

Appendix B
Air Quality / Greenhouse Gases

AIR QUALITY & GREENHOUSE GAS IMPACT ASSESSMENT

FOR

RIDGECREST WASTEWATER TREATMENT PLANT PROJECT CITY OF RIDGECREST, CA

MARCH 2016

PREPARED FOR:



PREPARED BY:



612 12TH STREET, SUITE 201
PASO ROBLES, CA 93446

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- Appendix A: Federal Air Quality General Conformity Determination
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List of Common Terms & Acronyms

AAM	Annual Arithmetic Mean
AHERA	Asbestos Hazard Emergency Response Act
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CBSC	California Building Standards Code
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH ₄	Methane
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DPM	Diesel-Exhaust Particulate Matter or Diesel-Exhaust PM
DRRP	Diesel Risk Reduction Plan
EKAPCD	Eastern Kern Air Pollution Control District
FCAA	Federal Clean Air Act
GHG	Greenhouse Gases
HAP	Hazardous Air Pollutant
EKAPCD	East Kern Air Pollution Control District
MDAB	Mojave Desert Air Basin
NAWS	Naval Air Weapons Station
N ₂ O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NO _x	Oxides of Nitrogen
O ₃	Ozone
Pb	Lead
PM	Particulate Matter
PM ₁₀	Particulate Matter (less than 10 µm)
PM _{2.5}	Particulate Matter (less than 2.5 µm)
ppb	Parts per Billion
ppm	Parts per Million
ROG	Reactive Organic Gases
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
sq.ft.	Square Feet
TAC	Toxic Air Contaminant
TBACT	Toxic Best Available Control Technology
TOG	Total Organic Gases
µg/m ³	Micrograms per cubic meter
UNFCCC	United Nations Framework Convention on Climate Change
U.S. EPA	United State Environmental Protection Agency
VOC	Volatile Organic Gases
WWTP	Wastewater Treatment Plant

INTRODUCTION

This report describes the existing environment in the project vicinity and identifies potential air quality and greenhouse gas (GHG) impacts associated with the proposed project, including the analysis of two build alternatives. Air quality and GHG impacts were evaluated based on project-specific construction and operational information. The analysis was prepared in accordance with Eastern Kern Air Pollution Control District (EKAPCD)-recommended guidance. Mitigation measures were included for potentially significant impacts. No significant and unavoidable air quality or GHG impacts were identified.

PROPOSED PROJECT OVERVIEW

Project Location

The City of Ridgecrest (City) is located in the northeast corner of Kern County, in the southern portion of the Indian Wells Valley. This area is situated within the upper Mojave Desert, approximately 110 miles east of Bakersfield and 115 miles northeast of Los Angeles. The area is loosely bounded by four mountain ranges: the Sierra Nevada to the west, the Coso Range to the north, the Argus Range on the east, and the El Paso Mountains to the south. The proposed project location is depicted in Figure 1.

Project Build Alternatives

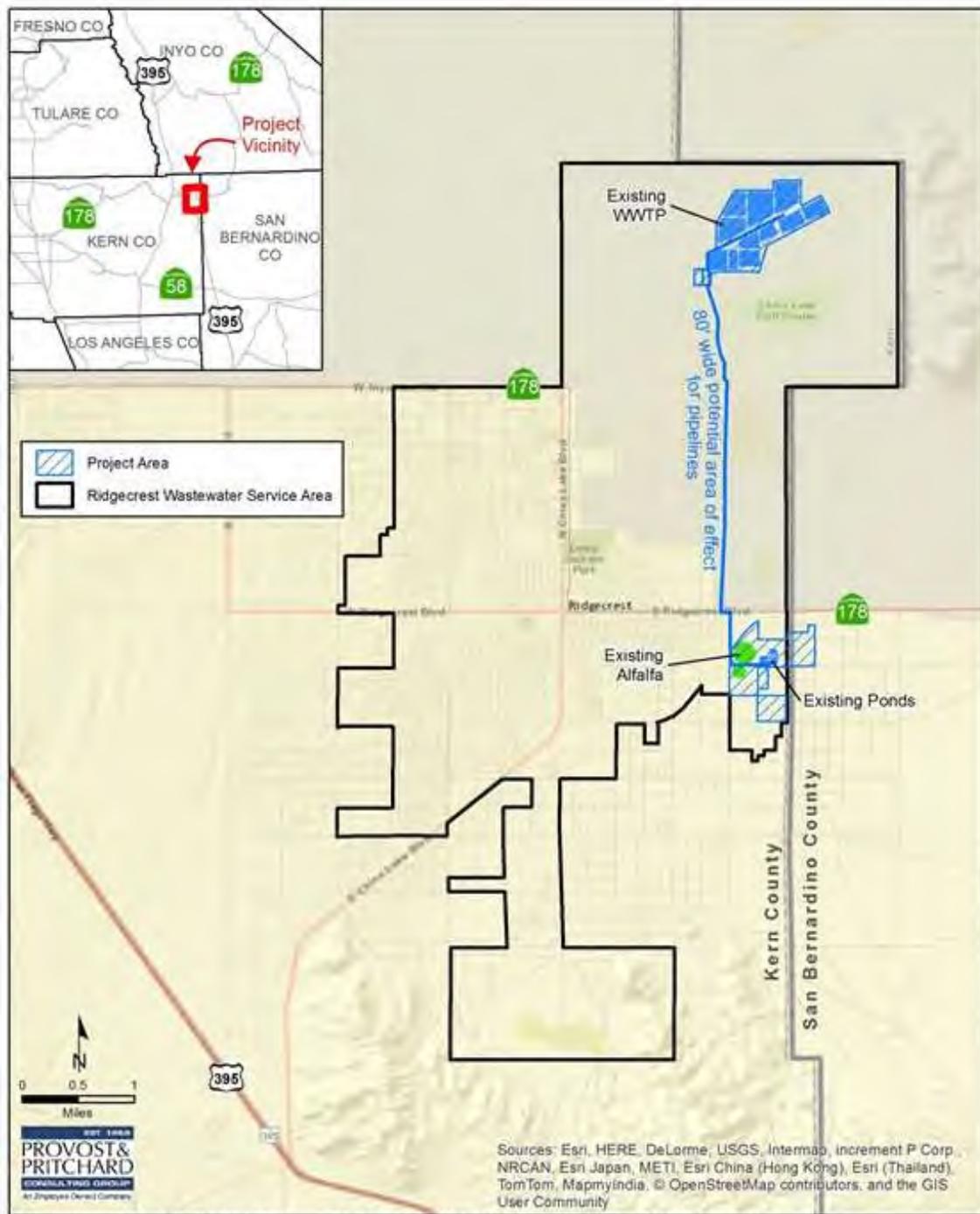
Build Alternatives 1 and 2 have numerous components in common, including sites to be utilized, facilities to be constructed and operated (although locations of those facilities may vary) and treatment capacity. Build Alternatives 1 and 2 are depicted in Figure 2 and Figure 3, respectively.

Build Alternatives 1 and 2 occupy largely the same physical sites and will contain the same type, size, and intensity of treatment facilities. The primary differences between these two alternatives relate to the physical location of the wastewater treatment plant (WWTP), the presence or absence of a new raw wastewater lift station at the Naval Air Weapons Station (NAWS) site, construction of a small segment of 24-inch sewer main, and a force main from the new lift station to the City site. Under Alternative 1, the WWTP would be constructed on approximately 7.4 acres at the NAWS site, adjacent and to the west of the existing WWTP. Under Build Alternative 2, the WWTP would be constructed on approximately 10 acres at the City site, adjacent and to the southwest of the existing wastewater ponds. As noted above, both of the build alternatives require the continued operation and potential upgrades to the existing four-mile underground effluent pipeline, continued operation of the wastewater disposal ponds at the NAWS site and City site, and the construction of an additional 90 acres of ponds at the City site. If the City implements the disinfected tertiary recycled water component of the project, a recycled purple water pipe distribution system will be constructed from the selected WWTP site to the China Lake NAWS Site, the NAWS golf course, schools, parks, and landscaped areas. The pipeline is expected to be constructed within the existing rights-of-way of Richmond Road, the Drummond Road alignment south of Burroughs High School, French Avenue past Leroy Johnson Park, Balsam Street to Ridgecrest Blvd, then on South Warner Street to Freedom Park. All pipelines for the distribution of the recycled water will be analyzed under a subsequent CEQA document. Under the No-Project Alternative, the City would continue to operate and maintain its existing WWTP at the China Lake NAWS, the wastewater disposal ponds located at the NAWS and City sites, and the existing four-mile effluent force main.

NEARBY LAND USES & SENSITIVE RECEPTORS

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term sensitive receptors refer to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include facilities that house or attract children, the elderly, people with illnesses, or others who are especially

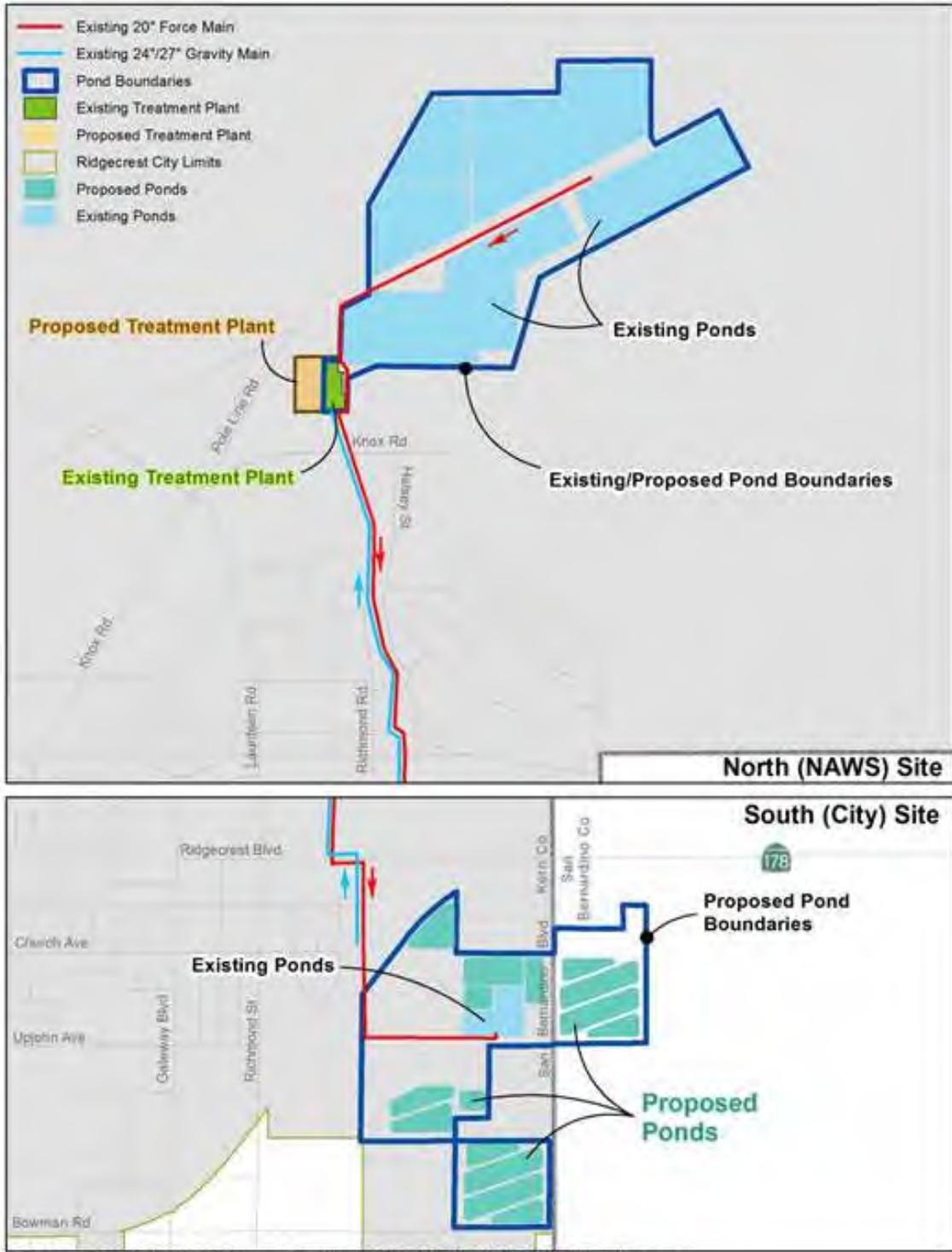
**Figure 1
Project Location**



G:\Ridgecrest_City of 2030\203010B1-Ridgecrest City Advisor-WWTP\GIS\T5-CEQA\MAP\Final Draft\Project_Area.mxd

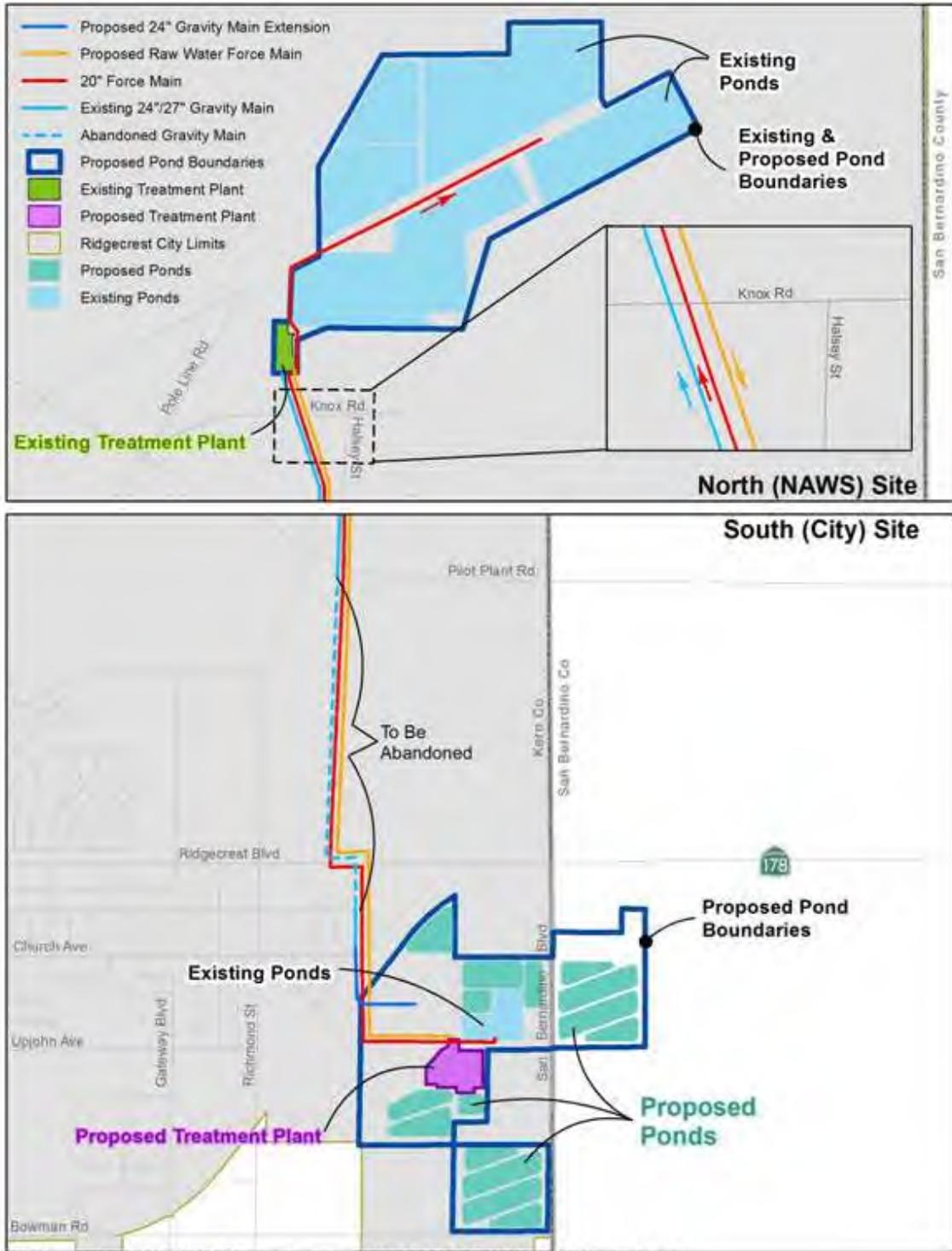
Source: Provost & Pritchard 2016

**Figure 2
Build Alternative 1**



Source: Provost & Pritchard 2016

**Figure 3
Build Alternative 2**



Source: Provost & Pritchard 2016

sensitive to the effects of air pollutants. Residential dwellings, schools, parks, playgrounds, childcare centers, convalescent homes, and hospitals are examples of sensitive land uses.

The nearest sensitive receptors consist predominantly of residential dwellings. The nearest residences are generally located approximately 1,575 feet to the southeast of the existing WWTP. Residential land uses are also generally located to the east of the existing ponds located to the south of Ridgecrest Boulevard, adjacent to and east of San Bernardino Boulevard, and approximately 1,500 feet to the west of the ponds.

AIR QUALITY

EXISTING SETTING

The project is located within the Mojave Desert Air Basin (MDAB). The MDAB consists of the eastern half of Kern County, the northern desert portion of Los Angeles County, eastern Riverside County, and a majority of San Bernardino County. Eastern Kern County is within the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD).

The MDAB covers a large part of the California's high desert. The MDAB includes the eastern half of Kern County, the northern part of Los Angeles County, most of San Bernardino County except for the southwest corner, and the eastern edge of Riverside County. It is separated from the South Coast Air Basin, to its south, by the San Gabriel and San Bernardino Mountains. It is separated from the San Joaquin Valley, to the northwest, by the Tehachapi Mountains and the south end of the Sierra Nevada (ARB 2001).

Although the eastern part of the MDAB is sparsely populated, the area just north of the San Gabriel and San Bernardino Mountains supports a large population, including the communities of Lancaster, Palmdale, Victorville, Hesperia, Apple Valley, and Barstow. Emissions from these areas, as well as military bases, highways railroad facilities, cement manufacturing, and mineral processing activities within the MDAB contribute to the region's ozone precursor emissions (ARB 2001).

The MDAB is also impacted by emissions from the San Joaquin Valley and the South Coast, although local emissions also contribute to poor air quality. The portion of the Mojave Desert immediately to the north of the San Gabriel and San Bernardino Mountains is heavily impacted by transport from the South Coast. Air monitoring stations at Hesperia and Phelan show the impact of surface transport through the Cajon Pass. In addition, transport aloft carries pollutants over the mountains to impact a broad area including Twentynine Palms and Lancaster-Palmdale areas. The air basin receives pollutants from the San Joaquin Valley as well. The area immediately downwind of Tehachapi Pass receives pollutants from the southern San Joaquin Valley. Violations in the town of Mojave in the eastern portion of Kern County are attributed entirely to this transport. The influence of pollutants from the San Joaquin Valley extends as far as Lancaster (ARB 2001).

CRITERIA AIR POLLUTANTS

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) required that the United States Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. Standards established for the protection of human health are referred to as primary standards; whereas, standards established for the prevention of environmental and property damage are called secondary standards. The FCAA allows states to adopt additional or more health-protective standards. The air quality regulatory framework and ambient air quality standards are discussed in greater detail later in this report.

The following provides a summary discussion of the primary and secondary criteria air pollutants of primary concern. In general, primary pollutants are directly emitted into the atmosphere, and secondary pollutants are formed by chemical reactions in the atmosphere.

Ozone (O₃) is a reactive gas consisting of three atoms of oxygen. In the troposphere, it is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when NO_x and volatile organic compounds (VOC), also referred to as reactive organic gases (ROG) react in the presence of sunlight. Ozone at the earth's surface causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation.

High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill communities, agricultural crops, and some man-made materials, such as rubber, paint, and plastics.

Reactive Organic Gas (ROG) is a reactive chemical gas, composed of hydrocarbon compounds that may contribute to the formation of smog by their involvement in atmospheric chemical reactions. No separate health standards exist for ROG as a group. Because some compounds that make up ROG are also toxic, like the carcinogen benzene, they are often evaluated as part of a toxic risk assessment. Total Organic Gases (TOGs) includes all of the ROGs, in addition to low reactivity organic compounds like methane and acetone. ROGs and VOC are subsets of TOG.

Volatile Organic Compounds (VOC) are hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and may also be toxic. VOC emissions are a major precursor to the formation of ozone. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.

Oxides of Nitrogen (NO_x) are a family of gaseous nitrogen compounds and is a precursor to the formation of ozone and particulate matter. The major component of NO_x, nitrogen dioxide (NO₂), is a reddish-brown gas that is toxic at high concentrations. NO_x results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Particulate Matter (PM), also known as particle pollution, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. U.S. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. U.S. EPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles (PM_{2.5-10})," such as those found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. PM_{2.5-10} is deposited in the thoracic region of the lungs.
- "Fine particles (PM_{2.5})," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very small particles less than 0.1 micrometers in diameter largely resulting from the combustion of fossil fuels, meat, wood and other hydrocarbons. While UFP mass is a small portion of PM_{2.5}, its high surface area, deep lung penetration, and transfer into the bloodstream can result in disproportionate health impacts relative to their mass.

PM₁₀, PM_{2.5}, and UFP include primary pollutants (emitted directly to the atmosphere) as well as secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, PM_{2.5} and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM₁₀ sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust.

Numerous scientific studies have linked both long- and short-term particle pollution exposure to a variety of health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and also acute (short-term) bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short term exposures, although they may experience temporary minor irritation when particle levels are elevated.

Carbon Monoxide (CO) is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone). The main source of CO is on-road motor vehicles. Other CO sources include other mobile sources, miscellaneous processes, and fuel combustion from stationary sources. Because of the local nature of CO problems, California Air Resources Board (ARB) and U.S. EPA designate urban areas as CO nonattainment areas instead of the entire basin as with ozone and PM₁₀. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1985, despite increases in vehicle miles traveled, with the introduction of new automotive emission controls and fleet turnover.

Sulfur Dioxide (SO₂) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. However, like airborne NO_x, suspended SO_x particles contribute to the poor visibility. These SO_x particles can also combine with other pollutants to form PM_{2.5}. The prevalence of low-sulfur fuel use has minimized problems from this pollutant.

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically.

Hydrogen Sulfide (H₂S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations; especially in enclosed spaces (800 ppm can cause death). OSHA regulates workplace exposure to H₂S.

Other Pollutants

The State of California has established air quality standards for some pollutants not addressed by Federal standards. The ARB has established State standards for hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. The following section summarizes these pollutants and provides a description of the pollutants' physical properties, health and other effects, sources, and the extent of the problems.

Sulfates (SO₄²⁻) are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO₂ during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO₂ to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The ARB sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilator function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to the fact that they are usually acidic, can harm ecosystems and damage materials and property.

Visibility Reducing Particles: Are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Vinyl Chloride (C₂H₃Cl or VCM) is a colorless gas that does not occur naturally. It is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloro-ethylene are broken down. Vinyl chloride is used to make polyvinyl chloride which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

ODORS

Typically, odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e. irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Odors from domestic wastewater are typically a result of anaerobic biological activity in the sewer collection and wastewater treatment systems. Odors are most prevalent during warm weather conditions, which favor a more rapid multiplication of the anaerobic bacteria. In addition, sewage containing industrial wastes may have odor problems compounded by organic gases from waste chemicals added to the sewer system. The anaerobic decomposition of compounds containing nitrogen and sulfur results in a number of gases, including hydrogen sulfide, ammonia, carbon dioxide, methane, nitrogen, oxygen and hydrogen. Although many different combinations of gases can occur at any given time, the most offensive odors associated with domestic wastewater are typically the result of emissions of hydrogen sulfide gas.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. The EKAPCD does not have an individual rule or regulation that specifically addresses odors; however, odors would be subject to EKAPCD's *Rule 419, Nuisance*. Any actions related to odors would be based on citizen complaints to local governments and the EKAPCD.

TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered "criteria pollutants" under either the FCAA or the California Clean Air Act (CCAA), and are thus not subject to National or California ambient air quality standards (NAAQS and CAAQS, respectively). Instead, the U.S. EPA and the ARB regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with EKAPCD rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. The following provides a summary of the primary TACs of concern within the State of California and related health effects:

Diesel Exhaust Particulate Matter (Diesel Exhaust PM or DPM) was identified as a TAC by the ARB in August 1998. DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 40 percent of the statewide total, with an additional 57 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about 3 percent of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report DPM emissions also include heavy construction, manufacturers of asphalt paving materials and blocks, and diesel-fueled electrical generation facilities (ARB 2013).

In October 2000, the ARB issued a report entitled: "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles", which is commonly referred to as the Diesel Risk Reduction Plan (DRRP). The DRRP provides a mechanism for combating the DPM problem. The goal of the DRRP is to reduce concentrations of DPM by 85 percent by the year 2020, in comparison to year 2000 baseline emissions. The key elements of the DRRP are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, and to lower the sulfur content of diesel fuel to protect new, and very effective, advanced technology emission control devices on diesel engines. When fully implemented, the DRRP will significantly reduce emissions from both old and new diesel fueled motor vehicles and from stationary sources that burn diesel fuel. In addition to these strategies, the ARB continues to promote the use of alternative fuels and electrification. As a result of these actions, DPM concentrations and associated health risks in future years are projected to decline (ARB 2013).

Exposure to DPM can have immediate health effects. DPM can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, Exposure to DPM also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can also reduce lung function in children. In California, DPM has been identified as a carcinogen.

Acetaldehyde is a federal hazardous air pollutant. The ARB identified acetaldehyde as a TAC in April 1993. Acetaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Sources of acetaldehyde include emissions from combustion processes such as exhaust from mobile sources and fuel combustion from stationary internal combustion engines, boilers, and process heaters. A majority of the statewide acetaldehyde emissions can be attributed to mobile sources, including on-road motor vehicles, construction and mining equipment, aircraft, recreational boats, and agricultural equipment. Area sources of emissions include the burning of wood in residential fireplaces and wood stoves. The primary stationary sources of acetaldehyde are from fuel combustion from the petroleum industry (ARB 2013).

Acute exposure to acetaldehyde results in effects including irritation of the eyes, skin, and respiratory tract. Symptoms of chronic intoxication of acetaldehyde resemble those of alcoholism. The U.S. EPA has classified acetaldehyde as a probable human carcinogen. In California, acetaldehyde was classified on April 1, 1988, as a chemical known to the state to cause cancer (U.S. EPA 2014; ARB 2013).

Benzene is highly carcinogenic and occurs throughout California. The ARB identified benzene as a TAC in January 1985. A majority of benzene emitted in California (roughly 88 percent) comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. These sources include on-road motor vehicles, recreational boats, off-road recreational vehicles, and lawn and garden equipment. Benzene is also formed as a partial combustion product of larger aromatic fuel components. To a lesser extent, industry-related stationary sources are also sources of benzene emissions. The primary stationary sources of reported benzene emissions are crude petroleum and natural gas mining, petroleum refining, and electric generation that involves the use of petroleum products. The primary area sources include residential combustion of various types such as cooking and water heating (ARB 2013).

Acute inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidences of leukemia (cancer of the tissues that form white blood cells) have been observed in humans occupationally exposed to benzene. The U.S. EPA has classified benzene as known human carcinogen for all routes of exposure (U.S. EPA 2014).

1,3-butadiene was identified by the ARB as a TAC in 1992. Most of the emissions of 1,3-butadiene are from incomplete combustion of gasoline and diesel fuels. Mobile sources account for a majority of the total statewide emissions. Additional sources include agricultural waste burning, open burning associated with forest management, petroleum refining, manufacturing of synthetics and man-made materials, and oil and gas extraction. The primary natural sources of 1,3-butadiene emissions are wildfires (ARB 2013).

Acute exposure to 1,3-butadiene by inhalation in humans results in irritation of the eyes, nasal passages, throat, and lungs. Epidemiological studies have reported a possible association between 1,3-butadiene exposure and cardiovascular diseases. Epidemiological studies of workers in rubber plants have shown an association between 1,3-butadiene exposure and increased incidence of leukemia. Animal studies have reported tumors at various sites from 1,3-butadiene exposure. In California, 1,3-butadiene has been identified as a carcinogen.

Carbon Tetrachloride was identified by the ARB as a TAC in 1987 under California's TAC program (ARB 2013). The primary stationary sources reporting emissions of carbon tetrachloride include chemical and allied product manufacturers and petroleum refineries. In the past, carbon tetrachloride was used for dry cleaning and as a grain-fumigant. Usage for these purposes is no longer allowed in the United States. Carbon tetrachloride has not been registered for pesticidal use in California since 1987. Also, the use of carbon tetrachloride in products to be used indoors has been discontinued in the United States. The statewide emissions of carbon tetrachloride are small (about 1.96 tons per year), and background concentrations account for most of the health risk (ARB 2013).

The primary effects of carbon tetrachloride in humans are on the liver, kidneys, and central nervous system. Human symptoms of acute inhalation and oral exposures to carbon tetrachloride include headache, weakness, lethargy, nausea, and vomiting. Acute exposures to higher levels and chronic (long-term) inhalation or oral exposure to carbon tetrachloride produces liver and kidney damage in humans. Human data on the carcinogenic effects of carbon tetrachloride are limited. Studies in animals have shown that ingestion of carbon tetrachloride increases the risk of liver cancer. In California, carbon tetrachloride has been identified as a carcinogen.

