0.0000	8.8286	8.8286	2.8600e-003	0.0000	8.9000
Total	**6.7100e-003**	**0.0732**	**0.0387**	**1.0000e-004**	**0.0390**	**3.0100e-003**	**0.0420**	**0.0188**	**2.7700e-003**	**0.0216**	**0.0000**	**8.8286**	**8.8286**	**2.8600e-003**	**0.0000**	**8.9000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	1.0000e-003	2.1000e-004	0.0000	1.4000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4527	0.4527	0.0000	7.0000e-005	0.4740
Vendor	2.0000e-005	9.7000e-004	2.8000e-004	0.0000	1.5000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4223	0.4223	0.0000	6.0000e-005	0.4413
Worker	1.8000e-004	1.2000e-004	1.4400e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3537	0.3537	1.0000e-005	1.0000e-005	0.3572
Total	**2.2000e-004**	**2.0900e-003**	**1.9300e-003**	**0.0000**	**7.3000e-004**	**2.0000e-005**	**7.4000e-004**	**2.0000e-004**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**1.2287**	**1.2287**	**1.0000e-005**	**1.4000e-004**	**1.2725**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0390	0.0000	0.0390	0.0188	0.0000	0.0188	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7100e-003	0.0732	0.0387	1.0000e-004		3.0100e-003	3.0100e-003		2.7700e-003	2.7700e-003	0.0000	8.8286	8.8286	2.8600e-003	0.0000	8.9000
Total	**6.7100e-003**	**0.0732**	**0.0387**	**1.0000e-004**	**0.0390**	**3.0100e-003**	**0.0420**	**0.0188**	**2.7700e-003**	**0.0216**	**0.0000**	**8.8286**	**8.8286**	**2.8600e-003**	**0.0000**	**8.9000**

Mitigated Construction Off-Site

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.0000e-005	1.0000e-003	2.1000e-004	0.0000	1.4000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4527	0.4527	0.0000	7.0000e-005	0.4740
Vendor	2.0000e-005	9.7000e-004	2.8000e-004	0.0000	1.5000e-004	1.0000e-005	1.5000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4223	0.4223	0.0000	6.0000e-005	0.4413
Worker	1.8000e-004	1.2000e-004	1.4400e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3537	0.3537	1.0000e-005	1.0000e-005	0.3572
Total	**2.2000e-004**	**2.0900e-003**	**1.9300e-003**	**0.0000**	**7.3000e-004**	**2.0000e-005**	**7.4000e-004**	**2.0000e-004**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**1.2287**	**1.2287**	**1.0000e-005**	**1.4000e-004**	**1.2725**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1027	0.0000	0.1027	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.2154	0.1343	3.1000e-004		9.0400e-003	9.0400e-003		8.3100e-003	8.3100e-003	0.0000	27.2424	27.2424	8.8100e-003	0.0000	27.4627
Total	**0.0199**	**0.2154**	**0.1343**	**3.1000e-004**	**0.1027**	**9.0400e-003**	**0.1117**	**0.0497**	**8.3100e-003**	**0.0580**	**0.0000**	**27.2424**	**27.2424**	**8.8100e-003**	**0.0000**	**27.4627**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.8700e-003	3.9000e-004	1.0000e-005	2.6000e-004	2.0000e-005	2.7000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.8488	0.8488	0.0000	1.3000e-004	0.8887
Vendor	6.0000e-005	2.5600e-003	7.4000e-004	1.0000e-005	3.8000e-004	2.0000e-005	4.0000e-004	1.1000e-004	2.0000e-005	1.3000e-004	0.0000	1.1133	1.1133	0.0000	1.7000e-004	1.1635
Worker	4.8000e-004	3.1000e-004	3.8000e-003	1.0000e-005	1.1600e-003	1.0000e-005	1.1700e-003	3.1000e-004	1.0000e-005	3.1000e-004	0.0000	0.9326	0.9326	3.0000e-005	3.0000e-005	0.9416
Total	**5.7000e-004**	**4.7400e-003**	**4.9300e-003**	**3.0000e-005**	**1.8000e-003**	**5.0000e-005**	**1.8400e-003**	**4.9000e-004**	**5.0000e-005**	**5.3000e-004**	**0.0000**	**2.8947**	**2.8947**	**3.0000e-005**	**3.3000e-004**	**2.9938**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

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Category	tons/yr										MT/yr					
Fugitive Dust					0.1027	0.0000	0.1027	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.2154	0.1343	3.1000e-004		9.0400e-003	9.0400e-003		8.3100e-003	8.3100e-003	0.0000	27.2424	27.2424	8.8100e-003	0.0000	27.4627
Total	**0.0199**	**0.2154**	**0.1343**	**3.1000e-004**	**0.1027**	**9.0400e-003**	**0.1117**	**0.0497**	**8.3100e-003**	**0.0580**	**0.0000**	**27.2424**	**27.2424**	**8.8100e-003**	**0.0000**	**27.4627**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-005	1.8700e-003	3.9000e-004	1.0000e-005	2.6000e-004	2.0000e-005	2.7000e-004	7.0000e-005	2.0000e-005	9.0000e-005	0.0000	0.8488	0.8488	0.0000	1.3000e-004	0.8887
Vendor	6.0000e-005	2.5600e-003	7.4000e-004	1.0000e-005	3.8000e-004	2.0000e-005	4.0000e-004	1.1000e-004	2.0000e-005	1.3000e-004	0.0000	1.1133	1.1133	0.0000	1.7000e-004	1.1635
Worker	4.8000e-004	3.1000e-004	3.8000e-003	1.0000e-005	1.1600e-003	1.0000e-005	1.1700e-003	3.1000e-004	1.0000e-005	3.1000e-004	0.0000	0.9326	0.9326	3.0000e-005	3.0000e-005	0.9416
Total	**5.7000e-004**	**4.7400e-003**	**4.9300e-003**	**3.0000e-005**	**1.8000e-003**	**5.0000e-005**	**1.8400e-003**	**4.9000e-004**	**5.0000e-005**	**5.3000e-004**	**0.0000**	**2.8947**	**2.8947**	**3.0000e-005**	**3.3000e-004**	**2.9938**

3.4 Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.2900e-003	0.0297	0.0427	1.0000e-004		1.2500e-003	1.2500e-003		1.1600e-003	1.1600e-003	0.0000	8.7748	8.7748	2.8000e-003	0.0000	8.8448
Total	**3.2900e-003**	**0.0297**	**0.0427**	**1.0000e-004**		**1.2500e-003**	**1.2500e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**8.7748**	**8.7748**	**2.8000e-003**	**0.0000**	**8.8448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.2000e-004	1.4400e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3537	0.3537	1.0000e-005	1.0000e-005	0.3572
Total	**1.8000e-004**	**1.2000e-004**	**1.4400e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3537**	**0.3537**	**1.0000e-005**	**1.0000e-005**	**0.3572**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.2900e-003	0.0297	0.0427	1.0000e-004		1.2500e-003	1.2500e-003		1.1600e-003	1.1600e-003	0.0000	8.7748	8.7748	2.8000e-003	0.0000	8.8448
Total	**3.2900e-003**	**0.0297**	**0.0427**	**1.0000e-004**		**1.2500e-003**	**1.2500e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**8.7748**	**8.7748**	**2.8000e-003**	**0.0000**	**8.8448**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.2000e-004	1.4400e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3537	0.3537	1.0000e-005	1.0000e-005	0.3572
Total	**1.8000e-004**	**1.2000e-004**	**1.4400e-003**	**0.0000**	**4.4000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3537**	**0.3537**	**1.0000e-005**	**1.0000e-005**	**0.3572**

3.5 Civil Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0524	0.4203	0.4442	7.7000e-004		0.0191	0.0191		0.0183	0.0183	0.0000	64.2802	64.2802	0.0126	0.0000	64.5942