Hexavalent chromium was identified as a TAC in 1986. Sources of Hexavalent chromium include industrial metal finishing processes, such as chrome plating and chromic acid anodizing, and firebrick lining of glass furnaces. Other sources include mobile sources, including gasoline motor vehicles, trains, and ships (ARB 2013).

The respiratory tract is the major target organ for hexavalent chromium toxicity, for acute and chronic inhalation exposures. Shortness of breath, coughing, and wheezing were reported from a case of acute exposure to hexavalent chromium, while perforations and ulcerations of the septum, bronchitis, decreased pulmonary function, pneumonia, and other respiratory effects have been noted from chronic exposure. Human studies have clearly established that inhaled hexavalent chromium is a human carcinogen, resulting in an increased risk of lung cancer. In California, hexavalent chromium has been identified as a carcinogen.

Para-Dichlorobenzene was identified by the ARB as a TAC in April 1993. The primary area-wide sources that have reported emissions of para-dichlorobenzene include consumer products such as non-aerosol insect repellants and solid/gel air fresheners. These sources contribute nearly all of the statewide para-dichlorobenzene emissions (ARB 2013).

Acute exposure to paradichlorobenzene via inhalation results in irritation to the eyes, skin, and throat in humans. In addition, long-term inhalation exposure may affect the liver, skin, and central nervous system in humans. The U.S. EPA has classified para-dichlorobenzene as a possible human carcinogen.

Formaldehyde was identified by the ARB as a TAC in 1992. Formaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Photochemical oxidation is the largest source of formaldehyde concentrations in California ambient air. Directly emitted formaldehyde is a product of incomplete combustion. One of the primary sources of directly-emitted formaldehyde is vehicular exhaust. Formaldehyde is also used in resins, can be found in many consumer products as an antimicrobial agent, and is also used in fumigants and soil disinfectants. The primary area sources of formaldehyde emissions include wood burning in residential fireplaces and wood stoves (ARB 2013).

Exposure to formaldehyde may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air. Acute and chronic inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. Formaldehyde is classified as a probable human carcinogen.

Methylene Chloride was identified by the ARB as a TAC in 1987. Methylene chloride is used as a solvent, a blowing and cleaning agent in the manufacture of polyurethane foam and plastic fabrication, and as a solvent in paint stripping operations. Paint removers account for the largest use of methylene chloride in California, where methylene chloride is the main ingredient in many paint stripping formulations. Plastic product manufacturers, manufacturers of synthetics, and aircraft and parts manufacturers are stationary sources reporting emissions of methylene chloride (ARB 2013).

The acute effects of methylene chloride inhalation in humans consist mainly of nervous system effects including decreased visual, auditory, and motor functions, but these effects are reversible once exposure ceases. The effects of chronic exposure to methylene chloride suggest that the central nervous system is a

potential target in humans and animals. Human data are inconclusive regarding methylene chloride and cancer. Animal studies have shown increases in liver and lung cancer and benign mammary gland tumors following the inhalation of methylene chloride. In California, methylene chloride has been identified as a carcinogen.

Perchloroethylene was identified by the ARB as a TAC in 1991. Perchloroethylene is used as a solvent, primarily in dry cleaning operations. Perchloroethylene is also used in degreasing operations, paints and coatings, adhesives, aerosols, specialty chemical production, printing inks, silicones, rug shampoos, and laboratory solvents. In California, the stationary sources that have reported emissions of perchloroethylene are dry cleaning plants, aircraft part and equipment manufacturers, and fabricated metal product manufacturers. The primary area sources include consumer products such as automotive brake cleaners and tire sealants and inflators (ARB 2013).

Acute inhalation exposure to perchloroethylene vapors can result in irritation of the upper respiratory tract and eyes, kidney dysfunction, and at lower concentrations, neurological effects, such as reversible mood and behavioral changes, impairment of coordination, dizziness, headaches sleepiness, and unconsciousness. Chronic inhalation exposure can result in neurological effects, including sensory symptoms such as headaches, impairments in cognitive and motor neurobehavioral functioning, and color vision decrements. Cardiac arrhythmia, liver damage, and possible kidney damage may also occur. In California, perchloroethylene has been identified as a carcinogen.

ASBESTOS

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Serpentine rock often contains chrysotile asbestos. Serpentine rock, and its parent material, ultramafic rock, is abundant in the Sierra foothills, the Klamath Mountains, and Coast Ranges. The project site, however, is not located in an area of known ultramafic rock.

Additional sources of asbestos include building materials and other manmade materials. The most common sources are heat-resistant insulators, cement, furnace or pipe coverings, inert filler material, fireproof gloves and clothing, and brake linings. Asbestos has been used in the United States since the early 1900's; however, asbestos is no longer allowed as a constituent in most home products and materials. Many older buildings, schools, and homes still have asbestos containing products. Various other laws have also been adopted, including laws related to the control of asbestos-containing materials during the renovation and demolition of buildings.

All types of asbestos are hazardous and may cause lung disease and cancer. Health risks to people are dependent upon their exposure to asbestos. The longer a person is exposed to asbestos and the greater the intensity of the exposure, the greater the chances for a health problem. Asbestos-related disease, such as lung cancer, may not occur for decades after breathing asbestos fibers. Cigarette smoking increases the risk of lung cancer from asbestos exposure.

VALLEY FEVER

Valley fever is an infection caused by the fungus *Coccidioides*. The scientific name for valley fever is "coccidioidomycosis," and it's also sometimes called "desert rheumatism." The term "valley fever" usually refers to *Coccidioides* infection in the lungs, but the infection can spread to other parts of the body in severe cases.

Coccidioides spores circulate in the air after contaminated soil and dust are disturbed by humans, animals, or the weather. The spores are too small to see without a microscope. When people breathe in the spores, they are at risk for developing valley fever. After the spores enter the lungs, the person's body temperature allows the spores to change shape and grow into spherules. When the spherules get large enough, they break open and release smaller pieces (called endospores) which can then potentially spread within the

lungs or to other organs and grow into new spherules. In extremely rare cases, the fungal spores can enter the skin through a cut, wound, or splinter and cause a skin infection.

Symptoms of valley fever may appear between 1 and 3 weeks after exposure. Symptoms commonly include: fatigue, coughing, fever, shortness of breath, headaches, night sweats, muscle aches and joint pain, and rashes on the upper body or legs.

Approximately 5 to 10 percent of people who get valley fever will develop serious or long-term problems in their lungs. In an even smaller percent of people (about 1 percent), the infection spreads from the lungs to other parts of the body, such as the central nervous system (brain and spinal cord), skin, or bones and joints. Certain groups of people may be at higher risk for developing the severe forms of valley fever, such as people who have weakened immune systems. The fungus that causes valley fever, *Coccidioides*, can't spread from the lungs between people or between people and animals. However, in extremely rare instances, a wound infection with *Coccidioides* can spread valley fever to someone else, or the infection can be spread through an organ transplant with an infected organ.

For many people, the symptoms of valley fever will go away within a few months without any treatment. Healthcare providers choose to prescribe antifungal medication for some people to try to reduce the severity of symptoms or prevent the infection from getting worse. Antifungal medication is typically given to people who are at higher risk for developing severe valley fever. The treatment typically occurs over a period of roughly 3 to 6 months. In some instances, longer treatment may be required. If valley fever develops into meningitis life-long antifungal treatment is typically necessary.

Between the years 1998 to 2012, nearly 130,000 valley fever cases were reported to the Centers for Disease Control (CDC). In states where valley fever is endemic and reportable (Arizona, California, Nevada, New Mexico, and Utah), overall incidence in 2011 was 42.6 cases per 100,000 population and was highest among persons aged 60-79 years. In Kern County, there are approximately 500 cases of Valley Fever reported in a typical year. However, during epidemic years, the number of reported cases can increase to 1,500, or more. The number of reported cases within Kern County during the last four years has ranged from a low of 1,724 in 2013 to a high of 2,745 in 2011. During epidemic years, deaths due to valley fever increase to more than 12 people per year (KCPHS 2015).

Scientists continue to study how weather and climate patterns affect the habitat of the fungus that causes valley fever. *Coccidioides* is thought to grow best in soil after heavy rainfall and then disperse into the air most effectively during hot, dry conditions. For example, hot and dry weather conditions have been shown to correlate with an increase in the number of valley fever cases in Arizona and in California. The ways in which climate change may be affecting the number of valley fever infections, as well as the geographic range of *Coccidioides*, isn't known yet, but is a subject for further research (CDC 2014). Refer to Appendix A for additional information on valley fever.

AMBIENT AIR QUALITY

Air pollutant concentrations are measured at several monitoring stations in the MDAB. The Ridgecrest-100 West California Avenue and Mohave-923 Poole Street monitoring stations are the closest representative monitoring stations to the proposed project site with sufficient data to meet U.S. EPA and/or ARB criteria for quality assurance. The Ridgecrest-100 West California Avenue monitoring station monitors ambient concentrations of PM₁₀ and PM_{2.5}. Ambient concentrations of ozone were obtained from the Mohave-923 Poole Street monitoring station. Ambient monitoring data were obtained for the last three years of available measurement data (i.e., 2012 through 2014) and are summarized in Table 1. As depicted, the state and federal ozone and PM standards were exceeded on numerous occasions during the past 3 years.

**Table 1
Summary of Ambient Air Quality Monitoring Data**

Pollutant	Monitoring Year		
	2012	2013	2014
Ozone⁽¹⁾			
Maximum concentration (1-hour/8-hour average)	0.096/0.086	0.094/0.086	0.104/0.095
Number of days state/national 1-hour standard exceeded	1/0	0/0	9/0
Number of days state/national 8-hour standard exceeded	55/29	29/9	95/57
Suspended Particulate Matter (PM_{2.5})⁽²⁾			
Maximum concentration (state/national)	11.2/11.2	15.3/15.3	10.5/10.5
Annual Average (state/national)	NA/NA	NA/5.4	4.7/4.6
Suspended Particulate Matter (PM₁₀)⁽²⁾			
Maximum concentration (state/national)	41.5/43.3	51.4/56.4	47.6/51.8
Number of days state standard exceeded (measured/calculated) ⁽³⁾	0/0	1/NA	0/0
Number of days national standard exceeded (measured/calculated) ⁽³⁾	0/0	0/0	0/0
<p><i>ppm = parts per million by volume, $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter, NA=Not Available</i></p> <p>1. Based on ambient concentrations obtained from the Mohave-923 Poole Street Monitoring Station.</p> <p>2. Based on ambient concentrations obtained from the Ridgecrest-100 West California Avenue Monitoring Station</p> <p>3. Measured days are those days that an actual measurement was greater than the standard. Calculated days are estimated days that a measurement would have exceeded the standard had measurements been collected every day.</p> <p>Source: ARB 2016a</p>			

REGULATORY FRAMEWORK

Air quality within the NCCAB is regulated by several jurisdictions including the U.S. EPA, ARB, and the EKAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent.

FEDERAL

U.S. Environmental Protection Agency

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act

The FCAA required the U.S. EPA to establish NAAQS, and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in Table 2.

The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The U.S. EPA has responsibility to review all state SIPs to determine conformance with the mandates of the FCAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to

be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

**Table 2
Summary of Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards*	National Standards* (Primary)
Ozone (O ₃)	1-hour	0.09 ppm	–
	8-hour	0.070 ppm	0.075 ppm
Particulate Matter (PM ₁₀)	AAM	20 µg/m ³	–
	24-hour	50 µg/m ³	150 µg/m ³
Fine Particulate Matter (PM _{2.5})	AAM	12 µg/m ³	12 µg/m ³
	24-hour	No Standard	35 µg/m ³
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9 ppm	9 ppm
	8-hour (Lake Tahoe)	6 ppm	–
Nitrogen Dioxide (NO ₂)	AAM	0.030 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppb
Sulfur Dioxide (SO ₂)	AAM	–	0.03 ppm
	24-hour	0.04 ppm	0.14 ppm
	3-hour	–	0.5 ppm (1300 µg/m ³)**
	1-hour	0.25 ppm	75 ppb
Lead	30-day Average	1.5 µg/m ³	–
	Calendar Quarter	–	1.5 µg/m ³
	Rolling 3-Month Average	–	0.15 µg/m ³
Sulfates	24-hour	25 µg/m ³	No Federal Standards
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m ³)	
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m ³)	
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent.	
<p>* For more information on standards visit :http://www.arb.ca.gov/research/aaqs/aaqs2.pdf **Secondary Standard Source: ARB 2016b</p>			

National Emission Standards for Hazardous Air Pollutants

Pursuant to the FCAA of 1970, the U.S. EPA established the National Emission Standards for Hazardous Air Pollutants. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

STATE

California Air Resources Board

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The CAAQS are summarized in Table 2. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, SO₂, and NO₂ by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

Portable Equipment Registration Program

Owners or operators of portable engines and certain other types of equipment can register their units under the ARB's Statewide Portable Equipment Registration Program (PERP). PERP allows registered equipment to be operated throughout California without having to obtain individual permits from local air districts. To qualify, equipment must meet eligibility requirements, including applicable emissions standards.

REGULATORY ATTAINMENT DESIGNATIONS

Under the CCAA, the ARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment

designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, CO, and NO₂ as “does not meet the primary standards,” “cannot be classified,” or “better than national standards.” For SO₂, areas are designated as “does not meet the primary standards,” “does not meet the secondary standards,” “cannot be classified,” or “better than national standards.” However, the ARB terminology of attainment, nonattainment, and unclassified is more frequently used. The U.S. EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, U.S. EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM₁₀ based on the likelihood that they would violate national PM₁₀ standards. All other areas are designated “unclassified.”

EKAPCD is currently designated as a nonattainment area with respect to the state ozone, and PM₁₀ standards, as well as the national 8-hour ozone standard (EKAPCD 2016). The FCAA also requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The U.S. EPA has responsibility to review all state SIPs to determine conformance with the mandates of the FCAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

EAST KERN AIR POLLUTION CONTROL DISTRICT

The EKAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained. Responsibilities of the EKAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA. The EKAPCD Rules and Regulations that are applicable to the proposed project include, but are not limited to, the following:

- **Rule 201, Permits Required.** Rule 201 establishes permitting requirements for existing, modified and new stationary sources of emissions.
- **Rule 210.9, Construction or Reconstruction of Major Stationary Sources of Hazardous Air Pollutants.** Rule 210.9 requires all new and reconstructed major sources of hazardous air pollutants (HAPs) to utilize Best Available Control Technology for air toxics (TBACT).
- **Rule 402, Fugitive Dust.** Rule 402 addresses significant man-made dust sources from specified outdoor fugitive dust producing activities, which include: handling, storage, and transport of bulk storage piles, construction, demolition, excavation, extraction, and other earthmoving activities.
- **Rule 419, Nuisance.** Rule 419 states that a person shall not discharge, from any source, quantities of contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or that endanger the comfort, repose, health, or safety of such persons or the public or that cause or have a natural tendency to cause injury or damage to business or property.
- **Rule 422, New Source Performance Standards.** Rule 422 establishes standards, criteria and requirements that are applicable to new emission sources. Rule 422 incorporates the provisions of CFR Title 40, Chapter I, Parts 60. This regulation includes various requirements specific to new stationary sources of emissions including spark ignition internal combustion engines.

Kern County APCD California Clean Air Act Ozone Air Quality Attainment Plan

Kern County APCD's California Clean Air Act Ozone Air Quality Attainment Plan was approved by the ARB on February 18, 1993. The AQAP identifies measures to reduce emissions from stationary sources located within the EKAPCD. As a moderate ozone nonattainment area, EKAPCD is required to adopt retrofit Reasonably Available Control Technology rules and regulations for all sources of ozone precursor emissions. Transportation control measures are no longer included in the AQAP. The latest ozone attainment report, released in 2005, identified significant reductions in ozone emissions due, in part, to implementation of stationary source rules and regulations, as well as, reduction in pollutant transport from upwind locations (EKAPCD 2005).

CITY OF RIDGECREST

City of Ridgecrest General Plan

The City of Ridgecrest General Plan Health & Safety Element includes policies to reduce the generation of air pollutants, to promote alternative methods of transportation, and to maximize the quality of life of City residents. Applicable policies and implementation measures are summarized below (City of Ridgecrest 2009).

- **Policy HS-2.7 Construction Methods.** The City shall require developments to be located, designed and constructed in a manner that would minimize the production of air pollutants and avoid land use conflicts.
- **Policy HS-2.9 Air Pollution Control Technology.** The City shall utilize the Best Available Control Measures (BACM) and Reasonably Available Control Measures (RACM) as adopted by the City to maintain healthful air quality and high visibility standards. These measures shall be applied to new development approvals and permit modifications as appropriate.
- **Policy HS-2.10 Cumulative Air Quality Impacts.** The City shall require developments to be located, designed, and constructed in a manner that would minimize cumulative air quality impacts. Developers shall be required to present alternatives that reduce air emissions and enhance, rather than harm, the environment.
- **Policy HS-2.11 Dust Suppression Measures.** The City shall require developers to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to, the following:
 - Site watering or application of dust suppressants,
 - Phasing or extension of grading operations,
 - Covering of stockpiles,
 - Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour),
 - Revegetation of graded areas.
- **Policy HS-2.12 Indirect Source Review.** The City shall require major development projects, as defined by the EKAPCD, to mitigate air quality impacts associated with the project. As feasible the City shall work with EKAPCD to determine mitigations that may include, but are not limited to the following:
 - Providing bicycle access and parking facilities,
 - Increasing density,
 - Encouraging mixed use developments,
 - Providing walkable and pedestrian-oriented neighborhoods,
 - Providing increased access to public transportation,

- Providing preferential parking for high-occupancy vehicles, car pools, or alternative fuels vehicles,
- Establishing telecommuting programs or satellite work centers.
- **Policy HS-2.13 Paving or Treatment of Roadways for Reduced Air Emissions.** The City shall require that all new roads be paved or treated to reduce dust generation where feasible. For new projects with unpaved roads, funding for roadway maintenance shall be addressed and secured prior to development approval.

PROJECT IMPACTS

THRESHOLDS OF SIGNIFICANCE

The EKAPCD's *Guidelines for Implementation of the California Environmental Quality Act (CEQA) of 1970 (as amended 1999)* identifies the criteria to be used for the evaluation of air quality impacts. The guidelines include recommended thresholds of significance to be used for the evaluation of short-term construction, long-term operational, odor, toxic air contaminant, and cumulative air quality impacts. Projects that exceed these recommended thresholds would be considered to have a potentially significant impact to human health and welfare. The thresholds of significance are summarized, as follows:

- Conflicts with or obstructs implementation of the applicable air quality plan;
- Violates any air quality standard or contributes substantially to an existing or projected air quality violation;
- Results in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors). Specifically, if implementation of the project would exceed any of the following EKAPCD-recommended thresholds:
 - Operational and Construction Emission Sources:*
 - 25 tons per year for ROG
 - 25 tons per year for NO_x
 - 27 tons per year for SO_x (as SO₂)
 - 15 tons per year for PM₁₀
 - Operational – Indirect Sources (motor vehicles):*
 - 137 lbs per day of ROG
 - 137 lbs per day of NO_x
- Exposes sensitive receptors to substantial pollutant concentrations.
- Creates objectionable odors affecting a substantial number of people.

METHODOLOGY

Short-term construction emissions of were quantified using the California Emissions Estimator Model (CalEEMod), version 2013.2.2, based on estimated construction schedules, vehicle use, and off-road equipment anticipated to be required for construction. Emissions were calculated for both daily and annual conditions. Maximum daily and annual emissions were quantified based on the preliminary construction schedule anticipated to be required, including overlapping activities. Construction information would be similar for both build alternatives. Refer to Appendix A for emissions modeling assumptions and results.

Long-term operational emissions associated with energy use and motor vehicle use were quantified using the CalEEMod computer program based on project-specific information. Evaporative emissions associated with primary emission-source processes were quantified using flow-based emission factors derived from the *TriTAC Guidance Document on Control Technology for VOC Air Emissions from Publicly Owned Treatment Works (POTWs)*(1994). These emission factors were developed in a cooperative effort of POTWs and air regulatory agencies located in California. Emission factors contained in the TriTAC guidance document were derived from a combination of data generated by the Pooled Emissions Estimation Program (PEEP),

the Joint Emissions Inventory Program (JEIP) submitted to the SCAQMD per Rule 1179, and toxics inventories from individual California POTWs. Evaporative VOC emissions were calculated based on average-daily flow rates of 2.6 million gallons per day (mgd) for existing/no-build conditions and 3.6 mgd for proposed build conditions.

Long-term increases of toxic air contaminants were quantified based on emission factors derived from the *TriTAC Guidance Document on Control Technology for VOC Air Emissions from Publicly Operated Treatment Works* for primary TAC emission sources. Potential short-term exposure to TACs and associated health risks were assessed based on a screening-level health risk assessments prepared for onsite evaporative emissions of TACs and the proposed emergency generator. To ensure a conservative analysis, the generator was assumed to be diesel fueled. The generator was assumed to operate 200 hours per year, in accordance with EKAPCD's permitting limitations.

Localized concentrations of CO were qualitatively assessed utilizing commonly applied screening methodologies identified in Caltran's Transportation Project-Level Carbon Monoxide Protocol (CO Protocol, 1996). Mobile-source emissions of CO are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. For this reason, modeling of mobile-source CO concentrations is typically recommended for sensitive land uses located near signalized roadway intersections that are projected to operate at unacceptable levels of service (i.e., LOS E or F). Localized CO concentrations associated with the proposed project would be considered less-than-significant impact if: (1) traffic generated by the proposed project would not result in deterioration of a signalized intersection to a level of service (LOS) of E or F; or (2) the project would not contribute additional traffic to a signalized intersection that already operates at LOS of E or F. In instances where the project exceeds these screening criteria, detailed dispersion modeling is recommended to further evaluate potential impacts in comparison to applicable ambient air quality standards (Caltrans 1996).

Potential exposure of nearby sensitive receptors to odorous emissions was qualitatively assessed, based on a review of project-generated emissions, proposed treatment processes, the location of nearby sensitive receptors, and odor-complaint information obtained from the EKAPCD.

PROJECT IMPACTS

Impact AQ-1: Would the project conflict with or obstruct implementation of any applicable air quality plan?

Projects that would result in a significant increase in emissions, in excess of EKAPCD significance thresholds, would also be considered to potentially conflict with or obstruct implementation of applicable air quality attainment plans. As noted in Impact AQ-3, the proposed project alternatives would not result in significant short-term or long-term increases of criteria air pollutants that would exceed applicable thresholds. As a result, implementation of the proposed project is not anticipated to result in a substantial increase in either direct or indirect emissions that would conflict with or obstruct implementation of applicable air quality plans. This impact is considered *less than significant*. (Refer to Impacts AQ-3 for a more detailed discussion of air quality impacts.)

Impact AQ-2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

As discussed in Impacts AQ-3, construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses. As a result, short-term construction-generated emissions of fugitive dust would be considered to have a *potentially significant* impact. This impact is

considered *potentially significant*. With implementation of Mitigation Measure AQ-1, this impact would be considered *less than significant*. (Refer to Impacts AQ-3 and AQ-4 for additional discussion of air quality impacts.)

Impact AQ-3: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Short-term Construction

Construction of improvements for both build alternatives would be similar, including the construction of treatment basins, clarifiers, lift stations, oxidation ditches, solids handling facilities, disinfection, and associated appurtenances. Most of the area within either the City site or the NAWS site will be disturbed and the resulting improvements will consist of basins, buildings, and paved or gravel areas. Construction of the proposed improvements for both alternatives would occur over an estimated 24-month period, beginning in 2017. The project's construction schedule would depend on a number of factors including regulatory approvals, funding commitments, and contractor availability and scheduling.

Short-term increases in emissions would occur during the construction process. Construction-generated emissions are of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. The construction of the proposed project would result in the temporary generation of emissions associated with various activities, including site preparation, grading, excavation, concrete work, installation of piping and electrical, and building construction. Emissions would be largely associated with off-road equipment use. Estimated construction-generated emissions are summarized in Table 3.

During the initial year of construction, the proposed project would generate maximum uncontrolled annual emissions of approximately 0.4 tons/year of ROG, 4.7 tons/year of NO_x, 3.2 tons/year of CO, 0.7 tons/year of PM₁₀, and 0.4 tons/year of PM_{2.5}. During the second year of construction, the proposed project would generate maximum uncontrolled annual emissions of approximately 0.2 tons/year of ROG, 1.7 tons/year of NO_x, 1.3 tons/year of CO, 0.1 tons/year of PM₁₀ and PM_{2.5}. Daily indirect construction-generated emissions of ROG and NO_x would be less than one pound per day. Construction-generated emissions would not exceed applicable EKAPCD significance thresholds. However, construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses. As a result, short-term construction-generated emissions of fugitive dust would be considered to have a *potentially significant* impact.

**Table 3
Uncontrolled Construction-Generated Emissions of Criteria Air Pollutants
Project Alternatives 1 & 2**

Construction Activity	Annual Emissions (Tons/Year) ⁽¹⁾					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Construction Year 1						
Mobilization	0.0	0.02	0.06	0.00	0.01	0.00
Grading & Site Work	0.13	1.48	0.99	0	0.20	0.13
Excavation	0.23	2.69	1.76	0.0	0.43	0.26
Concrete Work	0.02	0.21	0.16	0.00	0.02	0.01
Equipment Installation	0.02	0.23	0.12	0.00	0.01	0.01
Site Piping & Electrical	0.01	0.08	0.08	0.00	0.01	0.01
Total:	0.42	4.70	3.17	0.00	0.68	0.42
Significance Thresholds:	25	25	--	27	15	--
Exceed Thresholds?	No	No	N/A	No	No	N/A
Construction Year 2						
Concrete Work	0.03	0.28	0.24	0.00	0.02	0.02
Equipment Installation	0.07	0.69	0.35	0.00	0.04	0.04
Building Construction	0.02	0.10	0.13	0.00	0.02	0.01
Site Piping & Electrical	0.01	0.12	0.13	0.00	0.02	0.01
Final Grading & Paving	0.05	0.46	0.37	0.00	0.03	0.03
Startup	0.00	0.01	0.04	0.00	0.01	0.00
Total:	0.18	1.66	1.25	0.00	0.14	0.10
Significance Thresholds:	25	25	--	27	15	--
Exceed Thresholds?	No	No	N/A	No	No	N/A
Daily Indirect Emissions (lbs/day)⁽¹⁾						
Construction Activity	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Worker & Haul Truck Trips	0.3	1.1	4.6	0.0	1.1	0.3
Significance Thresholds ² :	137	137	--	--	--	--
Exceed Thresholds?	No	No	N/A	N/A	N/A	N/A
<p><i>Emissions were quantified using CalEEMod, version 2013.2.2. Totals may not sum due to rounding.</i></p> <p><i>1. EKAPCD daily emissions threshold applies to indirect on-road mobile-sources only. These thresholds typically apply to operational emissions, but have been included to ensure a conservative analysis of construction-generated emissions.</i></p> <p><i>-- No applicable threshold.</i></p> <p><i>Refer to Appendix B for modeling results and assumptions.</i></p>						

Mitigation Measures

AQ-1: The following measures for the control of construction-generated PM shall be implemented:

- a. Vehicle speed for all on-site construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads.
- b. All onsite unpaved roads and offsite unpaved project-site access road(s) shall be effectively stabilized of dust emissions using water or EKAPCD-approved dust suppressants/palliatives, sufficient to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g., worker commute periods, truck convoys, etc.) Reclaimed (non-potable) water shall be used to the extent available.
- c. Reduce and/or phase the amount of the disturbed area (e.g., grading, excavation) where possible.
- d. All disturbed areas shall be sufficiently watered or stabilized by an EKAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available.
- e. All clearing, grading, earth moving, and excavation activities will cease during periods when dust plumes of 20% or greater opacity affect public roads or nearby occupied structures.
- f. All disturbed areas anticipated to be inactive for periods of 30 days, or more, shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seedling, or wood chips.
- g. All active and inactive disturbed surface areas shall be compacted, where feasible.
- h. Limit equipment and vehicle access to disturbed areas.
- i. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities
- j. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20% opacity. If necessary and where feasible, 3-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust.
- k. Water shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust.
- l. Where acceptable to the fire department, weed control will be accomplished by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering.
- m. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114.
- n. Gravel pads, grizzly strips, or other material track-out control methods approved for use by the EKAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways.
- o. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or use rocks/grates at the project entry points, when necessary, to remove soil deposits and to minimize the track-out/deposition of soil onto nearby paved roadways.

- p. Paved road surfaces located adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available.
- q. Portable equipment, 50 horsepower (hp) or greater, used during construction activities (e.g., portable generators) shall be registered with California statewide portable equipment registration (issued by the California Air Resources Board) or permitted by EKAPCD.
- r. The designated construction monitor will document and immediately notify EKAPCD of any air quality complaints received. If necessary, the applicant and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints.
- s. Off-road equipment shall be maintained and properly tuned in accordance with manufacturer recommendations.
- t. The owner/operator shall require that off-road diesel engines be shut off when not in use for more than five minutes to reduce emissions from idling, to the extent possible.
- u. Alternatively fueled equipment (e.g., electric, propane, etc.), in lieu of diesel- or gasoline-fueled equipment, shall be used whenever possible and to the extent available.
- v. All on-road and off-road equipment shall be fitted with emission control devices (e.g., diesel particulate filters, oxidation catalysts, etc.), per manufacturer recommendations.
- w. The on-site idling of on-road diesel fueled trucks shall be restricted to no more than 5 minutes, per ARB engine idling limitations, excluding vehicles that need to idle as part of their operation, such as concrete mixer trucks.