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.0524**	**0.4203**	**0.4442**	**7.7000e-004**		**0.0191**	**0.0191**		**0.0183**	**0.0183**	**0.0000**	**64.2802**	**64.2802**	**0.0126**	**0.0000**	**64.5942**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	4.1100e-003	8.5000e-004	2.0000e-005	5.6000e-004	4.0000e-005	6.0000e-004	1.5000e-004	4.0000e-005	1.9000e-004	0.0000	1.8673	1.8673	1.0000e-005	2.9000e-004	1.9550
Vendor	3.1000e-004	0.0130	3.7800e-003	6.0000e-005	1.9500e-003	8.0000e-005	2.0400e-003	5.6000e-004	8.0000e-005	6.4000e-004	0.0000	5.6627	5.6627	3.0000e-005	8.5000e-004	5.9180
Worker	4.8500e-003	3.1500e-003	0.0386	1.0000e-004	0.0118	7.0000e-005	0.0119	3.1300e-003	6.0000e-005	3.1900e-003	0.0000	9.4866	9.4866	3.1000e-004	2.8000e-004	9.5783
Total	**5.2300e-003**	**0.0203**	**0.0433**	**1.8000e-004**	**0.0143**	**1.9000e-004**	**0.0145**	**3.8400e-003**	**1.8000e-004**	**4.0200e-003**	**0.0000**	**17.0165**	**17.0165**	**3.5000e-004**	**1.4200e-003**	**17.4514**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0524	0.4203	0.4442	7.7000e-004		0.0191	0.0191		0.0183	0.0183	0.0000	64.2801	64.2801	0.0126	0.0000	64.5941
Total	**0.0524**	**0.4203**	**0.4442**	**7.7000e-004**		**0.0191**	**0.0191**		**0.0183**	**0.0183**	**0.0000**	**64.2801**	**64.2801**	**0.0126**	**0.0000**	**64.5941**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	4.1100e-003	8.5000e-004	2.0000e-005	5.6000e-004	4.0000e-005	6.0000e-004	1.5000e-004	4.0000e-005	1.9000e-004	0.0000	1.8673	1.8673	1.0000e-005	2.9000e-004	1.9550
Vendor	3.1000e-004	0.0130	3.7800e-003	6.0000e-005	1.9500e-003	8.0000e-005	2.0400e-003	5.6000e-004	8.0000e-005	6.4000e-004	0.0000	5.6627	5.6627	3.0000e-005	8.5000e-004	5.9180
Worker	4.8500e-003	3.1500e-003	0.0386	1.0000e-004	0.0118	7.0000e-005	0.0119	3.1300e-003	6.0000e-005	3.1900e-003	0.0000	9.4866	9.4866	3.1000e-004	2.8000e-004	9.5783

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**5.2300e-003**	**0.0203**	**0.0433**	**1.8000e-004**	**0.0143**	**1.9000e-004**	**0.0145**	**3.8400e-003**	**1.8000e-004**	**4.0200e-003**	**0.0000**	**17.0165**	**17.0165**	**3.5000e-004**	**1.4200e-003**	**17.4514**

3.6 Energization - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.9500e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.9500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.9500e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Attachment C

Permitting Calculations

Rated Engine Power (hp)	673
Project	DWR SJV Projects
Air Basin	San Joaquin Valley
Nonattainment Classification for Ozone	Extreme
Nonattainment Classification for PM2.5	Serious
Number of Project Generators	123
Number of Hours per Day	24
Number of Hours per Year	1000
Air District	SJVAPCD

Source	Pollutant	Emission Factor (g-bhp-hr)	Individual Max Daily Emissions (lbs/day)	Exceed BACT Threshold?	Individual Generator Hourly Emissions (lbs/hr)	Individual Generator Annual Emissions (tons/year)	Facility Wide Hourly Emissions (lb/hr)	Facility Wide Daily Emissions (lbs/day)	Facility Wide Annual Emissions (tons/year)	Exceed Offsets Theshold?	Exceed Nonattainment Thresholds?
Generac - CA Unit	NOx	0.022	0.78	No	0.03	0.02	4.01	96.36	2.01	No	No
	VOC	0.006	0.21	No	0.01	0.00	1.09	26.28	0.55	No	No
	CO	0.062	2.21	Yes	0.09	0.05	11.31	271.55	5.66	Yes	No
	PM	0.036	1.28	No	0.05	0.03	6.57	157.68	3.28	No	No

Attachment D

DWR GHG Consistency Determination

Strategic Reliability Reserve Environmental Review for the Modesto Irrigation District Claribel Substation Site

DWR Consistency Determination Forms

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DWR GHG Emissions Reduction Plan Consistency Determination Form

For Projects Using Contractors or Other Outside Labor

Print Form

This form is to be used by DWR project managers to document a DWR CEQA project's consistency with the DWR Greenhouse Gas Emissions Reduction Plan. This form is to be used only when DWR is the Lead Agency and when contractors or outside labor and equipment are use to implement the project.