Level of Significance after Mitigation

Implementation of the proposed mitigation measures would reduce fugitive dust emissions by approximately 50 to 61 percent. Additional measures have also been included that would reduce emissions of diesel PM from on-road vehicles and off-road equipment. Implementation of the proposed mitigation measures would also ensure compliance with applicable EKAPCD rules and regulations, including Rule 402, which imposes limitations on visible dust emissions at offsite locations and Rule 419 for nuisance-related impacts. With mitigation, this impact would be considered *less than significant*.

Long-term Operation

As noted earlier in this report, emissions of ozone-precursor pollutants (i.e., VOCs and NO_x) are the regional pollutants of primary concern within the basin. Primary emission sources associated with the operation of the WWTP include evaporative emissions of VOCs that occur during the treatment process, mobile-source emissions associated with the vehicle trips to and from the facility, as well as occasional emissions from onsite stationary combustion sources. Operational emissions associated with the plant's primary emission sources are discussed separately, as follows:

Wastewater Treatment Evaporative Emissions

Evaporative emissions of VOCs are typically associated with water treatment facilities that contain high levels of VOCs in the wastewater influent, such as water treatment facilities at industrial and agricultural uses. Wastewater influent at municipal WWTPs typically includes influent generated by residential, institutional, and commercial land uses, which typically contain only trace levels of VOCs. The City of Ridgecrest's sewer service area is primarily comprised of residential, retail, and light commercial/industrial uses. As a result, the waste sources and evaporative emissions of VOCs associated with existing and proposed WWTP operations are anticipated to be minor.

For municipal WWTPs, a majority of the VOCs commonly found in wastewater influent are often associated with the use of paint solvents, cleaning solutions, degreasing solutions, gasoline, and pesticides. However, the amount and types of industrial operations with waste discharges into municipal sewer systems are typically considered negligible, in part, due to existing regulatory discharge requirements. For instance, the U.S. EPA has established pretreatment standards for the discharge of industrial pollutants to publicly owned wastewater treatment facilities as part of the National Pretreatment Program. In California, the Regional Water Quality Control Board (RWQCB) implements this program and determines whether industrial discharges within a sewer service area warrant the permittee being subject to the pretreatment regulations. Source control measures are often considered the most effective method of reducing concentrations of VOCs in wastewater influent from industrial facilities. With incorporation of industrial source control measures, evaporative emissions of VOCs from municipal WWTPs are typically minor and, as a result, municipal WWTPs are typically not considered major sources of VOCs.

Sources of VOCs at municipal WWTPs are primarily associated with processes that result in the surface volatilization of emissions, particularly during the activated sludge process and secondary clarification, as well as surface volatilization during the thickening, dewatering, and handling of biosolids. Evaporative emissions associated with primary emission-source processes were quantified using flow-based emission factors derived from the *TriTAC Guidance Document on Control Technology for VOC Air Emissions from POTWs* (1994). These emission factors were developed in a cooperative effort of publicly-owned treatment works (POTWs) and air regulatory agencies located in California. Emission factors contained in the TriTAC guidance document were derived from a combination of data generated by the Pooled Emissions Estimation Program (PEEP), the Joint Emissions Inventory Program (JEIP) submitted to the SCAQMD per Rule 1179, and toxics inventories from individual California POTWs. These emissions factors are flow-based, specific to the individual treatment processes, and are considered to provide a conservative estimation of emissions.

Evaporative emissions were quantified for existing/no-build and proposed project alternatives, based on an existing average-daily flow rate of 2.6 mgd and a proposed project average-daily flow rate of 3.6 mgd. Because the treatment processes for proposed project alternatives would be similar, evaporative emissions associated with the proposed project alternatives would be similar. Evaporative VOC emissions for existing conditions/no-build alternative and proposed project alternatives are summarized in Table 4.

Additional sources of criteria air pollutants would include minor emissions associated with motor vehicle use, energy use, area sources (e.g., use of cleaning products, architectural coatings, etc.) In comparison to existing operations, the proposed project alternatives would result in an increase of approximately 10 employee trips/day and roughly 48 haul truck trips/month. In addition, the proposed project alternatives would also include the installation of an emergency standby power generator for use during power outages. The generator will be sized to operate all essential pumps, process equipment, and control systems. Based on preliminary estimates, an approximate 750 kW generator would be required. The existing generator would be required to comply with EKAPCD's permitting requirements and operational limitations. Accordingly, the emergency standby power generator would only be operated for maintenance, testing, required regulatory purposes, and during emergency situations.

Operational emissions associated with existing and proposed project conditions, including evaporative VOC emissions and emissions from mobile, stationary, and area sources, are summarized in Table 5. In comparison to existing conditions, the proposed project alternatives would result in overall net increases of approximately 0.4 lbs/day of ROG, 0.5 lbs/day of NO_x, and 0.8 lbs/day of CO. Operational emissions of SO_x and PM would be negligible, approximately 0.04, or less. The proposed project alternatives would not result in increased emissions of criteria air pollutants that would exceed applicable significance thresholds. This impact is considered *less than significant*. No mitigation is required.

**Table 4
Wastewater Treatment Plant Process VOC Emissions**

Process	VOC Emissions (lbs/year) ¹
Existing Conditions/No-Build Alternative	
Headworks	0.3
Grit Removal	1.6
Primary Sedimentation	104.0
Flow Equalization	278.1
Activated Sludge	78.0
Secondary Clarifiers	31.2
Effluent Evaporation Ponds	1,361.3
Sludge Digestion	0.1
Sludge Drying Beds	33.8
Total Emissions (lbs/year):	1,966.3
Total Emissions (tons/year):	1.0
Proposed Build Alternatives	
Headworks	310.9
Grit Removal	2.2
Activated Sludge	108.0
Secondary Clarifiers	43.2
Effluent Filtration	1.1
Chlorination	1.6
Effluent Evaporation Ponds	1,884.8
Sludge Digestion	36.9
Sludge Dewatering	216.0
Sludge Cake Storage	22.0
Sludge Cake Truck Loading	6.3
Sludge Drying Beds	46.8
Total Emissions (lbs/year):	2,679.7
Total Emissions (tons/year):	1.3
<i>Emissions were calculated using emission factors derived from Tri-TAC Guidance Document on Control Technology for VOC Air Emissions from POTWs (1994) based on an average flow rate of 2.6 mgd for existing/no-project conditions and 3.6 mgd for proposed project build alternatives 1 and 2.</i>	

**Table 5
Summary of Operational Emissions of Criteria Air Pollutants
Direct & Indirect Sources**

Construction Activity	Annual Emissions (Tons/Year) ¹					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Existing Conditions/No-Build Alternative						
WWTP Process Emissions	1.0					
Area Sources	0.01	0.00	0.00	0.00	0.00	0.00
Motor Vehicle Use ²	0.00	0.02	0.05	0.00	0.01	0.00
<i>Total:</i>	<i>1.01</i>	<i>0.02</i>	<i>0.05</i>	<i>0.00</i>	<i>0.01</i>	<i>0.00</i>
Proposed Build Alternatives						
WWTP Process Emissions	1.3					
Area Sources	0.04	0.00	0.00	0.00	0.00	0.00
Emergency Generator ³	0.02	0.14	0.08	0.00	0.00	0.00
Motor Vehicle Use ⁴	0.05	0.36	0.72	0.00	0.05	0.02
<i>Total:</i>	<i>1.41</i>	<i>0.50</i>	<i>0.80</i>	<i>0</i>	<i>0.05</i>	<i>0.02</i>
<i>Net Increase Compared to Existing:</i>	<i>0.40</i>	<i>0.48</i>	<i>0.75</i>	<i>0</i>	<i>0.04</i>	<i>0.02</i>
<i>Significance Thresholds:</i>	<i>25</i>	<i>25</i>	<i>--</i>	<i>27</i>	<i>15</i>	<i>--</i>
<i>Exceed Thresholds?</i>	<i>No</i>	<i>No</i>	<i>N/A</i>	<i>No</i>	<i>No</i>	<i>N/A</i>
<p><i>1. Emissions were quantified using CalEEMod, version 2013.2.2. Emissions associated with energy use and waste generation are negligible. Daily indirect source emissions of ROG, NO_x, SO_x, and PM₁₀ for no-build and proposed build alternatives would be approximately 0.1 lbs/day, or less, and would not exceed EKAPCD's significance thresholds of 137 lbs/day.</i></p> <p><i>2. Assumes two employees daily; 16 septage haul truck trips monthly.</i></p> <p><i>3. Assumes a maximum of 200 hours annually, in accordance with EKAPCD permitting requirements.</i></p> <p><i>4. Assumes 12 employees daily; 24 septage and 30 biosolids removal haul truck trips monthly.</i></p> <p><i>-- No applicable threshold.</i></p> <p><i>Refer to Appendix B for modeling results and assumptions.</i></p>						

Impact AQ-4: Would the project expose sensitive receptors to substantial pollutant concentrations?

Short-term Exposure

Implementation of the proposed project would result in short-term emissions of fugitive PM associated with project construction. Localized pollutants of primary concern typically associated with construction projects are commonly associated with increased emissions of PM generated by ground disturbance, including site preparation and grading. However, as previously noted, the proposed project would not require the demolition of existing structures, nor would the proposed project result in emissions that would exceed EKAPCD significance thresholds. Compliance with applicable EKAPCD rules and regulations, including but not limited to Rule 402, would minimize potential nuisance impacts to occupants of nearby land uses and would also minimize potential exposure of nearby sensitive receptors to Coccidioides spores which may become airborne during soil disturbance activities (e.g., grading, excavation, etc.). As previously discussed, exposure to Coccidioides spores could result in increased occurrences of Valley Fever.

The project would also generate short-term emissions of diesel-exhaust PM. For sensitive land uses, the calculation of cancer risk associated with exposure of TACs is typically calculated based on a 70-year period of exposure. The use of diesel-powered construction equipment, however, would be temporary and episodic and would occur over a relatively short period (e.g., 24 months). For this reason, diesel-exhaust PM generated by project construction, in and of itself, would not be expected to create conditions where the probability of contracting cancer is greater than 10 in 1 million for nearby receptors.

Predicted increases in cancer risks associated with short-term exposure to diesel-exhaust emissions would be considered *less than significant*. However, because construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses and potential increases in occurrences of Valley Fever, this impact is considered *potentially significant*. With implementation of Mitigation Measure AQ-1 this impact would be considered *less than significant*. (Refer to Impacts AQ-3 for additional discussion of short-term air quality impacts.)

Long-term Exposure

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas formed when carbon in fuel is not burned completely; a component of combustion emissions. CO reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system, and impairs vision, causes dizziness, and can also lead to unconsciousness or death. Carbon monoxide transport is extremely limited and disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to emission sources, such as congested roadways or intersections, may reach unhealthy levels. Localized concentrations of CO can adversely affect nearby sensitive receptors (residents, school children, hospital patients, the elderly, etc.). As a result, CO emissions are typically evaluated at a local rather than regional level.

In comparison to existing conditions, the proposed build alternatives would result in an increase of approximately ten employee trips/day and roughly 38 haul truck trips/month. The proposed build alternatives would not result in a substantial increase in vehicle trips that would affect nearby intersection operations. As a result, implementation of the proposed project would not result in a significant contribution to nearby roadway intersections. Based on this information and given the relatively low background CO concentrations in the project area, this impact would be considered *less than significant*. No mitigation is required.

Toxic Air Contaminants

Increases of TACs associated with the proposed project alternatives would be primarily associated with the operation of the proposed onsite emergency generator (if diesel powered), as well as, evaporative emissions of TACs from onsite treatment processes. TAC emissions and associated health risks associated with the proposed project alternatives are discussed, as follows:

Emergency Generator (Alternatives 1 & 2)

As previously noted, the proposed project alternatives would include the installation of an emergency standby power generator for use during power outages. The specifications for the generator, including size and fuel source, have not yet been identified. However, based on preliminary estimates, an approximate 750 kW generator would be required. The existing generator would be required to comply with EKAPCD's permitting requirements and operational limitations. Accordingly, the emergency standby power generator would only be operated for maintenance, testing, required regulatory purposes, and during emergency situations. The emergency generator would be located at the proposed WWTP. Under Alternative 1, the nearest sensitive receptors include residential dwellings located approximately 1,750 feet to the southeast of the proposed plant. Under Alternative 2, nearest residences are located approximately 960 feet to the east of the proposed plant.

A screening-level health risk assessment was conducted for the proposed emergency generator. To ensure a conservative analysis, the generator was assumed to be diesel fueled. The generator was assumed to operate 200 hours per year, in accordance with EKAPCD's permitting limitations. As noted earlier in this report, diesel-exhaust PM has been identified as a TAC. For Alternative 1, the proposed generator would result in increased cancer risks of approximately 0.2 in a million and a chronic/acute hazard index of 0.02, or less, at the nearest receptor. For Alternative 2, the proposed generator would result in increased cancer risks of approximately 0.8 in a million and a chronic/acute hazard index of 0.06, or less, at the nearest receptor. Emissions modeling assumptions and results are included in Appendix B.

Wastewater Treatment Process Emissions

As with emissions of VOCs/ROGs discussed earlier in this report, evaporative TACs emitted by WWTPs are typically considered minor. Because most emissions of TACs occur during the treatment process in which dissolved volatile organic compounds are volatilized, emissions of TACs are generally considered to be roughly proportional to the wastewater influent flow rates associated with the individual treatment processes. Evaporative emissions were quantified based on an existing flow rate of 2.6 mgd and a projected project flow rate of 3.6 mgd. A screening-level health risk assessment was prepared to analyze cancer, chronic non-cancer, and acute non-cancer health risks. The annual emissions of TACs and associated health risks are summarized in Table 6 and discussed below. Emissions modeling assumptions and results are included in Appendix B. As depicted, the proposed build alternatives would result in predicted cancer risks of less than one in ten million and the predicted hazard index for non-cancer acute and chronic risks would be less than one at the nearest sensitive receptor.

For the assessment of potential health-related impacts associated with TACs, the EKAPCD has established stationary source cancer-risk thresholds of 10 in one million and a non-cancer risk hazard index of one. Stationary emission sources that exceed these thresholds would be considered to have a potentially significant impact. Based on the screening-level health risk assessments conducted, combined health risks associated with the operation of the proposed emergency generator and evaporative TAC emissions with treatment processes would result in a predicted cancer risk at the nearest receptor of 0.24 in one million for Build Alternative 1 and 0.84 in one million for Build Alternative 2. The hazard index for both acute and chronic non-cancer inhalation risk at the nearest receptors would be 0.02, or less, for Build Alternative 1 and 0.06, or less, for Build Alternative 2. Predicted cancer and non-cancer health risks would not exceed EKAPCD's significance thresholds.

It is also important to note that the proposed emergency generator would be required to comply with EKAPCD permitting requirements. In particular, EKAPCD Rule 201 establishes permitting requirements for stationary sources. In the event that the emergency generator is diesel fueled, implementation of TBACT may also be required, in accordance with Rule 210.9. Compliance with EKAPCD rules and regulations would ensure that health risks to nearby receptors would not exceed applicable standards. For these reasons, this impact would be considered **less than significant**. No mitigation is required.

**Table 6
Operational TACs & Health Risks Associated with Water Treatment Processes**

TACs	Emissions (lbs/year)		
	No-Build Alternative ¹	Proposed Project Alternative 1 ²	Proposed Project Alternative 2 ³
Benzene	0.1	9.0	9.0
Ethyl-Benzene	0.1	11.9	11.9
Toluene	0.5	72.1	72.1
Xylenes	0.0	22.8	22.8
Chloroform	10.4	14.3	14.3
Methylene Chloride	19.4	26.7	26.7
Tetrachloroethylene	13.2	18.2	18.2
1,1,1-Trichloroethane	7.7	10.6	10.6
Acetone	81.4	60.5	60.5
Methyl Ethyl Ketone (MEK)	16.3	12.1	12.1
Methyl Isobutyl Ketone (MIBK)	14.7	11.0	11.0
Distance to Nearest Sensitive Land Use (feet):	1,575	1,750	960
Carcinogenic Risk:	0.003	0.01	0.1
Significance Threshold ⁴ :	10	10	10
Exceeds Cancer Risk Threshold?	No	No	No
Non-Carcinogenic Acute Risk:	0.001	0.001	0.01
Non-Carcinogenic Chronic Risk:	0.000	0.001	0.00
Significance Threshold ⁴ :	1	1	1
Exceeds Non-Cancer Risk Thresholds?	No	No	No
<p>1. Based on distance of 1,575 feet to the nearest receptor to the existing WWTP boundary. 2. Based on distance of 1,750 feet to the nearest receptor to the proposed WWTP boundary. 3. Based on distance of 960 feet to the nearest receptor to the proposed WWTP boundary. 4. The significance threshold for increased cancer risk is ten in one million. Non-cancer acute and chronic significance thresholds are based on a hazard index of one. Refer to Appendix B for modeling results and assumptions.</p>			

Impact AQ-5: Would the project create objectionable odors affecting a substantial number of people?

The project would increase the treatment capacity of the plant from an existing average-daily flow of approximately 2.6 mgd to approximately 3.6 mgd. However, an increase in odor potential (e.g. treatment of higher volumes of wastewater) does not necessarily result in a greater odor impact to the surrounding community. The location, size, and type of the treatment facilities, the sensitivity of nearby receptors, and the direction and speed of prevailing winds are all factors in determining whether odors from the treatment plant are likely to have a significant effect on the surrounding community. Processes having the greatest potential for odor generation at WWTPs are typically associated with sludge handling and drying practices. Potential increases in odors may be offset by improvements in design and/or operational procedures, including the use of chemicals and incorporation of additional treatment technologies. Design

technologies considered to be the most effective in controlling onsite odors most often include the enclosure of process facilities and the treatment of air emitted from odor-generating equipment.

No odor complaints have been filed during the last five years for the City of Ridgecrest wastewater treatment facility (EKAPCD 2016). In comparison to the existing facility, the proposed project would result in additional treatment processes that would help to reduce the odor-generation potential of the facility, including effluent filtration, chlorination, and aerobic sludge digestion. Sludge handling activities, however, could result in an increase in the facilities odor-generation potential.

WWTPs located within approximately one mile of sensitive land uses are generally considered to have a potentially significant impact with regard to nuisance odors. Under Alternative 1, the nearest residences would be located approximately 1,750 feet from the proposed treatment facility. Under Build Alternative 2, the nearest residences would be located approximately 960 feet from the treatment facility. Given that residential land uses are located within one mile of the proposed treatment plants and the proposed project alternatives would result in a potential increase in odor-generating potential, this impact is considered *potentially significant*.

Mitigation Measure

AQ-2: An Odor Control Mitigation Plan (OCMP) shall be prepared for the proposed project to ensure consistency with EKAPCD Rule 419 for the control of nuisance impacts to nearby sensitive land uses. The OCMP shall identify processes that would have a high potential for odor generation and appropriate operational controls and procedures for the control and reduction of odorous emissions. The OCMP shall be submitted to and approved by the City of Ridgecrest Planning Department prior to operation.

Level of Significance after Mitigation

Mitigation Measure AQ-2 would require the preparation of an odor control plan. Implementation of the OCMP would help to minimize and control odorous emissions from the facility. In addition, the OCMP would also help to ensure compliance with applicable EKAPCD Rule 419 for the control of nuisance impacts. With mitigation, this impact would be considered ***less than significant***.

GREENHOUSE GASES AND CLIMATE CHANGE

EXISTING SETTING

To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the greenhouse gases (GHGs) that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Primary GHGs attributed to global climate change, are discussed, as follows:

- **Carbon Dioxide.** Carbon dioxide (CO₂) is a colorless, odorless gas. CO₂ is emitted in a number of ways, both naturally and through human activities. The largest source of CO₂ emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can

also lead to CO₂ emissions. The atmospheric lifetime of CO₂ is variable because it is so readily exchanged in the atmosphere (U.S. EPA 2008).

- **Methane.** Methane (CH₄) is a colorless, odorless gas that is not flammable under most circumstances. CH₄ is the major component of natural gas, about 87percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane to the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years (U.S. EPA 2015a).
- **Nitrous Oxide.** Nitrous oxide (N₂O) is a clear, colorless gas with a slightly sweet odor. N₂O is produced by both natural and human-related sources. Primary human-related sources of N₂O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N₂O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N₂O is approximately 120 years (U.S. EPA 2015b).
- **Hydrofluorocarbons.** Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 260 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (U.S. EPA 2015c).
- **Perfluorocarbons.** Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF₄), perfluoroethane (C₂F₆), perfluoropropane (C₃F₈), perfluorobutane (C₄F₁₀), perfluorocyclobutane (C₄F₈), perfluoropentane (C₅F₁₂), and perfluorohexane (C₆F₁₄). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF₄ and C₂F₆ as byproducts. The estimated atmospheric lifetimes for CF₄ and C₂F₆ are 50,000 and 10,000 years, respectively (U.S. EPA 2015a).
- **Nitrogen Trifluoride.** Nitrogen trifluoride (NF₃) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. Nitrogen trifluoride is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. It has a global warming potential of 17,200 carbon dioxide equivalents (CO₂e). While NF₃ may have a lower global warming potential than other chemical etchants, it is still a potent GHG. In 2009, NF₃ was listed by California as a high global warming potential GHG to be listed and regulated under Assembly Bill (AB) 32 (Section 38505 Health and Safety Code).
- **Sulfur Hexafluoride.** Sulfur hexafluoride (SF₆) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF₆ is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80percent of all SF₆ produced worldwide. Leaks of SF₆ occur from aging equipment and during equipment maintenance and servicing. SF₆ has an atmospheric life of 3,200 years (U.S. EPA 2015e).
- **Black Carbon.** Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by

interacting with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands). California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (ARB 2014).

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO₂e), which weight each gas by its global warming potential (GWP). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO₂ were being emitted. Table 7 shows the GWP for the GHG emissions of typical concern with regard to community development projects, based on a 100-year time horizon. As indicated, Methane traps over 25 times more heat per molecule than CO₂, and N₂O absorbs roughly 298 times more heat per molecule than CO₂. Additional GHG with high GWP include Nitrogen trifluoride, Sulfur hexafluoride, Perfluorocarbons, and black carbon.

**Table 7
Global Warming Potential for Greenhouse Gases**

Greenhouse Gas	Global Warming Potential (100-year)
Carbon Dioxide (CO ₂)	1
Methane (CH ₄)	25
Nitrous Dioxide (N ₂ O)	298

**Based on IPCC GWP values for 100-year time horizon*

SOURCES OF GHG EMISSIONS

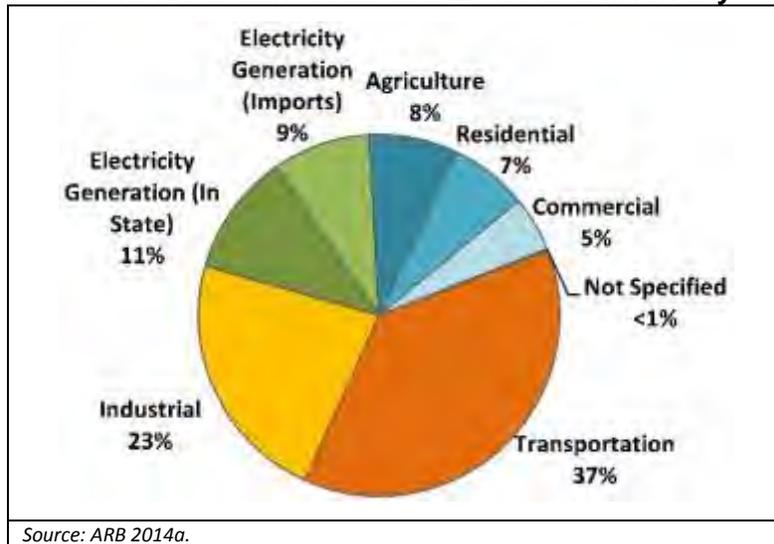
On a global scale, GHG emissions are predominantly associated with activities related to energy production; changes in land use, such as deforestation and land clearing; industrial sources; agricultural activities; transportation; waste and wastewater generation; and commercial and residential land uses. World-wide, energy production including the burning of coal, natural gas, and oil for electricity and heat is the largest single source of global GHG emissions (U.S. EPA 2015d).

In 2013, GHG emissions within California totaled 459 million metric tons (MMT) of CO₂e. GHG emissions, by sector, are summarized in Figure 4. Within California, the transportation sector is the largest contributor, accounting for approximately 37 percent of the total state-wide GHG emissions. Emissions associated with industrial uses are the second largest contributor, totaling roughly 23 percent. Electricity generation totaled roughly 20 percent (ARB 2014).

EFFECTS OF GLOBAL CLIMATE CHANGE

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, increased air pollution episodes, and the consequence of these effects on the economy.

**Figure 4
California Greenhouse Gas Emissions Inventory**



Within California, climate changes would likely alter the ecological characteristics of many ecosystems throughout the state. Such alterations would likely include increases in surface temperatures and changes in the form, timing, and intensity of precipitation. For instance, historical records are depicting an increasing trend toward earlier snowmelt in the Sierra Nevada. This snow pack is a principal supply of water for the state, providing roughly 50 percent of state's annual runoff. If this trend continues, some areas of the state may experience an increased danger of floods during the winter months and possible exhaustion of the snowpack during spring and summer months. An earlier snowmelt would also impact the State's energy resources. Currently, approximately 20 percent of California's electricity comes from hydropower. An early exhaustion of the Sierra snowpack, may force electricity producers to switch to more costly or non-renewable forms of electricity generation during spring and summer months. A changing climate may also impact agricultural crop yields, coastal structures, and biodiversity. As a result, resultant changes in climate will likely have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry (ARB 2015).

REGULATORY FRAMEWORK

FEDERAL

INTERNATIONAL REGULATION AND THE KYOTO PROTOCOL

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). While the United States signed the Kyoto Protocol, which would have required reductions in GHGs, Congress never ratified the protocol. The federal government chose voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science. In 2002, the United States announced a strategy to reduce the greenhouse gas intensity of the American economy by 18 percent over a 10-year period from 2002 to 2012.

As part of the commitments to the UNFCCC, the U.S. EPA has developed an inventory of anthropogenic emissions by sources and removals by sinks of all GHGs. This inventory is periodically updated, with the latest update in 2010. The U.S. EPA reports that total US emissions rose by 14 percent from 1990 to 2007, while the US gross domestic product increased by 59 percent over the same period. A 2.9 percent decrease in emissions was noted from 2007 to 2008, which is reported to be attributable to climate conditions, reduced use of petroleum products for transportation, and increased use of natural gas over other fuel sources. The inventory notes that the transportation sector emits about 32 percent of CO₂ emissions, with 53 percent of

those emissions coming from personal automobile use. Residential uses, primarily from energy use, accounted for 21 percent of CO₂ emissions (U.S. EPA 2015a).

As a part of the U.S. EPA's responsibility to develop and update an inventory of U.S. GHG emissions and sinks, the U.S. EPA compared trends of other various US data. Over the period between 1990 and 2008, GHG emissions grew at an average rate of about 0.7 percent per year. Population growth was slightly higher at 1.1 percent, while energy and fossil fuel consumption grew at 0.9 and 0.8 percent, respectively. Gross domestic product and energy generation grew at much higher rates.

Executive Order 13514

Executive Order 13514 is focused on reducing GHGs internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

On April 2, 2007, in *Massachusetts v. U.S. EPA*, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles, which was published on September 15, 2009. On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO₂ per mile, (the equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO₂ level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). On November 16, 2011, U.S. EPA and NHTSA issued their joint proposal to extend this national program of coordinated greenhouse gas and fuel economy standards to model years 2017 through 2025 passenger vehicles (Caltrans 2015).

STATE

Assembly Bill 1493

AB 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the ARB to develop and adopt the nation's first GHG emission standards for automobiles. These standards are also known as Pavley I. The California Legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply, an increase in air pollution caused by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the State of California submitted a request for a waiver from federal clean air regulations, as the State is authorized to do under the Clean Air Act, to allow the State to require reduced tailpipe emissions of CO₂. In late 2007, the U.S. EPA denied California's waiver request and declined to promulgate adequate federal regulations limiting GHG emissions. In early 2008, the State brought suit against the U.S. EPA related to this denial.

In January 2009, President Obama instructed the U.S. EPA to reconsider the Bush Administration's denial of California's and 13 other states' requests to implement global warming pollution standards for cars and trucks. In June 2009, the U.S. EPA granted California's waiver request, enabling the State to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

Also in 2009, President Obama announced a national policy aimed at both increasing fuel economy and reducing GHG pollution for all new cars and trucks sold in the US. The new standards would cover model years 2012 to 2016 and would raise passenger vehicle fuel economy to a fleet average of 35.5 miles per gallon by 2016. When the national program takes effect, California has committed to allowing automakers who show compliance with the national program to also be deemed in compliance with state requirements. California is committed to further strengthening these standards beginning in 2017 to obtain a 45 percent GHG reduction from the 2020 model year vehicles.