Additional Guidance on filling out this form can be found at:
dwrclimatecange.water.ca.gov/guidance_resources.cfm

The DWR Greenhouse Gas Emissions Reduction Plan can be accessed at:
http://www.water.ca.gov/climatechange/CAP.cfm

California Department of Water Resources
1416 9th Steet
Sacramento, CA
95814
dwrclimatechange.water.ca.gov
www.water.ca.gov/climatechange

Project Name:	Strategic Reliability Reserve Environmental Review for the Modesto Irrigation District Claribel Substation Site
Environmental Document type:	Self-Certification
Manager's Name:	
Manager's email:	
Division:	
Office, Branch, or Field Division	

Short Project Description:

The proposed project would include the installation of 123 natural gas generators manufactured and provided by Enchanted Rock, LLC. The generators would be installed in 25 sets arranged in rows; 24 rows would contain five generator units, and one would contain three units (see Figure 2-2 Project Site Layout). Associated infrastructure would also be installed, including 25 transformers and 25 generator step-up transformers (GSUs). Each of the generator sets (gensets) would be identical and have an engine rating of 673 horsepower. Operations of the gensets would be installed to provide back-up emergency power in the event the CAISO-controlled grid cannot support periods of peak demand, or to prevent grid failure during emergency periods such as extreme weather events. When in operation, the gensets would operate in grid synchronous mode at 400 kilowatt electric (kWe). The installed gensets would be capable of delivering emergency power at any time, but annual operations are not expected to exceed 300 hours per year. This would include monthly tests that are included as part of standard operations.

Project GHG Emissions Summary

Total Construction Emissions	132	$mtCO_2e$
Maximum Annual Construction Emissions	132	$mtCO_2e$

☒ All other emissions from the project not accounted for above will occur as ongoing operational, maintenance, or business activity emissions and therefore have already been accounted for and analyzed in the GGERP.

Extraordinary Construction Project Determination

Do total project construction emissions exceed 25,000 $mtCO_2e$ for the entire construction phase or exceed 12,500 $mtCO_2e$ in any single year of construction.

- ○ Yes - Addition analysis is required, consult with C4
- ◉ No - Additional analysis not required

Project GHG Reduction Plan Checklist

☒ All Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project. (Project Level GHG Emissions Reduction Measures)

Or

☒ All feasible Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project and and Measures not incorporated have been listed and determined not be apply to the proposed project (include as an attachment)

☒ Project does not conflict with any of the Specific Action GHG Emissions Reduction Measures (Specific Action GHG Emissions Reduction Measures)

Would implementation of the project result in additional energy demands on the SWP system of 15 GWh/yr or greater?

◯ Yes ◉ No

If you answered Yes, attach a Renewable Power Procurement Plan update approval letter from the DWR SWP Power and Risk Office.

Is there substantial evidence that the effects of the proposed project may be cumulatively considerable notwithstanding the proposed project's compliance with the requirements of the DWR GHG Reduction Plan?

◯ Yes ◉ No

If you answered Yes, the project is not eligible for streamlined analysis of GHG emissions using the DWR GHG Emissions Reduction Plan. (See CEQA Guidelines, section 15183.5, subdivision (b)(2).)

Based on the information provided above and information provided in associated environmental documentation completed pursuant to the above referenced project, the DWR CEQA Climate Change Committee has determined that the proposed project is consistent with the DWR Greenhouse Gas Reduction Plan and the greenhouse gasses emitted by the project are covered by the plan's analysis.

Project Manager Signature:		Date:
C4 Approval Signature:		Date:

Attachments:

☒ GHG Emissions Inventory

☐ List and Explanation of excluded Project Level GHG Emissions Reduction Measures

☐ Plan to update Renewable Energy Procurement Plan from DWR SWP Power and Risk Office