Executive Order No. S-3-05

Executive Order S-3-05 (State of California) proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse gas emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the secretary of the California Environmental Protection Agency to coordinate a multi-agency effort to reduce greenhouse gas emissions to the target levels. The secretary will also submit biannual reports to the governor and state legislature describing (1) progress made toward reaching the emission targets, (2) impacts of global warming on California's resources, and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the secretary of CalEPA created a Climate Action Team made up of members from various state agencies and commissions. The Climate Action Team released its first report in March 2006 and continues to release periodic reports on progress. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

Executive Order S-6-06

Executive Order S-6-06 (State of California), signed on April 25, 2006, established two primary goals related to the use of biofuels within California, including: (1) by 2010, 20 percent of its biofuels need to be produced within California; increasing to 40 percent by 2020 and 75 percent by 2050; and (2) by 2010, 20 percent of the renewable electricity should be generated from biomass resources within the state, maintaining this level through 2020.

Executive Order No. S-01-07

Executive Order S-1-07, the Low Carbon Fuel Standard (LCFS) was issued on January 18, 2007 and called for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. This order instructed the CalEPA to coordinate activities between the University of California, the California Energy Commission (CEC) and other state agencies to develop and propose a draft compliance schedule to meet the 2020 target. Furthermore, it directed ARB to consider initiating a regulatory proceedings to establish and implement the LCFS. In response, ARB adopted the LCFS regulation in 2010.

Assembly Bill 32 - California Global Warming Solutions Act of 2006

AB 32 requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32 (ARB 2014b).

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Climate Change Scoping Plan

In October 2008, ARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California required by AB 32. The Scoping Plan contains the main strategies California will implement to achieve reduction of roughly 169 million metric tons of CO₂e, or approximately 29 percent from the state's projected 2020 emissions level in comparison to business-as-usual (BAU) 2002–2004 conditions. The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations are from improving emissions standards for light-duty vehicles (estimated reductions of 31.7 MMTCO₂e), implementation of the Low Carbon Fuel Standard (15.0 MMTCO₂e) program, energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMTCO₂e), and a renewable portfolio standard for electricity production (21.3 MMTCO₂e). The Scoping Plan identifies the local equivalent of AB 32 targets as a 15 percent reduction below baseline GHG emissions level, with baseline interpreted as GHG emissions levels between 2003 and 2008.

Key components of the Scoping Plan focus on energy efficiency, conservation, and use of renewable energy. For instance, the Renewable Portfolio Standard, which is intended to increase the percentage of renewables in California's electricity mix to 33 percent by year 2020, would result in a reduction of 21.3 MMTCO₂e. Sources of renewable energy include, but are not limited to, biomass, wind, solar, geothermal, hydroelectric, and anaerobic digestion. Increasing the use of renewables will decrease California's reliance on fossil fuels, thus reducing GHG emissions. The Scoping Plan also recognizes that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions.

The Scoping Plan was first approved by the Board in 2008 and must be updated every five years. The first update of the Scoping Plan was approved by ARB on May 22, 2014, which looked past 2020 to set mid-term goals to reach post 2020 emission-reduction targets.

Executive Order B-30-15

On April 29, 2015, the Governor issued Executive Order B-30-15 establishing a mid-term GHG reduction target for California of 40 percent below 1990 levels by 2030. All state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. ARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to achieve continue reductions in GHG emissions.

Senate Bill 1368

Senate Bill (SB) 1368 (codified at Public Utilities Code Chapter 3) is the companion bill of AB 32. SB 1368 required the California Public Utilities Commission (CPUC) to establish a greenhouse gas emissions performance standard for baseload generation from investor-owned utilities by February 1, 2007. The bill also required the CEC to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas emission rate from a baseload combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and the CEC.

Senate Bill 1078 and Governor's Order S-14-08 (California Renewables Portfolio Standards)

Senate Bill 1078 (Public Utilities Code Sections 387, 390.1, 399.25 and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. Executive Order S-14-08 was later superseded by Executive Order S-21-09 on September 15, 2009. Executive Order S-21-09 directed ARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. This Executive Order was superseded by statute SB X1-2 in 2011, which obligates all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020, with interim targets of 20 percent by 2013 and 25 percent by 2016.

ARB is required by current law, AB 32 of 2006, to regulate sources of GHGs to meet a state goal of reducing greenhouse gas emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050. The CEC and CPUC serve in advisory roles to help ARB develop the regulations to administer the 33 percent by 2020 requirement. ARB is also authorized to increase the target and accelerate and expand the time frame.

Mandatory Reporting of Greenhouse Gas Emissions

Reporting of GHGs by major sources is required by the California Global Warming Solutions Act (AB 32, 2006). Revisions to the existing ARB mandatory GHG reporting regulation were considered at the board hearing on December 16, 2010. The revised regulation was approved by the California Office of Administrative Law and became effective on January 1, 2012. The revised regulation affects industrial facilities, suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, and carbon dioxide, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

Cap-and-Trade Regulation

The cap-and-trade regulation is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013 and apply to large electric power plants and large industrial

plants. In 2015, they will extend to fuel distributors (including distributors of heating and transportation fuels). At that stage, the program will encompass around 360 businesses throughout California and nearly 85 percent of the state's total greenhouse gas emissions.

Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions, and are free to buy and sell allowances on the open market. California held its first auction of greenhouse gas allowances on November 14, 2012. California's GHG cap-and-trade system will reduce GHG emissions from regulated entities by approximately 16 percent, or more, by 2020.

California Building Code

The California Building Code (CBC) contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvement to real property. The California Building Code is adopted every three years by the Building Standards Commission (BSC). In the interim, the BSC also adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local jurisdiction may amend a CBC standard if it makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

Green Building Standards

In essence, green buildings standards are indistinguishable from any other building standards. Both are contained in the California Building Code and regulate the construction of new buildings and improvements. The only practical distinction between the two is that whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

AB 32, which mandates the reduction in greenhouse gas emissions in California to 1990 levels by 2020, increased the urgency around the adoption of green building standards. In its scoping plan for the implementation of AB 32, ARB identified energy use as the second largest contributor to California's GHG emissions, constituting roughly 25 percent of all such emissions. In recommending a green building strategy as one element of the scoping plan, ARB estimated that green building standards would reduce GHG emissions by approximately 26 MMTCO_{2e} by 2020.

The green buildings standards, commonly referred to as CalGreen standards, were most recently updated in 2013. The 2013 building energy efficiency standards are 25 percent more efficient than previous standards for residential construction and 30 percent more efficient for non-residential construction (CEC 2015).

Eastern Kern Air Pollution Control District

The EKAPCD has not yet adopted recommended significance thresholds for the evaluation of development projects subject to CEQA review. However, on March 8, 2012, the EKAPCD adopted an internal policy for the evaluation of GHG emission impacts associated with stationary source projects. The EKAPCD's policy applies to stationary source projects for which the EKAPCD serves as the lead CEQA agency. In accordance with this policy, stationary source emissions of GHGs would be considered to have a less-than-significant impact if project-specific GHG emissions would be less than 25,000 tons per year (EKAPCD 2012).

PROJECT IMPACTS

THRESHOLDS OF SIGNIFICANCE

In accordance with CEQA Guidelines, a project would be considered to have a significant impact to climate change if it would:

- a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or,
- b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

The EKAPCD has not yet adopted recommended significance thresholds for the evaluation of development projects subject to CEQA review. In addition, the City of Ridgecrest has not yet adopted a GHG-reduction plan. The proposed wastewater treatment facility would be subject to EKAPCD permitting requirements for stationary sources. As a result, in the absence of a recommended significance threshold and applicable GHG-reduction plan, this analysis relies on EKAPCD's GHG policy for the analysis of stationary source GHG emissions. Accordingly, project-generated emissions that would exceed 25,000 MTCO_{2e}/year would be considered to have a potentially significant impact on the environment that could interfere with AB-32 GHG-reduction goals.

METHODOLOGY

GHG emissions were quantified using the CalEEMod computer program, based on project-specific construction and operational information. Evaporative emissions of methane associated with WWTP processes were calculated based on methodologies derived from the *Local Government Operations Protocol for the Quantification and Reporting of GHG Emissions Inventories* (2010). Construction-generated emissions were amortized based on a 25-year project life. To be conservative, amortized construction-generated emissions of GHGs were included in the estimated operational GHG emissions assessment. Total operational emissions, including amortized construction GHG emissions were compared to EKAPCD's GHG significance threshold for determination of impact significance.

PROJECT IMPACTS

Impact GHG-1: *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? and*
Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Implementation of the proposed project would result in short-term construction and long-term operational emissions of GHGs. Short-term construction and long-term operational emissions of GHGs are discussed, as follows:

Short-term Construction

Construction of the proposed facilities would occur over an approximate 24 month period. Estimated increases in GHG emissions associated with construction of the proposed project are summarized in Table 8. As depicted, project construction would generate approximately 424 MTCO_{2e} during the first year of construction and approximately 199 MTCO_{2e} during the second year of construction. In total, project construction would generate approximately 623 MTCO_{2e}. Amortized GHG emissions, when averaged over an assumed 25-year project life, would total approximately 25 MTCO_{2e}/year. There would also be a small amount of GHG emissions from waste generated during construction; however, this amount is speculative. Construction-generated emissions would be similar for both build alternatives.

**Table 8
Construction-Generated Emissions of GHG Emissions
Proposed Build Alternatives**

Construction Year	Annual Emissions (MTCO ₂ e/Year) ¹
Year 1	424
Year 2	199
Total Emissions all Project Components:	623
Amortized Net Change in Construction Emissions ² :	24.9
^{1.} Assumes all construction components would occur within a single year. ^{2.} Amortized emissions are quantified based on an estimated 25-year project life.	

Long-term Operations

Operational emissions would be primarily associated with energy use, as well as, increases in motor vehicle use. Waste generation would also result in slight increases in GHG emissions. Operational emissions are summarized in Table 9. With the inclusion of amortized construction emissions the project would result in a net increase of approximately 511 MTCO₂e/year. Operational emissions would be similar for both build alternatives. Annual GHG emissions would not exceed the threshold of 25,000 MTCO₂e. The proposed project would not result in GHG emissions that would have a significant impact on the environment, nor would the proposed project conflict with applicable GHG-reduction plans, policies or regulations. This impact would be considered *less than significant*. No mitigation is required.

**Table 9
Operational GHG Emissions
Proposed Build Alternatives**

Source	Annual Emissions (MTCO ₂ e/year) ¹
Existing Conditions/No-Build Alternative	
WWTP Process Emissions ⁷	37
Energy Use ¹	1,122.0
Motor Vehicle Use ²	10.4
Waste Generation ³	0.9
Total:	1,170.3
Proposed Build Alternatives	
WWTP Process Emissions ⁷	Negligible
Energy Use ⁴	1,568.5
Motor Vehicle Use ⁵	134.8
Waste Generation ³	3.2
Total:	1,706.5
Net Increase Compared to No-Build Alternative:	536.2
Net Increase + Amortized Construction ⁶ :	511.3
Significance Threshold:	25,000
Exceeds Threshold?:	No
^{1.} Energy use assumes wastewater treatment of 2.6 mgd/day, 1,500 square feet of existing structures. ^{2.} Assumes two employees daily; 16 septage haul truck trips monthly. ^{3.} Based on model defaults for Kern County. ^{4.} Energy use assumes wastewater treatment of 3.6 mgd, 5,575 square feet of proposed building area. ^{5.} Assumes 12 employees/day; 24 septage and 30 biosolids removal haul truck trips monthly. ^{6.} Based on an assumed 25-year project life. Refer to Table 8. ^{7.} Process emissions for existing conditions/no-build alternative are based on emissions of methane for older facilities that do not incorporate aerobic treatment. The U.S. EPA considers methane emissions from modern WWTPs with aerobic treatment to be negligible. Refer to Appendix B for emissions modeling assumptions and results.	

REFERENCES

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APPENDIX A

Federal Air Quality General Conformity

Federal Code of Regulations

Title 40 of the Code of Federal Regulations, Part 93, requires that the federal government not engage, support, or provide financial assistance for licensing, permitting, or approving any activity not conforming to an approved CAA implementation plan. Title I, section 176(c)(1), of the CAA defines conformity as the upholding of "an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving attainment of such standards." Accordingly, proposed Federal actions should not, through additional air pollutant emissions:

- cause or contribute to new violations of any NAAQS in any area;
- increase the frequency or severity of any existing violation of any NAAQS; or
- delay timely attainment of any NAAQS or interim emission reductions.

The General Conformity regulations take into account air pollutant emissions associated with actions that are federally funded, licensed, permitted, or approved. These regulations ensure that emissions associated with federal actions do not contribute to air quality degradation, thus preventing the achievement of state and federal air quality goals. In short, General Conformity refers to the process of evaluating plans, programs, and projects to determine and demonstrate that they meet the requirements of the CAA and applicable SIP. In general, the General Conformity regulations divide the air conformity process into two distinct areas: (1) Applicability Analysis, and (2) Conformity Determination. Federal agencies must initially assess if an action is subject to the Conformity Rule (Applicability Analysis) and then, if applicable, whether the action conforms to an applicable implementation plan (Conformity Determination).

On March 24, 2010, the U.S. EPA revised the General Conformity regulations. These most recent revisions improve the process federal entities use to demonstrate that their actions will not contribute to a NAAQS violation, provides tools to encourage better communication and air quality planning between states and federal agencies, and encourages both the federal agencies and the states to take early actions to ensure projects will conform to the appropriate state, tribal, or federal implementation plans for attaining or maintaining the NAAQS. The following is a summary of the revisions recently made to the Conformity regulations¹:

- Allows federal facilities expecting future expansion or modifications to negotiate a facility-wide emission budget with applicable state air quality agencies. Actions taken that do not exceed these budgets would be deemed to conform to the SIP and would not need a conformity determination.
- Incorporates an early emission reduction credit program for all agencies that follow the Airport Early Emission Reduction guidance developed jointly by EPA and the Federal Aviation Administration. This program encourages emission reduction actions on federal installations by providing emission reduction credits that can be used to demonstrate conformity for subsequent actions on the facility.
- Allows emissions of one precursor pollutant to be offset by the reduction of emissions of another precursor pollutant. For example both oxides of nitrogen and volatile organic compounds are ozone precursors – they are emitted and then react in the atmosphere to form ground-level ozone. In an area that does not meet EPA's ground-level ozone standard, reductions in nitrogen oxide emissions could be offset by reductions of volatile organic compounds.

¹ United States Environmental Protection Agency (U.S. EPA). Accessed: February 24, 2016. General Conformity, Regulatory Actions, Final revisions to the General Conformity Regulations. Fact Sheet. Available at: [url: https://www3.epa.gov/airquality/genconform/documents/20080108_NPRM_fs.pdf](https://www3.epa.gov/airquality/genconform/documents/20080108_NPRM_fs.pdf).

- Allows alternative schedules for mitigating emission increases where state air quality agencies can accommodate temporary emission increases in exchange for long-term or permanent emission reductions.
- Removes requirements for federal agencies to conduct conformity determinations for “regionally significant” actions. Such actions have emissions greater than 10 percent of the emissions inventory for a nonattainment area. These analyses have been conducted for 16 years and have never shown an action to interfere with attainment or maintenance of a NAAQS.
- Lists categories of actions that federal agencies can presume to conform. The final rule also allows states to establish “presumed to conform” lists for actions in their state.

General Conformity Emission Levels

When assessing the applicability of a proposed Federal action to General Conformity requirements, General Conformity requirements would be deemed to apply to a Proposed Federal action when the total of direct and indirect emissions caused by the Federal action would equal or exceed the *de minimis* emission levels of criteria pollutants within corresponding nonattainment or maintenance areas. General Conformity *de minimis* emission levels, expressed in tons per year (tons/yr), are summarized in Table A-1.

If the federal action will cause emissions that equal or exceed the *de minimis* emission levels in any nonattainment or maintenance area and the action is not otherwise exempt, “presumed to conform,” or included in the existing emissions budget of the applicable implementation plan for attaining or maintaining the NAAQS, the agency must conduct a conformity determination before implementation of the proposed Federal action (U.S. EPA 2010).

Exemptions from General Conformity Requirements

In accordance with General Conformity regulations, the following actions are exempt:

- Actions where the total of direct and indirect emissions are below the specified emissions levels
- Actions which would result in no emissions increase or an increase in emissions that is clearly *de minimis*
- Actions where the emissions are not reasonably foreseeable, such as the following:
 - Initial Outer Continental Shelf lease sales which are made on a broad scale and are followed by exploration and development plans on a project level
 - Electric power marketing activities that involve the acquisition, sale and transmission of electric energy
- Actions which implement a decision to conduct or carry out a conforming program such as prescribed burning actions which are consistent with a conforming land management plan.
- Actions which include major or minor new or modified stationary sources requiring a permit under the New Source Review program or the prevention of significant deterioration program.
- Actions in response to emergencies or natural disasters such as hurricanes, earthquakes, etc., which are commenced on the order of hours or days after the emergency or disaster and, if applicable, which meet the requirements for Federal actions which are part of a continuing response
- Actions which include research, investigations, studies, demonstrations, or training (unless otherwise exempted) where no environmental detriment is incurred and/or, the particular action furthers air quality research, as determined by the State agency primarily responsible for the applicable SIP
- Actions which include alteration and additions of existing structures as specifically required by new or existing applicable environmental legislation or environmental regulations (e.g., hush houses for aircraft engines and scrubbers for air emissions)

- Actions which include direct emissions from remedial and removal actions carried out under CERCLA (and associated regulations to the extent such emissions either comply with the substantive requirements of the PSD/NSR permitting program or are exempted from other environmental regulation under the provisions of CERCLA and applicable regulations issued under CERCLA.)

**Table A-1
General Conformity Emission Levels**

Pollutant	Emission Levels (tons per year)
Nonattainment Areas	
Ozone (VOC's or NO _x)	
Serious NAA's	50
Severe NAA's	25
Extreme NAA's	10
Other Ozone NAA's outside an ozone transport region	100
Other Ozone NAA's inside an ozone transport region	
VOC	50
NO _x	100
Carbon Monoxide: All NAA's	100
SO ₂ and NO ₂ : All NAA's	100
PM ₁₀	
Moderate NAA's	100
Serious NAA's	70
PM _{2.5}	
Direct Emissions	100
SO ₂	100
NO _x (Unless determined not be significant precursors)	100
VOC or Ammonia (if determined to be significant precursors)	100
Pb: All NAA's	25
Maintenance Areas	
Ozone (NO _x), SO ₂ or NO ₂ : All MA's	100
Ozone (VOC's):	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
Carbon Monoxide: All MA's	100
PM ₁₀ (All MA's):	100
Pb (All MA's):	25
<i>Applicable General Conformity de minimis emissions levels depicted in bold font.</i>	
<i>Source: U.S.EPA 2010</i>	

Applicability Analysis

As stated previously, the first step in a general conformity evaluation is an analysis of whether the General Conformity requirements apply to a Federal action proposed to be taken in a nonattainment or a maintenance area. Unless exempted by the regulations or otherwise presumed to conform, a Federal action requires a general conformity determination for each pollutant where the total of direct and indirect emissions caused by the Federal action would equal or exceed an annual *de minimis* emission levels for criteria air pollutants identified within corresponding nonattainment or maintenance areas. The following provides an analysis of General Conformity requirements applicable to the proposed project.

Attainment Status

The Proposed Action is located in an area designated nonattainment for the ozone NAAQS. As noted in Table A-1, the applicable *de minimis* emission level for areas designated *Moderate Nonattainment* for ozone is 100 tons per year (tons/yr) of ozone-precursor pollutants (VOCs or NO_x).

The EPA has designated the EKAPCD as a moderate nonattainment area for the 1997 8-hour ozone standard and as a marginal nonattainment area for the 2008 8-hour ozone standard. The project area is not located in an ozone transport region. Based on the federal nonattainment designation, the federal *de minimis* level is 100 tons/year.

Proposed Action Emissions

Construction Emissions

Emissions of VOCs and NO_x associated with the construction of the Proposed Action were calculated based on estimated construction information (i.e., equipment usage requirements, schedules, haul truck and employee trips) associated with the construction of the proposed improvements. Sources included in the analysis included on-road and off-road motorized equipment and vehicles, fugitive dust generated by onsite construction, road dust associated with vehicle travel on roadways, as well as, construction worker and haul truck trips. Emissions associated with off-road equipment and on-road vehicle trips were calculated utilizing the CalEEMod (version 2011.1.1) computer program.

The emissions associated with the Proposed Action are summarized in Table A-2. Based on the modeling conducted, construction of the Proposed Action would generate maximum uncontrolled emissions of approximately 0.4 tons/yr of VOCs and 4.7 tons/yr of NO_x. These estimated emissions apply to both proposed build alternatives. Total annual emissions from construction activities would not exceed the corresponding General Conformity *de minimis* emission levels of 100 tons/yr.

Operational Emissions

Implementation of the Proposed Action would result in increased emissions from stationary and mobile sources. Estimated operational emissions were quantified using the CalEEMod computer program based on project-specific operational information. Evaporative emissions of VOCs were quantified using flow-based emission factors derived from the *TriTAC Guidance Document on Control Technology for VOC Air Emissions for Publicly Operated Treatment Works (POTWs)* (TriTAC 1994). These emission factors were developed in a cooperative effort of publicly-owned treatment works (POTWs) and air regulatory agencies located in California. Emission factors contained in the TriTAC guidance document were derived from a combination of data generated by the Pooled Emissions Estimation Program (PEEP), the Joint Emissions Inventory Program (JEIP) submitted to the South Coast Air Quality Management District's Rule 1179, and toxics inventories from individual California POTWs. These emissions factors are flow-based, specific to the individual treatment processes, and are considered to provide a conservative estimation of emissions. Operational emissions are summarized in Table A-3.

In comparison to existing conditions/no-build alternative, operational of the Proposed Action would generate net increases of approximately 0.4 tons/year of ROG and 0.5 tons/year of NO_x. These estimated emissions apply to both proposed build alternatives. Total annual emissions from operational activities would not exceed the corresponding General Conformity *de minimis* emission levels of 100 tons/yr of VOCs or NO_x.

Applicability Determination

As identified in **Table A-2** and discussed above, the total of direct and indirect emissions of VOCs and NO_x attributable to the Proposed Action are less than the corresponding General Conformity *de minimis* emission levels. Given that the net emissions associated with the Proposed Action are less than the General Conformity *de minimis* emission levels, the Proposed Action is not subject to a General Conformity determination.

**Table A-2
Uncontrolled Construction-Generated Emissions of Criteria Air Pollutants
Build Alternatives 1 & 2**

Construction Activity	Annual Emissions (Tons/Year) ⁽¹⁾	
	VOC	NO _x
Construction Year 1		
Mobilization	0.0	0.02
Grading & Site Work	0.13	1.48
Excavation	0.23	2.69
Concrete Work	0.02	0.21
Equipment Installation	0.02	0.23
Site Piping & Electrical	0.01	0.08
Total:	0.42	4.70
Significance Thresholds:	25	25
Exceed Thresholds?	No	No
Construction Year 1		
Concrete Work	0.03	0.28
Equipment Installation	0.07	0.69
Building Construction	0.02	0.10
Site Piping & Electrical	0.01	0.12
Final Grading & Paving	0.05	0.46
Startup	0.00	0.01
Total:	0.18	1.66
Significance Thresholds:	25	25
Exceed Thresholds?	No	No
<p><i>Emissions were quantified using CalEEMod, version 2013.2.2. Totals may not sum due to rounding.</i></p> <p><i>2. EKAPCD daily emissions threshold applies to indirect on-road mobile-sources only. These thresholds typically apply to operational emissions, but have been included to ensure a conservative analysis of construction-generated emissions.</i></p> <p><i>-- No applicable threshold.</i></p> <p><i>Refer to Appendix B for modeling results and assumptions.</i></p>		

Table A-3
Summary of Operational Emissions of Criteria Air Pollutants
Direct & Indirect Sources

Construction Activity	Annual Emissions (Tons/Year) ¹	
	ROG	NO _x
Existing Conditions/No-Build Alternative		
WWTP Process Emissions	1.0	
Area Sources	0.01	0.00
Motor Vehicle Use ²	0.00	0.02
<i>Total:</i>	<i>1.01</i>	<i>0.02</i>
Proposed Build Alternatives		
WWTP Process Emissions	1.3	
Area Sources	0.04	0.00
Emergency Generator ³	0.02	0.14
Motor Vehicle Use ⁴	0.05	0.36
<i>Total:</i>	<i>1.41</i>	<i>0.50</i>
<i>Net Increase Compared to Existing:</i>	<i>0.40</i>	<i>0.48</i>
<p>1. Emissions were quantified using CalEEMod, version 2013.2.2. Emissions associated with energy use and waste generation are negligible. Daily indirect source emissions of ROG, NO_x, SO_x, and PM₁₀ for no-build and proposed build alternatives would be approximately 0.1 lbs/day, or less, and would not exceed EKAPCD's significance thresholds of 137 lbs/day.</p> <p>2. Assumes two employees daily; 16 septage haul truck trips monthly.</p> <p>3. Assumes a maximum of 200 hours annually, in accordance with EKAPCD permitting requirements.</p> <p>4. Assumes 12 employees daily; 24 septage and 30 biosolids removal haul truck trips monthly.</p> <p>-- No applicable threshold.</p> <p>Refer to Appendix B for modeling results and assumptions.</p>		

APPENDIX B

Emissions Modeling

Primary Construction Activity	Construction Schedule (Estimated Total Months)	Off-Road Equipment Use		
		Equipment Type	Number of Pieces	Avg. Hours of Daily Use/Piece of Equipment
Grading & Site Work				
	2	Scraper Cat 623	2	8
		Motor Grader Cat 140H	1	8
		Dozer Cat D8	1	8
		Compactor Cat 815	1	8
		Steel Roller 10-Ton	1	8
		Loader Cat 966	1	8
		Excavator Cat 330L	1	8
Excavation				
	4	Scraper Cat 623	4	8
		Motor Grader Cat 140H	2	8
		Dozer Cat D8	2	8
		Compactor Cat 815	2	8
		Excavator Cat 330L	2	8
Concrete Form Work and Pours				
	10	Lift-all Forklift	2	8
Equipment Installation				
	8	Crane (200-ton)	1	8
		Lift-all Forklift	2	8
Building Construction				
	5	Lift-all Forklift	1	8
		Concrete Pump Truck	1	8
Site Piping & Electrical				
	9	Backhoe JD 710		
Final Grading & Paving				
	2	Motor Grader Cat 140H	1	8
		Steel Roller 10-Ton	1	8
		Loader Cat 966	1	8
		Asphalt Paving Machine	1	8
		Steel Roller 10-Ton	2	8

CONSTRUCTION EMISSIONS SUMMARY (DAILY)

CONSTRUCTION ACTIVITY	CONSTRUCTION EMISSIONS (LBS/DAY)							PERIOD (MONTHS)
	ROG	NOX	CO	SOX	PM10	PM2.5	CO2E	
Mobilization - Yr 1	Onsite	0.0	0.0	0.0	0.0	0.0	0.0	3
	Offsite	0.1	0.5	2.0	0.0	0.3	0.1	
	Total	0.1	0.5	2.0	0.0	0.3	0.1	
Grading & Site Work - Yr 1	Onsite	6.4	73.4	47.3	0.1	9.6	6.6	2
	Offsite	0.1	0.5	2.0	0.0	0.3	0.1	
	Total	6.5	73.9	49.3	0.1	9.9	6.7	
Excavation - Yr 1	Onsite	11.5	134.0	85.8	0.1	20.9	12.6	4
	Offsite	0.1	0.3	2.1	0.0	0.7	0.2	
	Total	11.6	134.3	87.9	0.1	21.6	12.8	
Concrete Work - Yr 1	Onsite	1.0	10.1	6.6	0.0	0.7	0.6	7
	Offsite	0.1	0.6	1.5	0.0	0.1	0.0	
	Total	1.1	10.7	8.1	0.0	0.8	0.6	
Concrete Work - Yr 2	Onsite	0.9	8.9	6.5	0.0	0.6	0.5	3
	Offsite	0.1	0.5	1.4	0.0	0.1	0.0	
	Total	1.0	9.4	7.9	0.0	0.7	0.6	
Equipment Installation - Yr 1	Onsite	1.1	11.3	5.3	0.0	0.6	0.6	2
	Offsite	0.0	0.1	0.5	0.0	0.1	0.0	
	Total	1.1	11.4	5.8	0.0	0.7	0.6	
Equipment Installation - Yr 2	Onsite	1.1	11.3	5.3	0.0	0.6	0.6	6
	Offsite	0.0	0.1	0.5	0.0	0.1	0.0	
	Total	1.1	11.4	5.8	0.0	0.7	0.6	
Building Construction - Yr 2	Onsite	0.2	1.8	1.3	0.0	0.2	0.1	5
	Offsite	0.1	0.3	1.3	0.0	0.3	0.1	
	Total	0.3	2.1	2.6	0.0	0.4	0.2	
Site Piping & Electrical - Yr 1	Onsite	0.4	3.9	3.3	0.0	0.3	0.3	6
	Offsite	0.1	0.2	1.0	0.0	0.2	0.1	
	Total	0.5	4.1	4.2	0.0	0.5	0.3	
Site Piping & Electrical - Yr 2	Onsite	0.4	3.9	3.3	0.0	0.3	0.3	3
	Offsite	0.1	0.2	1.0	0.0	0.2	0.1	
	Total	0.5	4.1	4.2	0.0	0.5	0.3	
Final Grading & Paving - Yr 2	Onsite	2.2	22.0	16.2	0.0	1.3	1.2	2
	Offsite	0.2	0.8	2.4	0.0	0.3	0.1	
	Total	2.3	22.9	18.6	0.0	1.6	1.3	
Startup - Yr 2	Onsite	0.0	0.0	0.0	0.0	0.0	0.0	3
	Offsite	0.1	0.2	1.2	0.0	0.3	0.1	
	Total	0.1	0.2	1.2	0.0	0.3	0.1	
Indirect Maximum Daily Emissions:		0.3	1.1	4.6	0.0	1.1	0.3	
Total Maximum Daily Emissions:		13.2	149.0	100.2	0.1	22.9	13.8	

Maximum daily emissions assumes excavation, concrete, piping and electrical would occur on the same day based on preliminary construction schedules.

CONSTRUCTION EMISSIONS SUMMARY (ANNUAL)

	CONSTRUCTION YEAR 1 (TONS)							CONSTRUCTION YEAR 2 (LBS/DAY)						
	ROG	NOX	CO	SOX	PM10	PM2.5	CO2E	ROG	NOX	CO	SOX	PM10	PM2.5	CO2E
Mobilization - Yr 1	0.00	0.02	0.06	0.00	0.01	0.00	10.17							
Grading & Site Work - Yr 1	0.13	1.48	0.99	0.00	0.20	0.13	129.28							
Excavation - Yr 1	0.23	2.69	1.76	0.00	0.43	0.26	229.00							
Concrete Work - Yr 1	0.02	0.21	0.16	0.00	0.02	0.01	22.50							
Concrete Work - Yr 2								0.03	0.28	0.24	0.00	0.02	0.02	33.18
Equipment Installation - Yr 1	0.02	0.23	0.12	0.00	0.01	0.01	19.84							
Equipment Installation - Yr 2								0.07	0.69	0.35	0.00	0.04	0.04	59.52
Building Construction - Yr 2								0.02	0.10	0.13	0.00	0.02	0.01	21.55
Site Piping & Electrical - Yr 1	0.01	0.08	0.08	0.00	0.01	0.01	12.74							
Site Piping & Electrical - Yr 2								0.01	0.12	0.13	0.00	0.02	0.01	19.11
Final Grading & Paving - Yr 2								0.05	0.46	0.37	0.00	0.03	0.03	54.44
Startup - Yr 2								0.00	0.01	0.04	0.00	0.01	0.00	11.46
Total:	0.42	4.70	3.17	0.00	0.68	0.42	423.53	0.18	1.66	1.25	0.00	0.14	0.10	199.26

**Ridgecrest WWTP - Existing/No-Build
Kern-San Joaquin County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.50	1000sqft	0.03	1,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	32
Climate Zone	3			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction does not apply.

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 1500sf building area.

Construction Phase - Const does not apply.

Off-road Equipment - Forklift 1

Off-road Equipment - Const does not apply

Trips and VMT - Const does not apply

Grading - Const does not apply

Vehicle Trips - Assumes 3.3 trips/day/ksf weekday, 2.7 trips/day/ksf weekend, Weekend excludes trucks.

Vehicle Emission Factors - 80% LDA/T1/T2; 20%HDT.

Vehicle Emission Factors - .

Vehicle Emission Factors - .

Water And Wastewater - Includes 2.6MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Const does not apply

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDA	0.35	0.27

tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00

tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleTrips	ST_TR	1.32	2.70
tblVehicleTrips	SU_TR	0.68	2.70
tblVehicleTrips	WD_TR	6.97	3.30
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	346,875.00	949,000,000.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.2 Overall Operational**Unmitigated Operational**

	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					
Area	6.9000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	5.9571	5.9571	2.2000e-004	7.0000e-005	5.9839
Mobile	3.8100e-003	0.0184	0.0526	1.4000e-004	6.9700e-003	3.5000e-004	7.3200e-003	1.8600e-003	3.2000e-004	2.1900e-003	0.0000	10.3591	10.3591	2.6000e-004	0.0000	10.3645
Waste						0.0000	0.0000		0.0000	0.0000	0.3776	0.0000	0.3776	0.0223	0.0000	0.8461
Water						0.0000	0.0000		0.0000	0.0000	335.7577	527.5793	863.3370	1.1795	0.7351	1,115.9871
Total	0.0109	0.0200	0.0539	1.5000e-004	6.9700e-003	4.7000e-004	7.4400e-003	1.8600e-003	4.4000e-004	2.3100e-003	336.1353	543.8955	880.0308	1.2023	0.7352	1,133.1817

2.2 Overall Operational

Mitigated Operational

	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					
Area	6.9000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	5.9571	5.9571	2.2000e-004	7.0000e-005	5.9839
Mobile	3.8100e-003	0.0184	0.0526	1.4000e-004	6.9700e-003	3.5000e-004	7.3200e-003	1.8600e-003	3.2000e-004	2.1900e-003	0.0000	10.3591	10.3591	2.6000e-004	0.0000	10.3645
Waste						0.0000	0.0000		0.0000	0.0000	0.3776	0.0000	0.3776	0.0223	0.0000	0.8461
Water						0.0000	0.0000		0.0000	0.0000	335.7577	527.5793	863.3370	1.1732	0.7338	1,115.4515
Total	0.0109	0.0200	0.0539	1.5000e-004	6.9700e-003	4.7000e-004	7.4400e-003	1.8600e-003	4.4000e-004	2.3100e-003	336.1353	543.8955	880.0308	1.1960	0.7339	1,132.6460

	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
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	0.52	0.18	0.05

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Final Grading & Paving	Paving	1/1/2017	1/2/2017	5	1	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Final Grading & Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Final Grading & Paving	Pavers	0	7.00	125	0.42
Final Grading & Paving	Rollers	0	7.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37

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
Final Grading & Paving	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Final Grading & Paving - 2017

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	0.0000	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
Paving	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							

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							

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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					
Mitigated	3.8100e-003	0.0184	0.0526	1.4000e-004	6.9700e-003	3.5000e-004	7.3200e-003	1.8600e-003	3.2000e-004	2.1900e-003	0.0000	10.3591	10.3591	2.6000e-004	0.0000	10.3645
Unmitigated	3.8100e-003	0.0184	0.0526	1.4000e-004	6.9700e-003	3.5000e-004	7.3200e-003	1.8600e-003	3.2000e-004	2.1900e-003	0.0000	10.3591	10.3591	2.6000e-004	0.0000	10.3645

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	4.95	4.05	4.05	18,131	18,131
Total	4.95	4.05	4.05	18,131	18,131

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.270000	0.270000	0.260000	0.000000	0.000000	0.000000	0.000000	0.200000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4.2153	4.2153	1.9000e-004	4.0000e-005	4.2315
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4.2153	4.2153	1.9000e-004	4.0000e-005	4.2315
NaturalGas Mitigated	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7418	1.7418	3.0000e-005	3.0000e-005	1.7524
NaturalGas Unmitigated	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7418	1.7418	3.0000e-005	3.0000e-005	1.7524

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	32640	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7418	1.7418	3.0000e-005	3.0000e-005	1.7524
Total		1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7418	1.7418	3.0000e-005	3.0000e-005	1.7524

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	32640	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7418	1.7418	3.0000e-005	3.0000e-005	1.7524
Total		1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7418	1.7418	3.0000e-005	3.0000e-005	1.7524

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	14490	4.2153	1.9000e-004	4.0000e-005	4.2315
Total		4.2153	1.9000e-004	4.0000e-005	4.2315

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	14490	4.2153	1.9000e-004	4.0000e-005	4.2315
Total		4.2153	1.9000e-004	4.0000e-005	4.2315

6.0 Area Detail

6.1 Mitigation Measures Area

	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					
Mitigated	6.9000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	6.9000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	6.9000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

Mitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	6.9000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	863.3370	1.1732	0.7338	1,115.4515
Unmitigated	863.3370	1.1795	0.7351	1,115.9871

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	949 / 0	863.3370	1.1795	0.7351	1,115.9871
Total		863.3370	1.1795	0.7351	1,115.9871

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	949 / 0	863.3370	1.1732	0.7338	1,115.4515
Total		863.3370	1.1732	0.7338	1,115.4515

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.3776	0.0223	0.0000	0.8461
Unmitigated	0.3776	0.0223	0.0000	0.8461

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.86	0.3776	0.0223	0.0000	0.8461
Total		0.3776	0.0223	0.0000	0.8461

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.86	0.3776	0.0223	0.0000	0.8461
Total		0.3776	0.0223	0.0000	0.8461

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Ridgecrest WWTP - Existing/No-Build
Kern-San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.50	1000sqft	0.03	1,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	32
Climate Zone	3			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction does not apply.

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 1500sf building area.

Construction Phase - Const does not apply.

Off-road Equipment - Forklift 1

Off-road Equipment - Const does not apply

Trips and VMT - Const does not apply

Grading - Const does not apply

Vehicle Trips - Assumes 3.3 trips/day/ksf weekday, 2.7 trips/day/ksf weekend, Weekend excludes trucks.

Vehicle Emission Factors - 80% LDA/T1/T2; 20%HDT.

Vehicle Emission Factors - .

Vehicle Emission Factors - .

Water And Wastewater - Includes 2.6MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Const does not apply

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDA	0.35	0.27

tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00

tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleTrips	ST_TR	1.32	2.70
tblVehicleTrips	SU_TR	0.68	2.70
tblVehicleTrips	WD_TR	6.97	3.30
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	346,875.00	949,000,000.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	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	lb/day										lb/day					
Area	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Mobile	0.0237	0.1017	0.2839	8.5000e-004	0.0411	2.0300e-003	0.0432	0.0110	1.8700e-003	0.0129		69.3938	69.3938	1.6300e-003		69.4280
Total	0.0624	0.1104	0.2914	9.0000e-004	0.0411	2.7000e-003	0.0438	0.0110	2.5400e-003	0.0135		79.9147	79.9147	1.8300e-003	1.9000e-004	80.0129

Mitigated Operational

	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	lb/day										lb/day					
Area	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Mobile	0.0237	0.1017	0.2839	8.5000e-004	0.0411	2.0300e-003	0.0432	0.0110	1.8700e-003	0.0129		69.3938	69.3938	1.6300e-003		69.4280
Total	0.0624	0.1104	0.2914	9.0000e-004	0.0411	2.7000e-003	0.0438	0.0110	2.5400e-003	0.0135		79.9147	79.9147	1.8300e-003	1.9000e-004	80.0129

	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
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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Final Grading & Paving	Paving	1/1/2017	1/2/2017	5	1	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Final Grading & Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Final Grading & Paving	Pavers	0	7.00	125	0.42
Final Grading & Paving	Rollers	0	7.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37

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
Final Grading & Paving	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Final Grading & Paving - 2017

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	lb/day										lb/day					
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
Paving	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

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	lb/day										lb/day					
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
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
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
Total	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000							

3.2 Final Grading & Paving - 2017

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	lb/day										lb/day					
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
Paving	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

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	lb/day										lb/day					
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
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
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
Total	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000							

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	0.0237	0.1017	0.2839	8.5000e-004	0.0411	2.0300e-003	0.0432	0.0110	1.8700e-003	0.0129		69.3938	69.3938	1.6300e-003		69.4280
Unmitigated	0.0237	0.1017	0.2839	8.5000e-004	0.0411	2.0300e-003	0.0432	0.0110	1.8700e-003	0.0129		69.3938	69.3938	1.6300e-003		69.4280

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	4.95	4.05	4.05	18,131	18,131
Total	4.95	4.05	4.05	18,131	18,131

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.270000	0.270000	0.260000	0.000000	0.000000	0.000000	0.000000	0.200000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
NaturalGas Unmitigated	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	89.4247	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Total		9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.0894247	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Total		9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Unmitigated	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	5.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0321					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004

Mitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	5.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0321					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Ridgecrest WWTP - Existing/No-Build
Kern-San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.50	1000sqft	0.03	1,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	32
Climate Zone	3			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction does not apply.

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 1500sf building area.

Construction Phase - Const does not apply.

Off-road Equipment - Forklift 1

Off-road Equipment - Const does not apply

Trips and VMT - Const does not apply

Grading - Const does not apply

Vehicle Trips - Assumes 3.3 trips/day/ksf weekday, 2.7 trips/day/ksf weekend, Weekend excludes trucks.

Vehicle Emission Factors - 80% LDA/T1/T2; 20%HDT.

Vehicle Emission Factors - .

Vehicle Emission Factors - .

Water And Wastewater - Includes 2.6MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Const does not apply

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDA	0.35	0.27

tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00

tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleTrips	ST_TR	1.32	2.70
tblVehicleTrips	SU_TR	0.68	2.70
tblVehicleTrips	WD_TR	6.97	3.30
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	346,875.00	949,000,000.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.2 Overall Operational**Unmitigated Operational**

	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	lb/day										lb/day					
Area	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Mobile	0.0233	0.1095	0.3590	7.9000e-004	0.0411	2.0400e-003	0.0432	0.0110	1.8700e-003	0.0129		64.9734	64.9734	1.6400e-003		65.0078
Total	0.0621	0.1183	0.3665	8.4000e-004	0.0411	2.7100e-003	0.0438	0.0110	2.5400e-003	0.0135		75.4942	75.4942	1.8400e-003	1.9000e-004	75.5927

Mitigated Operational

	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	lb/day										lb/day					
Area	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Mobile	0.0233	0.1095	0.3590	7.9000e-004	0.0411	2.0400e-003	0.0432	0.0110	1.8700e-003	0.0129		64.9734	64.9734	1.6400e-003		65.0078
Total	0.0621	0.1183	0.3665	8.4000e-004	0.0411	2.7100e-003	0.0438	0.0110	2.5400e-003	0.0135		75.4942	75.4942	1.8400e-003	1.9000e-004	75.5927

	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
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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Final Grading & Paving	Paving	1/1/2017	1/2/2017	5	1	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Final Grading & Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Final Grading & Paving	Pavers	0	7.00	125	0.42
Final Grading & Paving	Rollers	0	7.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37

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
Final Grading & Paving	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Final Grading & Paving - 2017

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	lb/day										lb/day					
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
Paving	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

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	lb/day										lb/day					
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
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
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
Total	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000							

3.2 Final Grading & Paving - 2017

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	lb/day										lb/day					
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
Paving	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

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	lb/day										lb/day					
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
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
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
Total	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000							

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	0.0233	0.1095	0.3590	7.9000e-004	0.0411	2.0400e-003	0.0432	0.0110	1.8700e-003	0.0129		64.9734	64.9734	1.6400e-003		65.0078
Unmitigated	0.0233	0.1095	0.3590	7.9000e-004	0.0411	2.0400e-003	0.0432	0.0110	1.8700e-003	0.0129		64.9734	64.9734	1.6400e-003		65.0078

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	4.95	4.05	4.05	18,131	18,131
Total	4.95	4.05	4.05	18,131	18,131

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.270000	0.270000	0.260000	0.000000	0.000000	0.000000	0.000000	0.200000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
NaturalGas Unmitigated	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	89.4247	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Total		9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.0894247	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Total		9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Unmitigated	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	5.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0321					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004

Mitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	5.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0321					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

Ridgecrest WWTP
Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.58	1000sqft	100.00	5,575.00	0
Parking Lot	10.00	Space	0.09	4,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	32
Climate Zone	3			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 5575sf building area, 10 space parking lot, 100 acres total area.

Construction Phase - Grading 40 days, Excavation 80 days, Concrete 200 days, Install 160 days, Bldg Const 100 days, Piping & Elec 180 days, Paving 40 days, Startup 60 days.

Off-road Equipment - Forklift 1

Off-road Equipment - Forklifts 2, Other Material Handling 1

Off-road Equipment - Crane 1, Forklift 2

Off-road Equipment - Exc 2, Graders 2, Dozers 2, Scrapers 4, Rollers 2

Off-road Equipment - Paver 1, Paving Equipment 1, Roller 2, Grader 1, Tractor 1

Off-road Equipment - 1 dozer, 1 tractor, 2 scrapers, 1 grader, 1 excavator, 2 roller/compactors; 8 hours daily

Off-road Equipment - Backhoe 1, Forklift 1

Trips and VMT - Worker/vendor trips based on model defaults/project info. (Worker/Vendor/HDT):Grading=20/4/0, Exc=30/1/0, Conc=6/6/0, Install=6/1/4, Bldg=20/1/14, Piping=16/1/0, Final=15/10/0.

Grading - No import/export of fill. All material balanced on site.

Vehicle Trips - Assumes 5.75 trips/day/sf weekday, 2.15 trips/day/sf weekend, Weekend excludes trucks.

Vehicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vehicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vehicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Water And Wastewater - Includes 3.6 MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Watering efficiency rates of 50% for unpaved roads 61% for exposed areas, 15 mph speed limit for onsite vehicle travel. T3 offroad equipment included in mitigation calc.

Operational Off-Road Equipment - Assumes 1 500hp genset operating 24 hours/day. Max limit of ~200 hours annually.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	8543	8363
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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tblConstructionPhase	PhaseEndDate	11/1/2017	10/31/2017
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tblOperationalOffRoadEquipment	OperHorsePower	84.00	500.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	24.00
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tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00

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tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
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tblVehicleTrips	WD_TR	6.97	5.75
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	1,290,375.00	1,314,000,000.00
tblWater	SepticTankPercent	10.33	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					
2016	0.6764	7.6039	5.0565	6.4600e-003	0.7501	0.3667	1.1168	0.3534	0.3373	0.6907	0.0000	602.6307	602.6307	0.1726	0.0000	606.2545
2017	0.1239	1.2366	0.7352	1.2200e-003	0.0154	0.0721	0.0875	4.1100e-003	0.0664	0.0705	0.0000	109.3592	109.3592	0.0286	0.0000	109.9601
2018	0.0763	0.6767	0.6560	1.0900e-003	0.0288	0.0449	0.0738	7.6900e-003	0.0414	0.0490	0.0000	91.8017	91.8017	0.0208	0.0000	92.2383
2019	0.0176	0.1730	0.1519	2.3000e-004	2.1000e-003	9.7300e-003	0.0118	5.7000e-004	8.9500e-003	9.5200e-003	0.0000	20.5694	20.5694	5.6500e-003	0.0000	20.6881
Total	0.8943	9.6903	6.5995	9.0000e-003	0.7964	0.4935	1.2899	0.3658	0.4540	0.8198	0.0000	824.3610	824.3610	0.2276	0.0000	829.1408

2.2 Overall Operational

Unmitigated Operational

	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					
Area	0.0413	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004
Energy	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	23.1646	23.1646	8.8000e-004	2.7000e-004	23.2682
Mobile	0.0462	0.3604	0.7208	1.6100e-003	0.0426	6.9000e-003	0.0495	0.0116	6.3500e-003	0.0180	0.0000	134.7721	134.7721	1.3300e-003	0.0000	134.8000
Offroad	0.0147	0.1422	0.0787	3.9000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	40.3720	40.3720	1.2100e-003	0.0000	40.3973
Waste						0.0000	0.0000		0.0000	0.0000	1.4047	0.0000	1.4047	0.0830	0.0000	3.1480
Water						0.0000	0.0000		0.0000	0.0000	464.8953	730.4944	1,195.3897	1.6332	1.0178	1,545.2129
Total	0.1029	0.5085	0.8046	2.0400e-003	0.0426	0.0117	0.0542	0.0116	0.0111	0.0227	466.3000	928.8033	1,395.1033	1.7196	1.0181	1,746.8267

2.2 Overall Operational

Mitigated Operational

	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					
Area	0.0413	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004
Energy	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	23.1646	23.1646	8.8000e-004	2.7000e-004	23.2682
Mobile	0.0462	0.3604	0.7208	1.6100e-003	0.0426	6.9000e-003	0.0495	0.0116	6.3500e-003	0.0180	0.0000	134.7721	134.7721	1.3300e-003	0.0000	134.8000
Offroad	0.0147	0.1422	0.0787	3.9000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	40.3720	40.3720	1.2100e-003	0.0000	40.3973
Waste						0.0000	0.0000		0.0000	0.0000	1.4047	0.0000	1.4047	0.0830	0.0000	3.1480
Water						0.0000	0.0000		0.0000	0.0000	464.8953	730.4944	1,195.3897	1.6244	1.0160	1,544.4712
Total	0.1029	0.5085	0.8046	2.0400e-003	0.0426	0.0117	0.0542	0.0116	0.0111	0.0227	466.3000	928.8033	1,395.1033	1.7109	1.0163	1,746.0850

	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
Percent Reduction	14.31	27.97	9.78	19.12	0.00	36.96	7.95	0.00	38.79	18.96	0.00	4.35	2.89	0.58	0.18	2.36

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading & Site Work	Site Preparation	1/1/2016	2/25/2016	5	40	Grading & Site Work
2	Excavation	Grading	2/26/2016	6/16/2016	5	80	Excavation
3	Concrete Work	Building Construction	6/16/2016	3/22/2017	5	200	Concrete Work
4	Equipment Install	Building Construction	3/22/2017	10/31/2017	5	160	Equipment Install
5	Building Construction	Building Construction	11/1/2017	3/20/2018	5	100	Building Construction
6	Piping & Electrical	Building Construction	3/22/2018	11/28/2018	5	180	Piping & Electrical
7	Final Grading & Paving	Paving	11/29/2018	1/23/2019	5	40	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading & Site Work	Excavators	1	8.00	162	0.38
Grading & Site Work	Graders	1	8.00	174	0.41
Grading & Site Work	Rollers	2	8.00	80	0.38
Grading & Site Work	Rubber Tired Dozers	1	8.00	255	0.40
Grading & Site Work	Scrapers	2	8.00	361	0.48
Grading & Site Work	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Excavation	Cranes	0	7.00	226	0.29
Excavation	Excavators	2	8.00	162	0.38
Excavation	Forklifts	0	8.00	89	0.20
Excavation	Generator Sets	0	8.00	84	0.74
Excavation	Graders	2	8.00	174	0.41

Excavation	Rollers	2	8.00	80	0.38
Excavation	Rubber Tired Dozers	2	8.00	255	0.40
Excavation	Scrapers	4	8.00	361	0.48
Excavation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Excavation	Welders	0	8.00	46	0.45
Concrete Work	Cranes	0	7.00	226	0.29
Concrete Work	Forklifts	2	8.00	89	0.20
Concrete Work	Generator Sets	0	8.00	84	0.74
Concrete Work	Other Material Handling Equipment	1	8.00	167	0.40
Concrete Work	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Concrete Work	Welders	0	8.00	46	0.45
Equipment Install	Cranes	1	8.00	226	0.29
Equipment Install	Forklifts	2	8.00	89	0.20
Equipment Install	Generator Sets	0	8.00	84	0.74
Equipment Install	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Equipment Install	Welders	0	8.00	46	0.45
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Piping & Electrical	Cranes	0	7.00	226	0.29
Piping & Electrical	Forklifts	1	8.00	89	0.20
Piping & Electrical	Generator Sets	0	8.00	84	0.74
Piping & Electrical	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Piping & Electrical	Welders	0	8.00	46	0.45
Final Grading & Paving	Graders	1	8.00	174	0.41
Final Grading & Paving	Pavers	1	8.00	125	0.42

Final Grading & Paving	Paving Equipment	1	8.00	130	0.36
Final Grading & Paving	Rollers	2	8.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading & Site Work	8	20.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	12	30.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Work	3	6.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Equipment Install	3	6.00	1.00	4.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	1	20.00	1.00	14.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Piping & Electrical	2	16.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Final Grading & Paving	6	15.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading & Site Work - 2016

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					0.1204	0.0000	0.1204	0.0662	0.0000	0.0662	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1285	1.4671	0.9465	1.1700e-003		0.0715	0.0715		0.0658	0.0658	0.0000	110.4287	110.4287	0.0333	0.0000	111.1282
Total	0.1285	1.4671	0.9465	1.1700e-003	0.1204	0.0715	0.1919	0.0662	0.0658	0.1320	0.0000	110.4287	110.4287	0.0333	0.0000	111.1282

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	9.4000e-004	7.4600e-003	0.0115	2.0000e-005	4.7000e-004	1.3000e-004	6.0000e-004	1.4000e-004	1.2000e-004	2.5000e-004	0.0000	1.5709	1.5709	1.0000e-005	0.0000	1.5712
Worker	1.7100e-003	2.7300e-003	0.0265	6.0000e-005	5.0100e-003	4.0000e-005	5.0500e-003	1.3300e-003	3.0000e-005	1.3700e-003	0.0000	4.7706	4.7706	2.4000e-004	0.0000	4.7756
Total	2.6500e-003	0.0102	0.0380	8.0000e-005	5.4800e-003	1.7000e-004	5.6500e-003	1.4700e-003	1.5000e-004	1.6200e-003	0.0000	6.3414	6.3414	2.5000e-004	0.0000	6.3467

3.2 Grading & Site Work - 2016

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					0.0470	0.0000	0.0470	0.0258	0.0000	0.0258	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0287	0.5693	0.7110	1.1700e-003		0.0257	0.0257		0.0257	0.0257	0.0000	110.4286	110.4286	0.0333	0.0000	111.1281
Total	0.0287	0.5693	0.7110	1.1700e-003	0.0470	0.0257	0.0727	0.0258	0.0257	0.0515	0.0000	110.4286	110.4286	0.0333	0.0000	111.1281

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	9.4000e-004	7.4600e-003	0.0115	2.0000e-005	4.7000e-004	1.3000e-004	6.0000e-004	1.4000e-004	1.2000e-004	2.5000e-004	0.0000	1.5709	1.5709	1.0000e-005	0.0000	1.5712
Worker	1.7100e-003	2.7300e-003	0.0265	6.0000e-005	5.0100e-003	4.0000e-005	5.0500e-003	1.3300e-003	3.0000e-005	1.3700e-003	0.0000	4.7706	4.7706	2.4000e-004	0.0000	4.7756
Total	2.6500e-003	0.0102	0.0380	8.0000e-005	5.4800e-003	1.7000e-004	5.6500e-003	1.4700e-003	1.5000e-004	1.6200e-003	0.0000	6.3414	6.3414	2.5000e-004	0.0000	6.3467

3.3 Excavation - 2016**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					0.5878	0.0000	0.5878	0.2763	0.0000	0.2763	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4598	5.3588	3.4318	4.2200e-003		0.2475	0.2475		0.2277	0.2277	0.0000	398.4490	398.4490	0.1202	0.0000	400.9730
Total	0.4598	5.3588	3.4318	4.2200e-003	0.5878	0.2475	0.8354	0.2763	0.2277	0.5040	0.0000	398.4490	398.4490	0.1202	0.0000	400.9730

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	4.7000e-004	3.7300e-003	5.7700e-003	1.0000e-005	4.1000e-004	6.0000e-005	4.7000e-004	1.1000e-004	6.0000e-005	1.7000e-004	0.0000	0.7854	0.7854	1.0000e-005	0.0000	0.7856
Worker	5.1200e-003	8.1800e-003	0.0795	1.9000e-004	0.0281	1.1000e-004	0.0282	7.1900e-003	1.0000e-004	7.3000e-003	0.0000	14.3117	14.3117	7.2000e-004	0.0000	14.3268
Total	5.5900e-003	0.0119	0.0853	2.0000e-004	0.0285	1.7000e-004	0.0287	7.3000e-003	1.6000e-004	7.4700e-003	0.0000	15.0971	15.0971	7.3000e-004	0.0000	15.1124

3.3 Excavation - 2016**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					0.2293	0.0000	0.2293	0.1077	0.0000	0.1077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1036	2.0209	2.4981	4.2200e-003		0.0849	0.0849		0.0849	0.0849	0.0000	398.4486	398.4486	0.1202	0.0000	400.9725
Total	0.1036	2.0209	2.4981	4.2200e-003	0.2293	0.0849	0.3142	0.1077	0.0849	0.1927	0.0000	398.4486	398.4486	0.1202	0.0000	400.9725

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	4.7000e-004	3.7300e-003	5.7700e-003	1.0000e-005	4.1000e-004	6.0000e-005	4.7000e-004	1.1000e-004	6.0000e-005	1.7000e-004	0.0000	0.7854	0.7854	1.0000e-005	0.0000	0.7856
Worker	5.1200e-003	8.1800e-003	0.0795	1.9000e-004	0.0281	1.1000e-004	0.0282	7.1900e-003	1.0000e-004	7.3000e-003	0.0000	14.3117	14.3117	7.2000e-004	0.0000	14.3268
Total	5.5900e-003	0.0119	0.0853	2.0000e-004	0.0285	1.7000e-004	0.0287	7.3000e-003	1.6000e-004	7.4700e-003	0.0000	15.0971	15.0971	7.3000e-004	0.0000	15.1124

3.4 Concrete Work - 2016

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	0.0731	0.7133	0.4653	6.2000e-004		0.0466	0.0466		0.0429	0.0429	0.0000	58.8689	58.8689	0.0178	0.0000	59.2418
Total	0.0731	0.7133	0.4653	6.2000e-004		0.0466	0.0466		0.0429	0.0429	0.0000	58.8689	58.8689	0.0178	0.0000	59.2418

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	5.0000e-003	0.0397	0.0614	9.0000e-005	2.5300e-003	6.9000e-004	3.2200e-003	7.2000e-004	6.3000e-004	1.3600e-003	0.0000	8.3649	8.3649	7.0000e-005	0.0000	8.3664
Worker	1.8200e-003	2.9000e-003	0.0282	7.0000e-005	5.3400e-003	4.0000e-005	5.3800e-003	1.4200e-003	4.0000e-005	1.4500e-003	0.0000	5.0807	5.0807	2.6000e-004	0.0000	5.0860
Total	6.8200e-003	0.0426	0.0896	1.6000e-004	7.8700e-003	7.3000e-004	8.6000e-003	2.1400e-003	6.7000e-004	2.8100e-003	0.0000	13.4455	13.4455	3.3000e-004	0.0000	13.4524

3.4 Concrete Work - 2016**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	0.0154	0.3162	0.4744	6.2000e-004		0.0179	0.0179		0.0179	0.0179	0.0000	58.8688	58.8688	0.0178	0.0000	59.2417
Total	0.0154	0.3162	0.4744	6.2000e-004		0.0179	0.0179		0.0179	0.0179	0.0000	58.8688	58.8688	0.0178	0.0000	59.2417

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	5.0000e-003	0.0397	0.0614	9.0000e-005	2.5300e-003	6.9000e-004	3.2200e-003	7.2000e-004	6.3000e-004	1.3600e-003	0.0000	8.3649	8.3649	7.0000e-005	0.0000	8.3664
Worker	1.8200e-003	2.9000e-003	0.0282	7.0000e-005	5.3400e-003	4.0000e-005	5.3800e-003	1.4200e-003	4.0000e-005	1.4500e-003	0.0000	5.0807	5.0807	2.6000e-004	0.0000	5.0860
Total	6.8200e-003	0.0426	0.0896	1.6000e-004	7.8700e-003	7.3000e-004	8.6000e-003	2.1400e-003	6.7000e-004	2.8100e-003	0.0000	13.4455	13.4455	3.3000e-004	0.0000	13.4524

3.4 Concrete Work - 2017

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	0.0268	0.2593	0.1870	2.5000e-004		0.0169	0.0169		0.0155	0.0155	0.0000	23.6713	23.6713	7.2500e-003	0.0000	23.8236
Total	0.0268	0.2593	0.1870	2.5000e-004		0.0169	0.0169		0.0155	0.0155	0.0000	23.6713	23.6713	7.2500e-003	0.0000	23.8236

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	1.8100e-003	0.0143	0.0233	4.0000e-005	1.0300e-003	2.4000e-004	1.2700e-003	3.0000e-004	2.2000e-004	5.1000e-004	0.0000	3.3586	3.3586	3.0000e-005	0.0000	3.3592
Worker	6.4000e-004	1.0500e-003	0.0101	3.0000e-005	2.1800e-003	2.0000e-005	2.2000e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.9927	1.9927	1.0000e-004	0.0000	1.9947
Total	2.4500e-003	0.0154	0.0334	7.0000e-005	3.2100e-003	2.6000e-004	3.4700e-003	8.8000e-004	2.3000e-004	1.1000e-003	0.0000	5.3513	5.3513	1.3000e-004	0.0000	5.3539

3.4 Concrete Work - 2017

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	6.2800e-003	0.1292	0.1938	2.5000e-004		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003	0.0000	23.6713	23.6713	7.2500e-003	0.0000	23.8236
Total	6.2800e-003	0.1292	0.1938	2.5000e-004		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003	0.0000	23.6713	23.6713	7.2500e-003	0.0000	23.8236

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	1.8100e-003	0.0143	0.0233	4.0000e-005	1.0300e-003	2.4000e-004	1.2700e-003	3.0000e-004	2.2000e-004	5.1000e-004	0.0000	3.3586	3.3586	3.0000e-005	0.0000	3.3592
Worker	6.4000e-004	1.0500e-003	0.0101	3.0000e-005	2.1800e-003	2.0000e-005	2.2000e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.9927	1.9927	1.0000e-004	0.0000	1.9947
Total	2.4500e-003	0.0154	0.0334	7.0000e-005	3.2100e-003	2.6000e-004	3.4700e-003	8.8000e-004	2.3000e-004	1.1000e-003	0.0000	5.3513	5.3513	1.3000e-004	0.0000	5.3539

3.5 Equipment Install - 2017

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	0.0856	0.9077	0.4204	7.0000e-004		0.0516	0.0516		0.0474	0.0474	0.0000	64.5732	64.5732	0.0198	0.0000	64.9887
Total	0.0856	0.9077	0.4204	7.0000e-004		0.0516	0.0516		0.0474	0.0474	0.0000	64.5732	64.5732	0.0198	0.0000	64.9887

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	4.0000e-005	4.6000e-004	4.6000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1337	0.1337	0.0000	0.0000	0.1337
Vendor	8.3000e-004	6.5900e-003	0.0107	2.0000e-005	4.8000e-004	1.1000e-004	5.8000e-004	1.4000e-004	1.0000e-004	2.4000e-004	0.0000	1.5442	1.5442	1.0000e-005	0.0000	1.5444
Worker	1.7800e-003	2.9100e-003	0.0279	8.0000e-005	6.0100e-003	4.0000e-005	6.0600e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.4972	5.4972	2.6000e-004	0.0000	5.5027
Total	2.6500e-003	9.9600e-003	0.0391	1.0000e-004	6.5200e-003	1.6000e-004	6.6800e-003	1.7500e-003	1.5000e-004	1.9000e-003	0.0000	7.1750	7.1750	2.7000e-004	0.0000	7.1808

3.5 Equipment Install - 2017**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	0.0171	0.3522	0.4263	7.0000e-004		0.0178	0.0178		0.0178	0.0178	0.0000	64.5732	64.5732	0.0198	0.0000	64.9886
Total	0.0171	0.3522	0.4263	7.0000e-004		0.0178	0.0178		0.0178	0.0178	0.0000	64.5732	64.5732	0.0198	0.0000	64.9886

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	4.0000e-005	4.6000e-004	4.6000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1337	0.1337	0.0000	0.0000	0.1337
Vendor	8.3000e-004	6.5900e-003	0.0107	2.0000e-005	4.8000e-004	1.1000e-004	5.8000e-004	1.4000e-004	1.0000e-004	2.4000e-004	0.0000	1.5442	1.5442	1.0000e-005	0.0000	1.5444
Worker	1.7800e-003	2.9100e-003	0.0279	8.0000e-005	6.0100e-003	4.0000e-005	6.0600e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.4972	5.4972	2.6000e-004	0.0000	5.5027
Total	2.6500e-003	9.9600e-003	0.0391	1.0000e-004	6.5200e-003	1.6000e-004	6.6800e-003	1.7500e-003	1.5000e-004	1.9000e-003	0.0000	7.1750	7.1750	2.7000e-004	0.0000	7.1808

3.6 Building Construction - 2017

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	4.5400e-003	0.0393	0.0269	3.0000e-005		3.2400e-003	3.2400e-003		2.9800e-003	2.9800e-003	0.0000	3.0477	3.0477	9.3000e-004	0.0000	3.0673
Total	4.5400e-003	0.0393	0.0269	3.0000e-005		3.2400e-003	3.2400e-003		2.9800e-003	2.9800e-003	0.0000	3.0477	3.0477	9.3000e-004	0.0000	3.0673

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	6.0000e-005	7.0000e-004	7.0000e-004	0.0000	1.0000e-004	1.0000e-005	1.1000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2012	0.2012	0.0000	0.0000	0.2012
Vendor	2.2000e-004	1.7700e-003	2.8800e-003	0.0000	1.3000e-004	3.0000e-005	1.6000e-004	4.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.4150	0.4150	0.0000	0.0000	0.4151
Worker	1.5900e-003	2.6000e-003	0.0250	7.0000e-005	5.3900e-003	4.0000e-005	5.4300e-003	1.4300e-003	4.0000e-005	1.4700e-003	0.0000	4.9246	4.9246	2.4000e-004	0.0000	4.9295
Total	1.8700e-003	5.0700e-003	0.0286	7.0000e-005	5.6200e-003	8.0000e-005	5.7000e-003	1.5000e-003	8.0000e-005	1.5700e-003	0.0000	5.5407	5.5407	2.4000e-004	0.0000	5.5458

3.6 Building Construction - 2017

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	8.1000e-004	0.0185	0.0250	3.0000e-005		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	3.0477	3.0477	9.3000e-004	0.0000	3.0673
Total	8.1000e-004	0.0185	0.0250	3.0000e-005		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	3.0477	3.0477	9.3000e-004	0.0000	3.0673

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	6.0000e-005	7.0000e-004	7.0000e-004	0.0000	1.0000e-004	1.0000e-005	1.1000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2012	0.2012	0.0000	0.0000	0.2012
Vendor	2.2000e-004	1.7700e-003	2.8800e-003	0.0000	1.3000e-004	3.0000e-005	1.6000e-004	4.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.4150	0.4150	0.0000	0.0000	0.4151
Worker	1.5900e-003	2.6000e-003	0.0250	7.0000e-005	5.3900e-003	4.0000e-005	5.4300e-003	1.4300e-003	4.0000e-005	1.4700e-003	0.0000	4.9246	4.9246	2.4000e-004	0.0000	4.9295
Total	1.8700e-003	5.0700e-003	0.0286	7.0000e-005	5.6200e-003	8.0000e-005	5.7000e-003	1.5000e-003	8.0000e-005	1.5700e-003	0.0000	5.5407	5.5407	2.4000e-004	0.0000	5.5458

3.6 Building Construction - 2018

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	5.0800e-003	0.0449	0.0345	4.0000e-005		3.5800e-003	3.5800e-003		3.2900e-003	3.2900e-003	0.0000	3.9761	3.9761	1.2400e-003	0.0000	4.0021
Total	5.0800e-003	0.0449	0.0345	4.0000e-005		3.5800e-003	3.5800e-003		3.2900e-003	3.2900e-003	0.0000	3.9761	3.9761	1.2400e-003	0.0000	4.0021

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	8.3000e-004	8.9000e-004	0.0000	1.1000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2620	0.2620	0.0000	0.0000	0.2620
Vendor	2.7000e-004	2.1100e-003	3.6100e-003	1.0000e-005	1.7000e-004	4.0000e-005	2.0000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.5405	0.5405	0.0000	0.0000	0.5406
Worker	1.8400e-003	3.0800e-003	0.0292	9.0000e-005	7.1400e-003	5.0000e-005	7.1900e-003	1.9000e-003	5.0000e-005	1.9400e-003	0.0000	6.2620	6.2620	2.9000e-004	0.0000	6.2680
Total	2.1800e-003	6.0200e-003	0.0337	1.0000e-004	7.4200e-003	1.0000e-004	7.5100e-003	1.9800e-003	9.0000e-005	2.0600e-003	0.0000	7.0645	7.0645	2.9000e-004	0.0000	7.0706

3.6 Building Construction - 2018

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	1.0700e-003	0.0245	0.0331	4.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	3.9761	3.9761	1.2400e-003	0.0000	4.0021
Total	1.0700e-003	0.0245	0.0331	4.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	3.9761	3.9761	1.2400e-003	0.0000	4.0021

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	8.3000e-004	8.9000e-004	0.0000	1.1000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2620	0.2620	0.0000	0.0000	0.2620
Vendor	2.7000e-004	2.1100e-003	3.6100e-003	1.0000e-005	1.7000e-004	4.0000e-005	2.0000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.5405	0.5405	0.0000	0.0000	0.5406
Worker	1.8400e-003	3.0800e-003	0.0292	9.0000e-005	7.1400e-003	5.0000e-005	7.1900e-003	1.9000e-003	5.0000e-005	1.9400e-003	0.0000	6.2620	6.2620	2.9000e-004	0.0000	6.2680
Total	2.1800e-003	6.0200e-003	0.0337	1.0000e-004	7.4200e-003	1.0000e-004	7.5100e-003	1.9800e-003	9.0000e-005	2.0600e-003	0.0000	7.0645	7.0645	2.9000e-004	0.0000	7.0706

3.7 Piping & Electrical - 2018

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	0.0370	0.3488	0.2930	3.8000e-004		0.0260	0.0260		0.0239	0.0239	0.0000	34.9012	34.9012	0.0109	0.0000	35.1294
Total	0.0370	0.3488	0.2930	3.8000e-004		0.0260	0.0260		0.0239	0.0239	0.0000	34.9012	34.9012	0.0109	0.0000	35.1294

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	8.6000e-004	6.6600e-003	0.0114	2.0000e-005	5.3000e-004	1.1000e-004	6.5000e-004	1.5000e-004	1.0000e-004	2.6000e-004	0.0000	1.7069	1.7069	1.0000e-005	0.0000	1.7072
Worker	4.6400e-003	7.7900e-003	0.0738	2.3000e-004	0.0180	1.3000e-004	0.0182	4.7900e-003	1.2000e-004	4.9100e-003	0.0000	15.8197	15.8197	7.2000e-004	0.0000	15.8349
Total	5.5000e-003	0.0145	0.0852	2.5000e-004	0.0186	2.4000e-004	0.0188	4.9400e-003	2.2000e-004	5.1700e-003	0.0000	17.5266	17.5266	7.3000e-004	0.0000	17.5421

3.7 Piping & Electrical - 2018

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	9.3700e-003	0.2140	0.2890	3.8000e-004		0.0150	0.0150		0.0150	0.0150	0.0000	34.9012	34.9012	0.0109	0.0000	35.1293
Total	9.3700e-003	0.2140	0.2890	3.8000e-004		0.0150	0.0150		0.0150	0.0150	0.0000	34.9012	34.9012	0.0109	0.0000	35.1293

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	8.6000e-004	6.6600e-003	0.0114	2.0000e-005	5.3000e-004	1.1000e-004	6.5000e-004	1.5000e-004	1.0000e-004	2.6000e-004	0.0000	1.7069	1.7069	1.0000e-005	0.0000	1.7072
Worker	4.6400e-003	7.7900e-003	0.0738	2.3000e-004	0.0180	1.3000e-004	0.0182	4.7900e-003	1.2000e-004	4.9100e-003	0.0000	15.8197	15.8197	7.2000e-004	0.0000	15.8349
Total	5.5000e-003	0.0145	0.0852	2.5000e-004	0.0186	2.4000e-004	0.0188	4.9400e-003	2.2000e-004	5.1700e-003	0.0000	17.5266	17.5266	7.3000e-004	0.0000	17.5421

3.8 Final Grading & Paving - 2018

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	0.0249	0.2532	0.1862	2.7000e-004		0.0149	0.0149		0.0137	0.0137	0.0000	24.2572	24.2572	7.5500e-003	0.0000	24.4158
Paving	7.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0249	0.2532	0.1862	2.7000e-004		0.0149	0.0149		0.0137	0.0137	0.0000	24.2572	24.2572	7.5500e-003	0.0000	24.4158

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	1.1000e-003	8.5100e-003	0.0146	2.0000e-005	6.8000e-004	1.4000e-004	8.3000e-004	2.0000e-004	1.3000e-004	3.3000e-004	0.0000	2.1810	2.1810	2.0000e-005	0.0000	2.1814
Worker	5.6000e-004	9.3000e-004	8.8400e-003	3.0000e-005	2.1600e-003	2.0000e-005	2.1800e-003	5.7000e-004	1.0000e-005	5.9000e-004	0.0000	1.8951	1.8951	9.0000e-005	0.0000	1.8969
Total	1.6600e-003	9.4400e-003	0.0234	5.0000e-005	2.8400e-003	1.6000e-004	3.0100e-003	7.7000e-004	1.4000e-004	9.2000e-004	0.0000	4.0761	4.0761	1.1000e-004	0.0000	4.0783

3.8 Final Grading & Paving - 2018

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	6.5100e-003	0.1340	0.2006	2.7000e-004		7.6400e-003	7.6400e-003		7.6400e-003	7.6400e-003	0.0000	24.2572	24.2572	7.5500e-003	0.0000	24.4157
Paving	7.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.5800e-003	0.1340	0.2006	2.7000e-004		7.6400e-003	7.6400e-003		7.6400e-003	7.6400e-003	0.0000	24.2572	24.2572	7.5500e-003	0.0000	24.4157

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	1.1000e-003	8.5100e-003	0.0146	2.0000e-005	6.8000e-004	1.4000e-004	8.3000e-004	2.0000e-004	1.3000e-004	3.3000e-004	0.0000	2.1810	2.1810	2.0000e-005	0.0000	2.1814
Worker	5.6000e-004	9.3000e-004	8.8400e-003	3.0000e-005	2.1600e-003	2.0000e-005	2.1800e-003	5.7000e-004	1.0000e-005	5.9000e-004	0.0000	1.8951	1.8951	9.0000e-005	0.0000	1.8969
Total	1.6600e-003	9.4400e-003	0.0234	5.0000e-005	2.8400e-003	1.6000e-004	3.0100e-003	7.7000e-004	1.4000e-004	9.2000e-004	0.0000	4.0761	4.0761	1.1000e-004	0.0000	4.0783

3.8 Final Grading & Paving - 2019

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	0.0165	0.1667	0.1359	2.0000e-004		9.6200e-003	9.6200e-003		8.8500e-003	8.8500e-003	0.0000	17.6355	17.6355	5.5800e-003	0.0000	17.7527
Paving	5.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1667	0.1359	2.0000e-004		9.6200e-003	9.6200e-003		8.8500e-003	8.8500e-003	0.0000	17.6355	17.6355	5.5800e-003	0.0000	17.7527

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	7.2000e-004	5.7000e-003	0.0101	2.0000e-005	5.0000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.5842	1.5842	1.0000e-005	0.0000	1.5845
Worker	3.7000e-004	6.3000e-004	5.9100e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3497	1.3497	6.0000e-005	0.0000	1.3510
Total	1.0900e-003	6.3300e-003	0.0160	4.0000e-005	2.1000e-003	1.1000e-004	2.2100e-003	5.6000e-004	1.0000e-004	6.6000e-004	0.0000	2.9339	2.9339	7.0000e-005	0.0000	2.9354

3.8 Final Grading & Paving - 2019

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	4.8100e-003	0.0991	0.1483	2.0000e-004		5.6500e-003	5.6500e-003		5.6500e-003	5.6500e-003	0.0000	17.6355	17.6355	5.5800e-003	0.0000	17.7526
Paving	5.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	4.8600e-003	0.0991	0.1483	2.0000e-004		5.6500e-003	5.6500e-003		5.6500e-003	5.6500e-003	0.0000	17.6355	17.6355	5.5800e-003	0.0000	17.7526

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	7.2000e-004	5.7000e-003	0.0101	2.0000e-005	5.0000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.5842	1.5842	1.0000e-005	0.0000	1.5845
Worker	3.7000e-004	6.3000e-004	5.9100e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3497	1.3497	6.0000e-005	0.0000	1.3510
Total	1.0900e-003	6.3300e-003	0.0160	4.0000e-005	2.1000e-003	1.1000e-004	2.2100e-003	5.6000e-004	1.0000e-004	6.6000e-004	0.0000	2.9339	2.9339	7.0000e-005	0.0000	2.9354

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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					
Mitigated	0.0462	0.3604	0.7208	1.6100e-003	0.0426	6.9000e-003	0.0495	0.0116	6.3500e-003	0.0180	0.0000	134.7721	134.7721	1.3300e-003	0.0000	134.8000
Unmitigated	0.0462	0.3604	0.7208	1.6100e-003	0.0426	6.9000e-003	0.0495	0.0116	6.3500e-003	0.0180	0.0000	134.7721	134.7721	1.3300e-003	0.0000	134.8000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	32.09	12.00	12.00	101,785	101,785
Parking Lot	0.00	0.00	0.00		
Total	32.09	12.00	12.00	101,785	101,785

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.070000	0.070000	0.070000	0.000000	0.000000	0.000000	0.000000	0.790000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	16.6909	16.6909	7.5000e-004	1.6000e-004	16.7552
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	16.6909	16.6909	7.5000e-004	1.6000e-004	16.7552
NaturalGas Mitigated	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4737	6.4737	1.2000e-004	1.2000e-004	6.5131
NaturalGas Unmitigated	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4737	6.4737	1.2000e-004	1.2000e-004	6.5131

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	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
General Light Industry	121312	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4737	6.4737	1.2000e-004	1.2000e-004	6.5131
Total		6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4737	6.4737	1.2000e-004	1.2000e-004	6.5131

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	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
General Light Industry	121312	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4737	6.4737	1.2000e-004	1.2000e-004	6.5131
Total		6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4737	6.4737	1.2000e-004	1.2000e-004	6.5131

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	53854.5	15.6669	7.1000e-004	1.5000e-004	15.7272
Parking Lot	3520	1.0240	5.0000e-005	1.0000e-005	1.0280
Total		16.6909	7.6000e-004	1.6000e-004	16.7552

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	53854.5	15.6669	7.1000e-004	1.5000e-004	15.7272
Parking Lot	3520	1.0240	5.0000e-005	1.0000e-005	1.0280
Total		16.6909	7.6000e-004	1.6000e-004	16.7552

6.0 Area Detail

6.1 Mitigation Measures Area

	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					
Mitigated	0.0413	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004
Unmitigated	0.0413	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.9000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0374					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004
Total	0.0413	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004

6.2 Area by SubCategory

Mitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.9000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0374					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004
Total	0.0413	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1,195.3897	1.6244	1.0160	1,544.4712
Unmitigated	1,195.3897	1.6332	1.0178	1,545.2129

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1314 / 0	1,195.3897	1.6332	1.0178	1,545.2129
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		1,195.3897	1.6332	1.0178	1,545.2129

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1314 / 0	1,195.3897	1.6244	1.0160	1,544.4712
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		1,195.3897	1.6244	1.0160	1,544.4712

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.4047	0.0830	0.0000	3.1480
Unmitigated	1.4047	0.0830	0.0000	3.1480

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	6.92	1.4047	0.0830	0.0000	3.1480
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		1.4047	0.0830	0.0000	3.1480

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	6.92	1.4047	0.0830	0.0000	3.1480
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		1.4047	0.0830	0.0000	3.1480

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	1	24.00	8	500	0.74	Diesel

UnMitigated/Mitigated

	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
Equipment Type	tons/yr										MT/yr					
Generator Sets	0.0147	0.1422	0.0787	3.9000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	40.3720	40.3720	1.2100e-003	0.0000	40.3973
Total	0.0147	0.1422	0.0787	3.9000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	40.3720	40.3720	1.2100e-003	0.0000	40.3973

10.0 Vegetation

Ridgecrest WWTP
Kern-San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.58	1000sqft	100.00	5,575.00	0
Parking Lot	10.00	Space	0.09	4,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	32
Climate Zone	3			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 5575sf building area, 10 space parking lot, 100 acres total area.

Construction Phase - Grading 40 days, Excavation 80 days, Concrete 200 days, Install 160 days, Bldg Const 100 days, Piping & Elec 180 days, Paving 40 days, Startup 60 days.

Off-road Equipment - Forklift 1

Off-road Equipment - Forklifts 2, Other Material Handling 1

Off-road Equipment - Crane 1, Forklift 2

Off-road Equipment - Exc 2, Graders 2, Dozers 2, Scrapers 4, Rollers 2

Off-road Equipment - Paver 1, Paving Equipment 1, Roller 2, Grader 1, Tractor 1

Off-road Equipment - 1 dozer, 1 tractor, 2 scrapers, 1 grader, 1 excavator, 2 roller/compactors; 8 hours daily

Off-road Equipment - Backhoe 1, Forklift 1

Trips and VMT - Worker/vendor trips based on model defaults/project info. (Worker/Vendor/HDT):Grading=20/4/0, Exc=30/1/0, Conc=6/6/0, Install=6/1/4, Bldg=20/1/14, Piping=16/1/0, Final=15/10/0.

Grading - No import/export of fill. All material balanced on site.

Vehicle Trips - Assumes 5.75 trips/day/sf weekday, 2.15 trips/day/sf weekend, Weekend excludes trucks.

Vehicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vehicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vehicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Water And Wastewater - Includes 3.6 MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Watering efficiency rates of 50% for unpaved roads 61% for exposed areas, 15 mph speed limit for onsite vehicle travel. T3 offroad equipment included in mitigation calc.

Operational Off-Road Equipment - Assumes 1 500hp genset operating 24 hours/day. Max limit of ~200 hours annually.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	8543	8363
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	3,100.00	200.00
tblConstructionPhase	NumDays	3,100.00	160.00
tblConstructionPhase	NumDays	3,100.00	100.00
tblConstructionPhase	NumDays	3,100.00	180.00
tblConstructionPhase	NumDays	310.00	80.00
tblConstructionPhase	NumDays	220.00	40.00
tblConstructionPhase	NumDays	120.00	40.00
tblConstructionPhase	PhaseEndDate	3/23/2017	3/22/2017

tblConstructionPhase	PhaseEndDate	11/1/2017	10/31/2017
tblConstructionPhase	PhaseEndDate	11/27/2018	11/28/2018
tblConstructionPhase	PhaseStartDate	6/17/2016	6/16/2016
tblConstructionPhase	PhaseStartDate	3/23/2017	3/22/2017
tblConstructionPhase	PhaseStartDate	3/21/2018	3/22/2018
tblGrading	AcresOfGrading	400.00	200.00
tblGrading	AcresOfGrading	100.00	0.00
tblLandUse	LandUseSquareFeet	5,580.00	5,575.00
tblLandUse	LotAcreage	0.13	100.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	8.00
tblOperationalOffRoadEquipment	OperHorsePower	84.00	500.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	24.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	14.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	6.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	4.00	6.00
tblTripsAndVMT	WorkerTripNumber	4.00	6.00
tblTripsAndVMT	WorkerTripNumber	4.00	20.00

tblTripsAndVMT	WorkerTripNumber		
		4.00	16.00
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00

tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleTrips	ST_TR	1.32	2.15
tblVehicleTrips	SU_TR	0.68	2.15
tblVehicleTrips	WD_TR	6.97	5.75
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	1,290,375.00	1,314,000,000.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2016	12.7828	144.8734	95.9798	0.1223	15.5350	6.8589	22.3940	7.1236	6.3102	13.4338	0.0000	12,569.56 72	12,569.56 72	3.6128	0.0000	12,645.43 65
2017	2.1155	20.9133	13.2713	0.0211	0.2664	1.2366	1.4325	0.0708	1.1376	1.1905	0.0000	2,108.307 4	2,108.307 4	0.5568	0.0000	2,119.999 4
2018	2.3148	22.8014	18.0964	0.0279	0.2653	1.3080	1.5600	0.0705	1.2034	1.2714	0.0000	2,735.780 4	2,735.780 4	0.7338	0.0000	2,751.190 8
2019	2.0760	20.3264	17.7349	0.0279	0.2519	1.1441	1.3960	0.0681	1.0526	1.1206	0.0000	2,686.770 3	2,686.770 3	0.7330	0.0000	2,702.162 7
Total	19.2891	208.9145	145.0824	0.1992	16.3187	10.5476	26.7824	7.3329	9.7038	17.0163	0.0000	20,100.42 52	20,100.42 52	5.6364	0.0000	20,218.78 93

2.2 Overall Operational

Unmitigated Operational

	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	lb/day										lb/day					
Area	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Energy	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Mobile	0.2915	2.3082	3.7776	0.0109	0.2898	0.0461	0.3359	0.0790	0.0425	0.1214		1,002.2634	1,002.2634	9.7000e-003		1,002.4671
Offroad	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	4.2020	37.8927	23.4815	0.1090	0.2898	1.1254	1.4152	0.0790	1.1217	1.2006		12,166.9854	12,166.9854	0.3433	7.2000e-004	12,174.4163

2.2 Overall Operational

Mitigated Operational

	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	lb/day										lb/day					
Area	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Energy	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Mobile	0.2915	2.3082	3.7776	0.0109	0.2898	0.0461	0.3359	0.0790	0.0425	0.1214		1,002.2634	1,002.2634	9.7000e-003		1,002.4671
Offroad	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	4.2020	37.8927	23.4815	0.1090	0.2898	1.1254	1.4152	0.0790	1.1217	1.2006		12,166.9854	12,166.9854	0.3433	7.2000e-004	12,174.4163

	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
Percent Reduction	87.59	93.82	83.79	89.84	0.00	95.68	76.09	0.00	95.99	89.68	0.00	91.44	91.44	96.95	0.00	91.44

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading & Site Work	Site Preparation	1/1/2016	2/25/2016	5	40	Grading & Site Work
2	Excavation	Grading	2/26/2016	6/16/2016	5	80	Excavation
3	Concrete Work	Building Construction	6/16/2016	3/22/2017	5	200	Concrete Work
4	Equipment Install	Building Construction	3/22/2017	10/31/2017	5	160	Equipment Install
5	Building Construction	Building Construction	11/1/2017	3/20/2018	5	100	Building Construction
6	Piping & Electrical	Building Construction	3/22/2018	11/28/2018	5	180	Piping & Electrical
7	Final Grading & Paving	Paving	11/29/2018	1/23/2019	5	40	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading & Site Work	Excavators	1	8.00	162	0.38
Grading & Site Work	Graders	1	8.00	174	0.41
Grading & Site Work	Rollers	2	8.00	80	0.38
Grading & Site Work	Rubber Tired Dozers	1	8.00	255	0.40
Grading & Site Work	Scrapers	2	8.00	361	0.48
Grading & Site Work	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Excavation	Cranes	0	7.00	226	0.29
Excavation	Excavators	2	8.00	162	0.38
Excavation	Forklifts	0	8.00	89	0.20
Excavation	Generator Sets	0	8.00	84	0.74
Excavation	Graders	2	8.00	174	0.41

Excavation	Rollers	2	8.00	80	0.38
Excavation	Rubber Tired Dozers	2	8.00	255	0.40
Excavation	Scrapers	4	8.00	361	0.48
Excavation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Excavation	Welders	0	8.00	46	0.45
Concrete Work	Cranes	0	7.00	226	0.29
Concrete Work	Forklifts	2	8.00	89	0.20
Concrete Work	Generator Sets	0	8.00	84	0.74
Concrete Work	Other Material Handling Equipment	1	8.00	167	0.40
Concrete Work	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Concrete Work	Welders	0	8.00	46	0.45
Equipment Install	Cranes	1	8.00	226	0.29
Equipment Install	Forklifts	2	8.00	89	0.20
Equipment Install	Generator Sets	0	8.00	84	0.74
Equipment Install	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Equipment Install	Welders	0	8.00	46	0.45
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Piping & Electrical	Cranes	0	7.00	226	0.29
Piping & Electrical	Forklifts	1	8.00	89	0.20
Piping & Electrical	Generator Sets	0	8.00	84	0.74
Piping & Electrical	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Piping & Electrical	Welders	0	8.00	46	0.45
Final Grading & Paving	Graders	1	8.00	174	0.41
Final Grading & Paving	Pavers	1	8.00	125	0.42

Final Grading & Paving	Paving Equipment	1	8.00	130	0.36
Final Grading & Paving	Rollers	2	8.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading & Site Work	8	20.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	12	30.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Work	3	6.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Equipment Install	3	6.00	1.00	4.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	1	20.00	1.00	14.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Piping & Electrical	2	16.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Final Grading & Paving	6	15.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading & Site Work - 2016

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	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	6.4243	73.3534	47.3234	0.0585		3.5740	3.5740		3.2881	3.2881		6,086.341 2	6,086.341 2	1.8359		6,124.894 2
Total	6.4243	73.3534	47.3234	0.0585	6.0221	3.5740	9.5961	3.3102	3.2881	6.5983		6,086.341 2	6,086.341 2	1.8359		6,124.894 2

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	lb/day										lb/day					
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
Vendor	0.0431	0.3579	0.4587	8.7000e-004	0.0241	6.4000e-003	0.0305	6.9000e-003	5.8800e-003	0.0128		86.8840	86.8840	7.5000e-004		86.8998
Worker	0.1021	0.1275	1.5719	3.5400e-003	0.2555	1.8900e-003	0.2574	0.0678	1.7300e-003	0.0695		290.6547	290.6547	0.0132		290.9318
Total	0.1452	0.4854	2.0306	4.4100e-003	0.2796	8.2900e-003	0.2879	0.0747	7.6100e-003	0.0823		377.5387	377.5387	0.0140		377.8316

3.2 Grading & Site Work - 2016

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	lb/day										lb/day					
Fugitive Dust					2.3486	0.0000	2.3486	1.2910	0.0000	1.2910			0.0000			0.0000
Off-Road	1.4353	28.4646	35.5516	0.0585		1.2861	1.2861		1.2861	1.2861	0.0000	6,086.341 2	6,086.341 2	1.8359		6,124.894 2
Total	1.4353	28.4646	35.5516	0.0585	2.3486	1.2861	3.6347	1.2910	1.2861	2.5771	0.0000	6,086.341 2	6,086.341 2	1.8359		6,124.894 2

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	lb/day										lb/day					
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
Vendor	0.0431	0.3579	0.4587	8.7000e-004	0.0241	6.4000e-003	0.0305	6.9000e-003	5.8800e-003	0.0128		86.8840	86.8840	7.5000e-004		86.8998
Worker	0.1021	0.1275	1.5719	3.5400e-003	0.2555	1.8900e-003	0.2574	0.0678	1.7300e-003	0.0695		290.6547	290.6547	0.0132		290.9318
Total	0.1452	0.4854	2.0306	4.4100e-003	0.2796	8.2900e-003	0.2879	0.0747	7.6100e-003	0.0823		377.5387	377.5387	0.0140		377.8316

3.3 Excavation - 2016

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	lb/day										lb/day					
Fugitive Dust					14.6954	0.0000	14.6954	6.9067	0.0000	6.9067			0.0000			0.0000
Off-Road	11.4939	133.9711	85.7945	0.1056		6.1884	6.1884		5.6933	5.6933		10,980.37 20	10,980.37 20	3.3121		11,049.92 55
Total	11.4939	133.9711	85.7945	0.1056	14.6954	6.1884	20.8838	6.9067	5.6933	12.6001		10,980.37 20	10,980.37 20	3.3121		11,049.92 55

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	lb/day										lb/day					
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
Vendor	0.0108	0.0895	0.1147	2.2000e-004	0.0104	1.6000e-003	0.0120	2.8000e-003	1.4700e-003	4.2700e-003		21.7210	21.7210	1.9000e-004		21.7249
Worker	0.1531	0.1913	2.3578	5.3100e-003	0.7164	2.8300e-003	0.7192	0.1834	2.5900e-003	0.1860		435.9820	435.9820	0.0198		436.3977
Total	0.1639	0.2807	2.4725	5.5300e-003	0.7268	4.4300e-003	0.7312	0.1862	4.0600e-003	0.1903		457.7030	457.7030	0.0200		458.1227

3.3 Excavation - 2016

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	lb/day										lb/day					
Fugitive Dust					5.7312	0.0000	5.7312	2.6936	0.0000	2.6936			0.0000			0.0000
Off-Road	2.5899	50.5223	62.4514	0.1056		2.1233	2.1233		2.1233	2.1233	0.0000	10,980.37 20	10,980.37 20	3.3121		11,049.92 55
Total	2.5899	50.5223	62.4514	0.1056	5.7312	2.1233	7.8545	2.6936	2.1233	4.8169	0.0000	10,980.37 20	10,980.37 20	3.3121		11,049.92 55

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	lb/day										lb/day					
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
Vendor	0.0108	0.0895	0.1147	2.2000e-004	0.0104	1.6000e-003	0.0120	2.8000e-003	1.4700e-003	4.2700e-003		21.7210	21.7210	1.9000e-004		21.7249
Worker	0.1531	0.1913	2.3578	5.3100e-003	0.7164	2.8300e-003	0.7192	0.1834	2.5900e-003	0.1860		435.9820	435.9820	0.0198		436.3977
Total	0.1639	0.2807	2.4725	5.5300e-003	0.7268	4.4300e-003	0.7312	0.1862	4.0600e-003	0.1903		457.7030	457.7030	0.0200		458.1227

3.4 Concrete Work - 2016**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	lb/day										lb/day					
Off-Road	1.0297	10.0466	6.5532	8.7900e-003		0.6559	0.6559		0.6035	0.6035		913.9697	913.9697	0.2757		919.7591
Total	1.0297	10.0466	6.5532	8.7900e-003		0.6559	0.6559		0.6035	0.6035		913.9697	913.9697	0.2757		919.7591

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	lb/day										lb/day					
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
Vendor	0.0647	0.5368	0.6881	1.3000e-003	0.0362	9.6000e-003	0.0458	0.0104	8.8300e-003	0.0192		130.3261	130.3261	1.1200e-003		130.3497
Worker	0.0306	0.0383	0.4716	1.0600e-003	0.0766	5.7000e-004	0.0772	0.0203	5.2000e-004	0.0208		87.1964	87.1964	3.9600e-003		87.2795
Total	0.0953	0.5750	1.1596	2.3600e-003	0.1128	0.0102	0.1230	0.0307	9.3500e-003	0.0400		217.5225	217.5225	5.0800e-003		217.6292

3.4 Concrete Work - 2016**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	lb/day										lb/day					
Off-Road	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	913.9697	913.9697	0.2757		919.7591
Total	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	913.9697	913.9697	0.2757		919.7591

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	lb/day										lb/day					
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
Vendor	0.0647	0.5368	0.6881	1.3000e-003	0.0362	9.6000e-003	0.0458	0.0104	8.8300e-003	0.0192		130.3261	130.3261	1.1200e-003		130.3497
Worker	0.0306	0.0383	0.4716	1.0600e-003	0.0766	5.7000e-004	0.0772	0.0203	5.2000e-004	0.0208		87.1964	87.1964	3.9600e-003		87.2795
Total	0.0953	0.5750	1.1596	2.3600e-003	0.1128	0.0102	0.1230	0.0307	9.3500e-003	0.0400		217.5225	217.5225	5.0800e-003		217.6292

3.4 Concrete Work - 2017

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	lb/day										lb/day					
Off-Road	0.9248	8.9405	6.4464	8.7900e-003		0.5816	0.5816		0.5351	0.5351		899.7629	899.7629	0.2757		905.5523
Total	0.9248	8.9405	6.4464	8.7900e-003		0.5816	0.5816		0.5351	0.5351		899.7629	899.7629	0.2757		905.5523

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	lb/day										lb/day					
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
Vendor	0.0573	0.4743	0.6305	1.3000e-003	0.0362	8.0700e-003	0.0443	0.0104	7.4200e-003	0.0178		128.1133	128.1133	1.0400e-003		128.1352
Worker	0.0268	0.0341	0.4150	1.0600e-003	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		83.7439	83.7439	3.6100e-003		83.8198
Total	0.0841	0.5084	1.0456	2.3600e-003	0.1128	8.6100e-003	0.1215	0.0307	7.9200e-003	0.0386		211.8572	211.8572	4.6500e-003		211.9550

3.4 Concrete Work - 2017

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	lb/day										lb/day					
Off-Road	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	899.7629	899.7629	0.2757		905.5523
Total	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	899.7629	899.7629	0.2757		905.5523

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	lb/day										lb/day					
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
Vendor	0.0573	0.4743	0.6305	1.3000e-003	0.0362	8.0700e-003	0.0443	0.0104	7.4200e-003	0.0178		128.1133	128.1133	1.0400e-003		128.1352
Worker	0.0268	0.0341	0.4150	1.0600e-003	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		83.7439	83.7439	3.6100e-003		83.8198
Total	0.0841	0.5084	1.0456	2.3600e-003	0.1128	8.6100e-003	0.1215	0.0307	7.9200e-003	0.0386		211.8572	211.8572	4.6500e-003		211.9550

3.5 Equipment Install - 2017

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	lb/day										lb/day					
Off-Road	1.0699	11.3458	5.2545	8.6900e-003		0.6443	0.6443		0.5928	0.5928		889.7475	889.7475	0.2726		895.4725
Total	1.0699	11.3458	5.2545	8.6900e-003		0.6443	0.6443		0.5928	0.5928		889.7475	889.7475	0.2726		895.4725

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	lb/day										lb/day					
Hauling	4.5000e-004	5.5400e-003	4.6600e-003	2.0000e-005	4.4000e-004	9.0000e-005	5.3000e-004	1.2000e-004	8.0000e-005	2.0000e-004		1.8436	1.8436	1.0000e-005		1.8438
Vendor	9.5400e-003	0.0791	0.1051	2.2000e-004	6.0300e-003	1.3400e-003	7.3800e-003	1.7200e-003	1.2400e-003	2.9600e-003		21.3522	21.3522	1.7000e-004		21.3559
Worker	0.0268	0.0341	0.4150	1.0600e-003	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		83.7439	83.7439	3.6100e-003		83.8198
Total	0.0368	0.1187	0.5248	1.3000e-003	0.0831	1.9700e-003	0.0851	0.0222	1.8200e-003	0.0240		106.9397	106.9397	3.7900e-003		107.0195

3.5 Equipment Install - 2017

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	lb/day										lb/day					
Off-Road	0.2141	4.4021	5.3286	8.6900e-003		0.2223	0.2223		0.2223	0.2223	0.0000	889.7475	889.7475	0.2726		895.4725
Total	0.2141	4.4021	5.3286	8.6900e-003		0.2223	0.2223		0.2223	0.2223	0.0000	889.7475	889.7475	0.2726		895.4725

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	lb/day										lb/day					
Hauling	4.5000e-004	5.5400e-003	4.6600e-003	2.0000e-005	4.4000e-004	9.0000e-005	5.3000e-004	1.2000e-004	8.0000e-005	2.0000e-004		1.8436	1.8436	1.0000e-005		1.8438
Vendor	9.5400e-003	0.0791	0.1051	2.2000e-004	6.0300e-003	1.3400e-003	7.3800e-003	1.7200e-003	1.2400e-003	2.9600e-003		21.3522	21.3522	1.7000e-004		21.3559
Worker	0.0268	0.0341	0.4150	1.0600e-003	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		83.7439	83.7439	3.6100e-003		83.8198
Total	0.0368	0.1187	0.5248	1.3000e-003	0.0831	1.9700e-003	0.0851	0.0222	1.8200e-003	0.0240		106.9397	106.9397	3.7900e-003		107.0195

3.6 Building Construction - 2017

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	lb/day										lb/day					
Off-Road	0.2109	1.8264	1.2491	1.5300e-003		0.1507	0.1507		0.1386	0.1386		156.2548	156.2548	0.0479		157.2602
Total	0.2109	1.8264	1.2491	1.5300e-003		0.1507	0.1507		0.1386	0.1386		156.2548	156.2548	0.0479		157.2602

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	lb/day										lb/day					
Hauling	2.5100e-003	0.0310	0.0261	1.0000e-004	4.9100e-003	5.0000e-004	5.4100e-003	1.2800e-003	4.6000e-004	1.7400e-003		10.3240	10.3240	7.0000e-005		10.3255
Vendor	9.5400e-003	0.0791	0.1051	2.2000e-004	6.0300e-003	1.3400e-003	7.3800e-003	1.7200e-003	1.2400e-003	2.9600e-003		21.3522	21.3522	1.7000e-004		21.3559
Worker	0.0893	0.1135	1.3835	3.5400e-003	0.2555	1.8100e-003	0.2573	0.0678	1.6700e-003	0.0694		279.1463	279.1463	0.0121		279.3993
Total	0.1013	0.2236	1.5147	3.8600e-003	0.2664	3.6500e-003	0.2701	0.0708	3.3700e-003	0.0741		310.8225	310.8225	0.0123		311.0807

3.6 Building Construction - 2017

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	lb/day										lb/day					
Off-Road	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	156.2548	156.2548	0.0479		157.2602
Total	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	156.2548	156.2548	0.0479		157.2602

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	lb/day										lb/day					
Hauling	2.5100e-003	0.0310	0.0261	1.0000e-004	4.9100e-003	5.0000e-004	5.4100e-003	1.2800e-003	4.6000e-004	1.7400e-003		10.3240	10.3240	7.0000e-005		10.3255
Vendor	9.5400e-003	0.0791	0.1051	2.2000e-004	6.0300e-003	1.3400e-003	7.3800e-003	1.7200e-003	1.2400e-003	2.9600e-003		21.3522	21.3522	1.7000e-004		21.3559
Worker	0.0893	0.1135	1.3835	3.5400e-003	0.2555	1.8100e-003	0.2573	0.0678	1.6700e-003	0.0694		279.1463	279.1463	0.0121		279.3993
Total	0.1013	0.2236	1.5147	3.8600e-003	0.2664	3.6500e-003	0.2701	0.0708	3.3700e-003	0.0741		310.8225	310.8225	0.0123		311.0807

3.6 Building Construction - 2018

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	lb/day										lb/day					
Off-Road	0.1781	1.5745	1.2112	1.5300e-003		0.1257	0.1257		0.1156	0.1156		153.7876	153.7876	0.0479		154.7930
Total	0.1781	1.5745	1.2112	1.5300e-003		0.1257	0.1257		0.1156	0.1156		153.7876	153.7876	0.0479		154.7930

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	lb/day										lb/day					
Hauling	2.4400e-003	0.0277	0.0253	1.0000e-004	3.8500e-003	4.9000e-004	4.3400e-003	1.0200e-003	4.5000e-004	1.4700e-003		10.1434	10.1434	7.0000e-005		10.1449
Vendor	8.8300e-003	0.0711	0.0991	2.2000e-004	6.0300e-003	1.2300e-003	7.2700e-003	1.7200e-003	1.1300e-003	2.8600e-003		20.9799	20.9799	1.7000e-004		20.9834
Worker	0.0784	0.1016	1.2252	3.5300e-003	0.2555	1.7700e-003	0.2572	0.0678	1.6300e-003	0.0694		267.8060	267.8060	0.0111		268.0382
Total	0.0896	0.2003	1.3496	3.8500e-003	0.2653	3.4900e-003	0.2688	0.0705	3.2100e-003	0.0737		298.9292	298.9292	0.0113		299.1666

3.6 Building Construction - 2018

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	lb/day										lb/day					
Off-Road	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	153.7876	153.7876	0.0479		154.7930
Total	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	153.7876	153.7876	0.0479		154.7930

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	lb/day										lb/day					
Hauling	2.4400e-003	0.0277	0.0253	1.0000e-004	3.8500e-003	4.9000e-004	4.3400e-003	1.0200e-003	4.5000e-004	1.4700e-003		10.1434	10.1434	7.0000e-005		10.1449
Vendor	8.8300e-003	0.0711	0.0991	2.2000e-004	6.0300e-003	1.2300e-003	7.2700e-003	1.7200e-003	1.1300e-003	2.8600e-003		20.9799	20.9799	1.7000e-004		20.9834
Worker	0.0784	0.1016	1.2252	3.5300e-003	0.2555	1.7700e-003	0.2572	0.0678	1.6300e-003	0.0694		267.8060	267.8060	0.0111		268.0382
Total	0.0896	0.2003	1.3496	3.8500e-003	0.2653	3.4900e-003	0.2688	0.0705	3.2100e-003	0.0737		298.9292	298.9292	0.0113		299.1666

3.7 Piping & Electrical - 2018

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	lb/day										lb/day					
Off-Road	0.4110	3.8755	3.2559	4.2500e-003		0.2887	0.2887		0.2656	0.2656		427.4666	427.4666	0.1331		430.2612
Total	0.4110	3.8755	3.2559	4.2500e-003		0.2887	0.2887		0.2656	0.2656		427.4666	427.4666	0.1331		430.2612

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	lb/day										lb/day					
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
Vendor	8.8300e-003	0.0711	0.0991	2.2000e-004	6.0300e-003	1.2300e-003	7.2700e-003	1.7200e-003	1.1300e-003	2.8600e-003		20.9799	20.9799	1.7000e-004		20.9834
Worker	0.0627	0.0812	0.9802	2.8200e-003	0.2044	1.4100e-003	0.2058	0.0542	1.3100e-003	0.0555		214.2448	214.2448	8.8500e-003		214.4306
Total	0.0715	0.1523	1.0792	3.0400e-003	0.2104	2.6400e-003	0.2131	0.0559	2.4400e-003	0.0584		235.2246	235.2246	9.0200e-003		235.4140

3.7 Piping & Electrical - 2018

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	lb/day										lb/day					
Off-Road	0.1041	2.3778	3.2109	4.2500e-003		0.1666	0.1666		0.1666	0.1666	0.0000	427.4666	427.4666	0.1331		430.2612
Total	0.1041	2.3778	3.2109	4.2500e-003		0.1666	0.1666		0.1666	0.1666	0.0000	427.4666	427.4666	0.1331		430.2612

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	lb/day										lb/day					
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
Vendor	8.8300e-003	0.0711	0.0991	2.2000e-004	6.0300e-003	1.2300e-003	7.2700e-003	1.7200e-003	1.1300e-003	2.8600e-003		20.9799	20.9799	1.7000e-004		20.9834
Worker	0.0627	0.0812	0.9802	2.8200e-003	0.2044	1.4100e-003	0.2058	0.0542	1.3100e-003	0.0555		214.2448	214.2448	8.8500e-003		214.4306
Total	0.0715	0.1523	1.0792	3.0400e-003	0.2104	2.6400e-003	0.2131	0.0559	2.4400e-003	0.0584		235.2246	235.2246	9.0200e-003		235.4140

3.8 Final Grading & Paving - 2018

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	lb/day										lb/day					
Off-Road	2.1619	22.0147	16.1869	0.0231		1.2944	1.2944		1.1908	1.1908		2,325.1274	2,325.1274	0.7238		2,340.3282
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.1678	22.0147	16.1869	0.0231		1.2944	1.2944		1.1908	1.1908		2,325.1274	2,325.1274	0.7238		2,340.3282

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	lb/day										lb/day					
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
Vendor	0.0883	0.7106	0.9907	2.1600e-003	0.0603	0.0123	0.0727	0.0172	0.0113	0.0286		209.7985	209.7985	1.6900e-003		209.8339
Worker	0.0588	0.0762	0.9189	2.6400e-003	0.1916	1.3200e-003	0.1929	0.0508	1.2200e-003	0.0520		200.8545	200.8545	8.3000e-003		201.0287
Total	0.1470	0.7868	1.9096	4.8000e-003	0.2519	0.0136	0.2656	0.0681	0.0126	0.0806		410.6529	410.6529	9.9900e-003		410.8626

3.8 Final Grading & Paving - 2018

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	lb/day										lb/day					
Off-Road	0.5658	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,325.127 4	2,325.127 4	0.7238		2,340.328 2
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.5717	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,325.127 4	2,325.127 4	0.7238		2,340.328 2

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	lb/day										lb/day					
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
Vendor	0.0883	0.7106	0.9907	2.1600e-003	0.0603	0.0123	0.0727	0.0172	0.0113	0.0286		209.7985	209.7985	1.6900e-003		209.8339
Worker	0.0588	0.0762	0.9189	2.6400e-003	0.1916	1.3200e-003	0.1929	0.0508	1.2200e-003	0.0520		200.8545	200.8545	8.3000e-003		201.0287
Total	0.1470	0.7868	1.9096	4.8000e-003	0.2519	0.0136	0.2656	0.0681	0.0126	0.0806		410.6529	410.6529	9.9900e-003		410.8626

3.8 Final Grading & Paving - 2019

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	lb/day										lb/day					
Off-Road	1.9383	19.6123	15.9924	0.0231		1.1315	1.1315		1.0410	1.0410		2,287.0356	2,287.0356	0.7236		2,302.2311
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9442	19.6123	15.9924	0.0231		1.1315	1.1315		1.0410	1.0410		2,287.0356	2,287.0356	0.7236		2,302.2311

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	lb/day										lb/day					
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
Vendor	0.0787	0.6447	0.9088	2.1500e-003	0.0603	0.0113	0.0717	0.0173	0.0104	0.0277		206.1737	206.1737	1.6300e-003		206.2080
Worker	0.0532	0.0694	0.8337	2.6400e-003	0.1916	1.3100e-003	0.1929	0.0508	1.2100e-003	0.0520		193.5610	193.5610	7.7500e-003		193.7236
Total	0.1318	0.7141	1.7425	4.7900e-003	0.2519	0.0126	0.2646	0.0681	0.0116	0.0797		399.7347	399.7347	9.3800e-003		399.9316

3.8 Final Grading & Paving - 2019

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	lb/day										lb/day					
Off-Road	0.5658	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,287.0356	2,287.0356	0.7236		2,302.2311
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.5717	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,287.0356	2,287.0356	0.7236		2,302.2311

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	lb/day										lb/day					
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
Vendor	0.0787	0.6447	0.9088	2.1500e-003	0.0603	0.0113	0.0717	0.0173	0.0104	0.0277		206.1737	206.1737	1.6300e-003		206.2080
Worker	0.0532	0.0694	0.8337	2.6400e-003	0.1916	1.3100e-003	0.1929	0.0508	1.2100e-003	0.0520		193.5610	193.5610	7.7500e-003		193.7236
Total	0.1318	0.7141	1.7425	4.7900e-003	0.2519	0.0126	0.2646	0.0681	0.0116	0.0797		399.7347	399.7347	9.3800e-003		399.9316

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	0.2915	2.3082	3.7776	0.0109	0.2898	0.0461	0.3359	0.0790	0.0425	0.1214		1,002.2634	1,002.2634	9.7000e-003		1,002.4671
Unmitigated	0.2915	2.3082	3.7776	0.0109	0.2898	0.0461	0.3359	0.0790	0.0425	0.1214		1,002.2634	1,002.2634	9.7000e-003		1,002.4671

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	32.09	12.00	12.00	101,785	101,785
Parking Lot	0.00	0.00	0.00		
Total	32.09	12.00	12.00	101,785	101,785

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.070000	0.070000	0.070000	0.000000	0.000000	0.000000	0.000000	0.790000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
NaturalGas Unmitigated	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	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
General Light Industry	332.362	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Total		3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.332362	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Parking Lot	0	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		3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Unmitigated	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2049					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Total	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003

Mitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2049					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Total	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	1	24.00	8	500	0.74	Diesel

UnMitigated/Mitigated

	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
Equipment Type	lb/day										lb/day					
Generator Sets	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063

10.0 Vegetation

Ridgecrest WWTP
Kern-San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.58	1000sqft	100.00	5,575.00	0
Parking Lot	10.00	Space	0.09	4,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	32
Climate Zone	3			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 5575sf building area, 10 space parking lot, 100 acres total area.

Construction Phase - Grading 40 days, Excavation 80 days, Concrete 200 days, Install 160 days, Bldg Const 100 days, Piping & Elec 180 days, Paving 40 days, Startup 60 days.

Off-road Equipment - Forklift 1

Off-road Equipment - Forklifts 2, Other Material Handling 1

Off-road Equipment - Crane 1, Forklift 2

Off-road Equipment - Exc 2, Graders 2, Dozers 2, Scrapers 4, Rollers 2

Off-road Equipment - Paver 1, Paving Equipment 1, Roller 2, Grader 1, Tractor 1

Off-road Equipment - 1 dozer, 1 tractor, 2 scrapers, 1 grader, 1 excavator, 2 roller/compactors; 8 hours daily

Off-road Equipment - Backhoe 1, Forklift 1

Trips and VMT - Worker/vendor trips based on model defaults/project info. (Worker/Vendor/HDT):Grading=20/4/0, Exc=30/1/0, Conc=6/6/0, Install=6/1/4, Bldg=20/1/14, Piping=16/1/0, Final=15/10/0.

Grading - No import/export of fill. All material balanced on site.

Vehicle Trips - Assumes 5.75 trips/day/sf weekday, 2.15 trips/day/sf weekend, Weekend excludes trucks.

Vehicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vehicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vehicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Water And Wastewater - Includes 3.6 MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Watering efficiency rates of 50% for unpaved roads 61% for exposed areas, 15 mph speed limit for onsite vehicle travel. T3 offroad equipment included in mitigation calc.

Operational Off-Road Equipment - Assumes 1 500hp genset operating 24 hours/day. Max limit of ~200 hours annually.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	8543	8363
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	3,100.00	200.00
tblConstructionPhase	NumDays	3,100.00	160.00
tblConstructionPhase	NumDays	3,100.00	100.00
tblConstructionPhase	NumDays	3,100.00	180.00
tblConstructionPhase	NumDays	310.00	80.00
tblConstructionPhase	NumDays	220.00	40.00
tblConstructionPhase	NumDays	120.00	40.00
tblConstructionPhase	PhaseEndDate	3/23/2017	3/22/2017

tblConstructionPhase	PhaseEndDate	11/1/2017	10/31/2017
tblConstructionPhase	PhaseEndDate	11/27/2018	11/28/2018
tblConstructionPhase	PhaseStartDate	6/17/2016	6/16/2016
tblConstructionPhase	PhaseStartDate	3/23/2017	3/22/2017
tblConstructionPhase	PhaseStartDate	3/21/2018	3/22/2018
tblGrading	AcresOfGrading	400.00	200.00
tblGrading	AcresOfGrading	100.00	0.00
tblLandUse	LandUseSquareFeet	5,580.00	5,575.00
tblLandUse	LotAcreage	0.13	100.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	8.00
tblOperationalOffRoadEquipment	OperHorsePower	84.00	500.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	24.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	14.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	6.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	4.00	6.00
tblTripsAndVMT	WorkerTripNumber	4.00	6.00
tblTripsAndVMT	WorkerTripNumber	4.00	20.00

tblTripsAndVMT	WorkerTripNumber		
tblTripsAndVMT	WorkerTripNumber	4.00	16.00
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00

tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleTrips	ST_TR	1.32	2.15
tblVehicleTrips	SU_TR	0.68	2.15
tblVehicleTrips	WD_TR	6.97	5.75
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	1,290,375.00	1,314,000,000.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)**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	lb/day										lb/day					
2016	12.7723	144.9487	95.9861	0.1214	15.5350	6.8591	22.3941	7.1236	6.3104	13.4339	0.0000	12,499.03 36	12,499.03 36	3.6129	0.0000	12,574.90 37
2017	2.1223	20.9565	13.5991	0.0209	0.2664	1.2367	1.4326	0.0708	1.1378	1.1906	0.0000	2,084.843 1	2,084.843 1	0.5568	0.0000	2,096.535 9
2018	2.3243	22.8536	18.5704	0.0275	0.2653	1.3082	1.5601	0.0705	1.2036	1.2716	0.0000	2,707.354 2	2,707.354 2	0.7339	0.0000	2,722.765 7
2019	2.0832	20.3730	18.2091	0.0275	0.2519	1.1443	1.3962	0.0681	1.0527	1.1208	0.0000	2,659.312 9	2,659.312 9	0.7330	0.0000	2,674.706 4
Total	19.3022	209.1317	146.3648	0.1974	16.3187	10.5483	26.7831	7.3329	9.7044	17.0169	0.0000	19,950.54 39	19,950.54 39	5.6366	0.0000	20,068.91 17

2.2 Overall Operational

Unmitigated Operational

	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	lb/day										lb/day					
Area	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Energy	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Mobile	0.3409	2.4591	6.2444	0.0108	0.2898	0.0464	0.3362	0.0790	0.0427	0.1216		990.8265	990.8265	9.9100e-003		991.0345
Offroad	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	4.2514	38.0437	25.9483	0.1089	0.2898	1.1256	1.4154	0.0790	1.1219	1.2009		12,155.5486	12,155.5486	0.3435	7.2000e-004	12,162.9838

2.2 Overall Operational

Mitigated Operational

	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	lb/day										lb/day					
Area	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Energy	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Mobile	0.3409	2.4591	6.2444	0.0108	0.2898	0.0464	0.3362	0.0790	0.0427	0.1216		990.8265	990.8265	9.9100e-003		991.0345
Offroad	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	4.2514	38.0437	25.9483	0.1089	0.2898	1.1256	1.4154	0.0790	1.1219	1.2009		12,155.5486	12,155.5486	0.3435	7.2000e-004	12,162.9838

	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
Percent Reduction	86.57	93.45	75.82	89.93	0.00	95.66	76.07	0.00	95.98	89.66	0.00	91.53	91.53	96.89	0.00	91.53

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading & Site Work	Site Preparation	1/1/2016	2/25/2016	5	40	Grading & Site Work
2	Excavation	Grading	2/26/2016	6/16/2016	5	80	Excavation
3	Concrete Work	Building Construction	6/16/2016	3/22/2017	5	200	Concrete Work
4	Equipment Install	Building Construction	3/22/2017	10/31/2017	5	160	Equipment Install
5	Building Construction	Building Construction	11/1/2017	3/20/2018	5	100	Building Construction
6	Piping & Electrical	Building Construction	3/22/2018	11/28/2018	5	180	Piping & Electrical
7	Final Grading & Paving	Paving	11/29/2018	1/23/2019	5	40	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading & Site Work	Excavators	1	8.00	162	0.38
Grading & Site Work	Graders	1	8.00	174	0.41
Grading & Site Work	Rollers	2	8.00	80	0.38
Grading & Site Work	Rubber Tired Dozers	1	8.00	255	0.40
Grading & Site Work	Scrapers	2	8.00	361	0.48
Grading & Site Work	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Excavation	Cranes	0	7.00	226	0.29
Excavation	Excavators	2	8.00	162	0.38
Excavation	Forklifts	0	8.00	89	0.20
Excavation	Generator Sets	0	8.00	84	0.74
Excavation	Graders	2	8.00	174	0.41

Excavation	Rollers	2	8.00	80	0.38
Excavation	Rubber Tired Dozers	2	8.00	255	0.40
Excavation	Scrapers	4	8.00	361	0.48
Excavation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Excavation	Welders	0	8.00	46	0.45
Concrete Work	Cranes	0	7.00	226	0.29
Concrete Work	Forklifts	2	8.00	89	0.20
Concrete Work	Generator Sets	0	8.00	84	0.74
Concrete Work	Other Material Handling Equipment	1	8.00	167	0.40
Concrete Work	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Concrete Work	Welders	0	8.00	46	0.45
Equipment Install	Cranes	1	8.00	226	0.29
Equipment Install	Forklifts	2	8.00	89	0.20
Equipment Install	Generator Sets	0	8.00	84	0.74
Equipment Install	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Equipment Install	Welders	0	8.00	46	0.45
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Piping & Electrical	Cranes	0	7.00	226	0.29
Piping & Electrical	Forklifts	1	8.00	89	0.20
Piping & Electrical	Generator Sets	0	8.00	84	0.74
Piping & Electrical	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Piping & Electrical	Welders	0	8.00	46	0.45
Final Grading & Paving	Graders	1	8.00	174	0.41
Final Grading & Paving	Pavers	1	8.00	125	0.42

Final Grading & Paving	Paving Equipment	1	8.00	130	0.36
Final Grading & Paving	Rollers	2	8.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

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
Grading & Site Work	8	20.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	12	30.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Work	3	6.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Equipment Install	3	6.00	1.00	4.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	1	20.00	1.00	14.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Piping & Electrical	2	16.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Final Grading & Paving	6	15.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading & Site Work - 2016

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	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	6.4243	73.3534	47.3234	0.0585		3.5740	3.5740		3.2881	3.2881		6,086.341 2	6,086.341 2	1.8359		6,124.894 2
Total	6.4243	73.3534	47.3234	0.0585	6.0221	3.5740	9.5961	3.3102	3.2881	6.5983		6,086.341 2	6,086.341 2	1.8359		6,124.894 2

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	lb/day										lb/day					
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
Vendor	0.0536	0.3784	0.7386	8.6000e-004	0.0241	6.5000e-003	0.0306	6.9000e-003	5.9700e-003	0.0129		86.1579	86.1579	7.7000e-004		86.1741
Worker	0.0861	0.1493	1.3033	3.0600e-003	0.2555	1.8900e-003	0.2574	0.0678	1.7300e-003	0.0695		252.1753	252.1753	0.0132		252.4525
Total	0.1397	0.5277	2.0419	3.9200e-003	0.2796	8.3900e-003	0.2880	0.0747	7.7000e-003	0.0823		338.3332	338.3332	0.0140		338.6266

3.2 Grading & Site Work - 2016

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	lb/day										lb/day					
Fugitive Dust					2.3486	0.0000	2.3486	1.2910	0.0000	1.2910			0.0000			0.0000
Off-Road	1.4353	28.4646	35.5516	0.0585		1.2861	1.2861		1.2861	1.2861	0.0000	6,086.341 2	6,086.341 2	1.8359		6,124.894 2
Total	1.4353	28.4646	35.5516	0.0585	2.3486	1.2861	3.6347	1.2910	1.2861	2.5771	0.0000	6,086.341 2	6,086.341 2	1.8359		6,124.894 2

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	lb/day										lb/day					
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
Vendor	0.0536	0.3784	0.7386	8.6000e-004	0.0241	6.5000e-003	0.0306	6.9000e-003	5.9700e-003	0.0129		86.1579	86.1579	7.7000e-004		86.1741
Worker	0.0861	0.1493	1.3033	3.0600e-003	0.2555	1.8900e-003	0.2574	0.0678	1.7300e-003	0.0695		252.1753	252.1753	0.0132		252.4525
Total	0.1397	0.5277	2.0419	3.9200e-003	0.2796	8.3900e-003	0.2880	0.0747	7.7000e-003	0.0823		338.3332	338.3332	0.0140		338.6266

3.3 Excavation - 2016

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	lb/day										lb/day					
Fugitive Dust					14.6954	0.0000	14.6954	6.9067	0.0000	6.9067			0.0000			0.0000
Off-Road	11.4939	133.9711	85.7945	0.1056		6.1884	6.1884		5.6933	5.6933		10,980.37 20	10,980.37 20	3.3121		11,049.92 55
Total	11.4939	133.9711	85.7945	0.1056	14.6954	6.1884	20.8838	6.9067	5.6933	12.6001		10,980.37 20	10,980.37 20	3.3121		11,049.92 55

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	lb/day										lb/day					
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
Vendor	0.0134	0.0946	0.1846	2.2000e-004	0.0104	1.6200e-003	0.0120	2.8000e-003	1.4900e-003	4.2900e-003		21.5395	21.5395	1.9000e-004		21.5435
Worker	0.1292	0.2240	1.9550	4.6000e-003	0.7164	2.8300e-003	0.7192	0.1834	2.5900e-003	0.1860		378.2630	378.2630	0.0198		378.6787
Total	0.1426	0.3186	2.1396	4.8200e-003	0.7268	4.4500e-003	0.7312	0.1862	4.0800e-003	0.1903		399.8025	399.8025	0.0200		400.2223

3.3 Excavation - 2016

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	lb/day										lb/day					
Fugitive Dust					5.7312	0.0000	5.7312	2.6936	0.0000	2.6936			0.0000			0.0000
Off-Road	2.5899	50.5223	62.4514	0.1056		2.1233	2.1233		2.1233	2.1233	0.0000	10,980.37 20	10,980.37 20	3.3121		11,049.92 55
Total	2.5899	50.5223	62.4514	0.1056	5.7312	2.1233	7.8545	2.6936	2.1233	4.8169	0.0000	10,980.37 20	10,980.37 20	3.3121		11,049.92 55

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	lb/day										lb/day					
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
Vendor	0.0134	0.0946	0.1846	2.2000e-004	0.0104	1.6200e-003	0.0120	2.8000e-003	1.4900e-003	4.2900e-003		21.5395	21.5395	1.9000e-004		21.5435
Worker	0.1292	0.2240	1.9550	4.6000e-003	0.7164	2.8300e-003	0.7192	0.1834	2.5900e-003	0.1860		378.2630	378.2630	0.0198		378.6787
Total	0.1426	0.3186	2.1396	4.8200e-003	0.7268	4.4500e-003	0.7312	0.1862	4.0800e-003	0.1903		399.8025	399.8025	0.0200		400.2223

3.4 Concrete Work - 2016

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	lb/day										lb/day					
Off-Road	1.0297	10.0466	6.5532	8.7900e-003		0.6559	0.6559		0.6035	0.6035		913.9697	913.9697	0.2757		919.7591
Total	1.0297	10.0466	6.5532	8.7900e-003		0.6559	0.6559		0.6035	0.6035		913.9697	913.9697	0.2757		919.7591

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	lb/day										lb/day					
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
Vendor	0.0803	0.5676	1.1078	1.3000e-003	0.0362	9.7500e-003	0.0459	0.0104	8.9600e-003	0.0193		129.2368	129.2368	1.1600e-003		129.2611
Worker	0.0258	0.0448	0.3910	9.2000e-004	0.0766	5.7000e-004	0.0772	0.0203	5.2000e-004	0.0208		75.6526	75.6526	3.9600e-003		75.7358
Total	0.1062	0.6124	1.4988	2.2200e-003	0.1128	0.0103	0.1231	0.0307	9.4800e-003	0.0402		204.8894	204.8894	5.1200e-003		204.9968

3.4 Concrete Work - 2016

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	lb/day										lb/day					
Off-Road	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	913.9697	913.9697	0.2757		919.7591
Total	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	913.9697	913.9697	0.2757		919.7591

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	lb/day										lb/day					
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
Vendor	0.0803	0.5676	1.1078	1.3000e-003	0.0362	9.7500e-003	0.0459	0.0104	8.9600e-003	0.0193		129.2368	129.2368	1.1600e-003		129.2611
Worker	0.0258	0.0448	0.3910	9.2000e-004	0.0766	5.7000e-004	0.0772	0.0203	5.2000e-004	0.0208		75.6526	75.6526	3.9600e-003		75.7358
Total	0.1062	0.6124	1.4988	2.2200e-003	0.1128	0.0103	0.1231	0.0307	9.4800e-003	0.0402		204.8894	204.8894	5.1200e-003		204.9968

3.4 Concrete Work - 2017

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	lb/day										lb/day					
Off-Road	0.9248	8.9405	6.4464	8.7900e-003		0.5816	0.5816		0.5351	0.5351		899.7629	899.7629	0.2757		905.5523
Total	0.9248	8.9405	6.4464	8.7900e-003		0.5816	0.5816		0.5351	0.5351		899.7629	899.7629	0.2757		905.5523

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	lb/day										lb/day					
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
Vendor	0.0708	0.5012	1.0367	1.2900e-003	0.0362	8.1800e-003	0.0444	0.0104	7.5300e-003	0.0179		127.0374	127.0374	1.0700e-003		127.0599
Worker	0.0223	0.0398	0.3407	9.2000e-004	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		72.6416	72.6416	3.6100e-003		72.7175
Total	0.0930	0.5410	1.3774	2.2100e-003	0.1128	8.7200e-003	0.1216	0.0307	8.0300e-003	0.0387		199.6790	199.6790	4.6800e-003		199.7774

3.4 Concrete Work - 2017

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	lb/day										lb/day					
Off-Road	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	899.7629	899.7629	0.2757		905.5523
Total	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	899.7629	899.7629	0.2757		905.5523

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	lb/day										lb/day					
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
Vendor	0.0708	0.5012	1.0367	1.2900e-003	0.0362	8.1800e-003	0.0444	0.0104	7.5300e-003	0.0179		127.0374	127.0374	1.0700e-003		127.0599
Worker	0.0223	0.0398	0.3407	9.2000e-004	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		72.6416	72.6416	3.6100e-003		72.7175
Total	0.0930	0.5410	1.3774	2.2100e-003	0.1128	8.7200e-003	0.1216	0.0307	8.0300e-003	0.0387		199.6790	199.6790	4.6800e-003		199.7774

3.5 Equipment Install - 2017

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	lb/day										lb/day					
Off-Road	1.0699	11.3458	5.2545	8.6900e-003		0.6443	0.6443		0.5928	0.5928		889.7475	889.7475	0.2726		895.4725
Total	1.0699	11.3458	5.2545	8.6900e-003		0.6443	0.6443		0.5928	0.5928		889.7475	889.7475	0.2726		895.4725

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	lb/day										lb/day					
Hauling	5.3000e-004	5.9200e-003	7.2800e-003	2.0000e-005	4.4000e-004	9.0000e-005	5.3000e-004	1.2000e-004	8.0000e-005	2.0000e-004		1.8392	1.8392	1.0000e-005		1.8395
Vendor	0.0118	0.0835	0.1728	2.2000e-004	6.0300e-003	1.3600e-003	7.4000e-003	1.7200e-003	1.2500e-003	2.9800e-003		21.1729	21.1729	1.8000e-004		21.1767
Worker	0.0223	0.0398	0.3407	9.2000e-004	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		72.6416	72.6416	3.6100e-003		72.7175
Total	0.0346	0.1293	0.5208	1.1600e-003	0.0831	1.9900e-003	0.0851	0.0222	1.8300e-003	0.0240		95.6537	95.6537	3.8000e-003		95.7336

3.5 Equipment Install - 2017

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	lb/day										lb/day					
Off-Road	0.2141	4.4021	5.3286	8.6900e-003		0.2223	0.2223		0.2223	0.2223	0.0000	889.7475	889.7475	0.2726		895.4725
Total	0.2141	4.4021	5.3286	8.6900e-003		0.2223	0.2223		0.2223	0.2223	0.0000	889.7475	889.7475	0.2726		895.4725

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	lb/day										lb/day					
Hauling	5.3000e-004	5.9200e-003	7.2800e-003	2.0000e-005	4.4000e-004	9.0000e-005	5.3000e-004	1.2000e-004	8.0000e-005	2.0000e-004		1.8392	1.8392	1.0000e-005		1.8395
Vendor	0.0118	0.0835	0.1728	2.2000e-004	6.0300e-003	1.3600e-003	7.4000e-003	1.7200e-003	1.2500e-003	2.9800e-003		21.1729	21.1729	1.8000e-004		21.1767
Worker	0.0223	0.0398	0.3407	9.2000e-004	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		72.6416	72.6416	3.6100e-003		72.7175
Total	0.0346	0.1293	0.5208	1.1600e-003	0.0831	1.9900e-003	0.0851	0.0222	1.8300e-003	0.0240		95.6537	95.6537	3.8000e-003		95.7336

3.6 Building Construction - 2017**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	lb/day										lb/day					
Off-Road	0.2109	1.8264	1.2491	1.5300e-003		0.1507	0.1507		0.1386	0.1386		156.2548	156.2548	0.0479		157.2602
Total	0.2109	1.8264	1.2491	1.5300e-003		0.1507	0.1507		0.1386	0.1386		156.2548	156.2548	0.0479		157.2602

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	lb/day										lb/day					
Hauling	2.9500e-003	0.0332	0.0408	1.0000e-004	4.9100e-003	5.0000e-004	5.4100e-003	1.2800e-003	4.6000e-004	1.7400e-003		10.2996	10.2996	7.0000e-005		10.3012
Vendor	0.0118	0.0835	0.1728	2.2000e-004	6.0300e-003	1.3600e-003	7.4000e-003	1.7200e-003	1.2500e-003	2.9800e-003		21.1729	21.1729	1.8000e-004		21.1767
Worker	0.0743	0.1327	1.1357	3.0600e-003	0.2555	1.8100e-003	0.2573	0.0678	1.6700e-003	0.0694		242.1386	242.1386	0.0121		242.3916
Total	0.0890	0.2494	1.3493	3.3800e-003	0.2664	3.6700e-003	0.2701	0.0708	3.3800e-003	0.0741		273.6111	273.6111	0.0123		273.8695

3.6 Building Construction - 2017

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	lb/day										lb/day					
Off-Road	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	156.2548	156.2548	0.0479		157.2602
Total	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	156.2548	156.2548	0.0479		157.2602

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	lb/day										lb/day					
Hauling	2.9500e-003	0.0332	0.0408	1.0000e-004	4.9100e-003	5.0000e-004	5.4100e-003	1.2800e-003	4.6000e-004	1.7400e-003		10.2996	10.2996	7.0000e-005		10.3012
Vendor	0.0118	0.0835	0.1728	2.2000e-004	6.0300e-003	1.3600e-003	7.4000e-003	1.7200e-003	1.2500e-003	2.9800e-003		21.1729	21.1729	1.8000e-004		21.1767
Worker	0.0743	0.1327	1.1357	3.0600e-003	0.2555	1.8100e-003	0.2573	0.0678	1.6700e-003	0.0694		242.1386	242.1386	0.0121		242.3916
Total	0.0890	0.2494	1.3493	3.3800e-003	0.2664	3.6700e-003	0.2701	0.0708	3.3800e-003	0.0741		273.6111	273.6111	0.0123		273.8695

3.6 Building Construction - 2018**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	lb/day										lb/day					
Off-Road	0.1781	1.5745	1.2112	1.5300e-003		0.1257	0.1257		0.1156	0.1156		153.7876	153.7876	0.0479		154.7930
Total	0.1781	1.5745	1.2112	1.5300e-003		0.1257	0.1257		0.1156	0.1156		153.7876	153.7876	0.0479		154.7930

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	lb/day										lb/day					
Hauling	2.8400e-003	0.0296	0.0394	1.0000e-004	3.8500e-003	4.9000e-004	4.3400e-003	1.0200e-003	4.6000e-004	1.4700e-003		10.1195	10.1195	7.0000e-005		10.1210
Vendor	0.0108	0.0750	0.1637	2.2000e-004	6.0300e-003	1.2500e-003	7.2800e-003	1.7200e-003	1.1500e-003	2.8700e-003		20.8031	20.8031	1.7000e-004		20.8067
Worker	0.0643	0.1185	0.9952	3.0500e-003	0.2555	1.7700e-003	0.2572	0.0678	1.6300e-003	0.0694		232.2612	232.2612	0.0111		232.4935
Total	0.0780	0.2231	1.1983	3.3700e-003	0.2653	3.5100e-003	0.2689	0.0705	3.2400e-003	0.0737		263.1838	263.1838	0.0113		263.4213

3.6 Building Construction - 2018

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	lb/day										lb/day					
Off-Road	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	153.7876	153.7876	0.0479		154.7930
Total	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	153.7876	153.7876	0.0479		154.7930

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	lb/day										lb/day					
Hauling	2.8400e-003	0.0296	0.0394	1.0000e-004	3.8500e-003	4.9000e-004	4.3400e-003	1.0200e-003	4.6000e-004	1.4700e-003		10.1195	10.1195	7.0000e-005		10.1210
Vendor	0.0108	0.0750	0.1637	2.2000e-004	6.0300e-003	1.2500e-003	7.2800e-003	1.7200e-003	1.1500e-003	2.8700e-003		20.8031	20.8031	1.7000e-004		20.8067
Worker	0.0643	0.1185	0.9952	3.0500e-003	0.2555	1.7700e-003	0.2572	0.0678	1.6300e-003	0.0694		232.2612	232.2612	0.0111		232.4935
Total	0.0780	0.2231	1.1983	3.3700e-003	0.2653	3.5100e-003	0.2689	0.0705	3.2400e-003	0.0737		263.1838	263.1838	0.0113		263.4213

3.7 Piping & Electrical - 2018

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	lb/day										lb/day					
Off-Road	0.4110	3.8755	3.2559	4.2500e-003		0.2887	0.2887		0.2656	0.2656		427.4666	427.4666	0.1331		430.2612
Total	0.4110	3.8755	3.2559	4.2500e-003		0.2887	0.2887		0.2656	0.2656		427.4666	427.4666	0.1331		430.2612

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	lb/day										lb/day					
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
Vendor	0.0108	0.0750	0.1637	2.2000e-004	6.0300e-003	1.2500e-003	7.2800e-003	1.7200e-003	1.1500e-003	2.8700e-003		20.8031	20.8031	1.7000e-004		20.8067
Worker	0.0514	0.0948	0.7962	2.4400e-003	0.2044	1.4100e-003	0.2058	0.0542	1.3100e-003	0.0555		185.8090	185.8090	8.8500e-003		185.9948
Total	0.0623	0.1698	0.9599	2.6600e-003	0.2104	2.6600e-003	0.2131	0.0559	2.4600e-003	0.0584		206.6121	206.6121	9.0200e-003		206.8016

3.7 Piping & Electrical - 2018

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	lb/day										lb/day					
Off-Road	0.1041	2.3778	3.2109	4.2500e-003		0.1666	0.1666		0.1666	0.1666	0.0000	427.4666	427.4666	0.1331		430.2612
Total	0.1041	2.3778	3.2109	4.2500e-003		0.1666	0.1666		0.1666	0.1666	0.0000	427.4666	427.4666	0.1331		430.2612

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	lb/day										lb/day					
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
Vendor	0.0108	0.0750	0.1637	2.2000e-004	6.0300e-003	1.2500e-003	7.2800e-003	1.7200e-003	1.1500e-003	2.8700e-003		20.8031	20.8031	1.7000e-004		20.8067
Worker	0.0514	0.0948	0.7962	2.4400e-003	0.2044	1.4100e-003	0.2058	0.0542	1.3100e-003	0.0555		185.8090	185.8090	8.8500e-003		185.9948
Total	0.0623	0.1698	0.9599	2.6600e-003	0.2104	2.6600e-003	0.2131	0.0559	2.4600e-003	0.0584		206.6121	206.6121	9.0200e-003		206.8016

3.8 Final Grading & Paving - 2018

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	lb/day										lb/day					
Off-Road	2.1619	22.0147	16.1869	0.0231		1.2944	1.2944		1.1908	1.1908		2,325.1274	2,325.1274	0.7238		2,340.3282
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.1678	22.0147	16.1869	0.0231		1.2944	1.2944		1.1908	1.1908		2,325.1274	2,325.1274	0.7238		2,340.3282

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	lb/day										lb/day					
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
Vendor	0.1083	0.7501	1.6371	2.1500e-003	0.0603	0.0125	0.0728	0.0172	0.0115	0.0287		208.0308	208.0308	1.7400e-003		208.0674
Worker	0.0482	0.0889	0.7464	2.2900e-003	0.1916	1.3200e-003	0.1929	0.0508	1.2200e-003	0.0520		174.1959	174.1959	8.3000e-003		174.3702
Total	0.1565	0.8390	2.3835	4.4400e-003	0.2519	0.0138	0.2658	0.0681	0.0127	0.0808		382.2267	382.2267	0.0100		382.4375

3.8 Final Grading & Paving - 2018

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	lb/day										lb/day					
Off-Road	0.5658	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,325.1274	2,325.1274	0.7238		2,340.3282
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.5717	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,325.1274	2,325.1274	0.7238		2,340.3282

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	lb/day										lb/day					
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
Vendor	0.1083	0.7501	1.6371	2.1500e-003	0.0603	0.0125	0.0728	0.0172	0.0115	0.0287		208.0308	208.0308	1.7400e-003		208.0674
Worker	0.0482	0.0889	0.7464	2.2900e-003	0.1916	1.3200e-003	0.1929	0.0508	1.2200e-003	0.0520		174.1959	174.1959	8.3000e-003		174.3702
Total	0.1565	0.8390	2.3835	4.4400e-003	0.2519	0.0138	0.2658	0.0681	0.0127	0.0808		382.2267	382.2267	0.0100		382.4375

3.8 Final Grading & Paving - 2019**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	lb/day										lb/day					
Off-Road	1.9383	19.6123	15.9924	0.0231		1.1315	1.1315		1.0410	1.0410		2,287.0356	2,287.0356	0.7236		2,302.2311
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.9442	19.6123	15.9924	0.0231		1.1315	1.1315		1.0410	1.0410		2,287.0356	2,287.0356	0.7236		2,302.2311

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	lb/day										lb/day					
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
Vendor	0.0958	0.6799	1.5447	2.1500e-003	0.0603	0.0115	0.0718	0.0173	0.0106	0.0278		204.4316	204.4316	1.6800e-003		204.4670
Worker	0.0433	0.0809	0.6720	2.2900e-003	0.1916	1.3100e-003	0.1929	0.0508	1.2100e-003	0.0520		167.8457	167.8457	7.7500e-003		168.0084
Total	0.1390	0.7607	2.2167	4.4400e-003	0.2519	0.0128	0.2647	0.0681	0.0118	0.0798		372.2773	372.2773	9.4300e-003		372.4754

3.8 Final Grading & Paving - 2019

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	lb/day										lb/day					
Off-Road	0.5658	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,287.0356	2,287.0356	0.7236		2,302.2311
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	0.5717	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,287.0356	2,287.0356	0.7236		2,302.2311

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	lb/day										lb/day					
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
Vendor	0.0958	0.6799	1.5447	2.1500e-003	0.0603	0.0115	0.0718	0.0173	0.0106	0.0278		204.4316	204.4316	1.6800e-003		204.4670
Worker	0.0433	0.0809	0.6720	2.2900e-003	0.1916	1.3100e-003	0.1929	0.0508	1.2100e-003	0.0520		167.8457	167.8457	7.7500e-003		168.0084
Total	0.1390	0.7607	2.2167	4.4400e-003	0.2519	0.0128	0.2647	0.0681	0.0118	0.0798		372.2773	372.2773	9.4300e-003		372.4754

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	lb/day										lb/day					
Mitigated	0.3409	2.4591	6.2444	0.0108	0.2898	0.0464	0.3362	0.0790	0.0427	0.1216		990.8265	990.8265	9.9100e-003		991.0345
Unmitigated	0.3409	2.4591	6.2444	0.0108	0.2898	0.0464	0.3362	0.0790	0.0427	0.1216		990.8265	990.8265	9.9100e-003		991.0345

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	32.09	12.00	12.00	101,785	101,785
Parking Lot	0.00	0.00	0.00		
Total	32.09	12.00	12.00	101,785	101,785

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.070000	0.070000	0.070000	0.000000	0.000000	0.000000	0.000000	0.790000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
NaturalGas Unmitigated	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	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
General Light Industry	332.362	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Total		3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	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
General Light Industry	0.332362	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Total		3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393

6.0 Area Detail

6.1 Mitigation Measures Area

	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	lb/day										lb/day					
Mitigated	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Unmitigated	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2049					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Total	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003

Mitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2049					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Total	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	1	24.00	8	500	0.74	Diesel

UnMitigated/Mitigated

	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
Equipment Type	lb/day										lb/day					
Generator Sets	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063

10.0 Vegetation

GHG PROCESS EMISSIONS

EXISTING

AVERAGE DAILY FLOW	2.6	MGD
INFLUENT BOD LOADING	270	MG/L BOD5
EFFLUENT BOD LOADING	10	MG/L BOD5
BOD REMOVAL FACTOR	0.96	
AVG PER CAPITA WW FLOW	90	City of Ridgecrest. 2015. WWTP Facility Plan.
EQUIV PER CAPITA SERVED	28888.9	

ANNUAL PROCESS CH4 FROM ANAEROBIC AND FACULTATIVE WASTEWATER TREATMENT LAGOONS

37	CH4 (CO2E)
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(Typically only applies to poorly run POTWs. EPA considers CH4 from compliant POTWs with aerobic treatment systems to be negligible. Per Local Government Operations Protocol May 2010.) Emissions from other GHGs would be minimal.

PROPOSED

AVERAGE DAILY FLOW	3.6	MGD
INFLUENT BOD LOADING	270	MG/L BOD5
EFFLUENT BOD LOADING	10	MG/L BOD5
BOD REMOVAL FACTOR	0.96	
AVG PER CAPITA WW FLOW	85	City of Ridgecrest. 2015. WWTP Facility Plan.
EQUIV PER CAPITA SERVED	42352.9	

ANNUAL PROCESS CH4 FROM ANAEROBIC AND FACULTATIVE WASTEWATER TREATMENT LAGOONS

37	CH4 (CO2E)
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(Typically only applies to poorly run POTWs. EPA considers CH4 from compliant POTWs with aerobic treatment systems to be negligible. Per Local Government Operations Protocol May 2010.) Emissions from other GHGs would be minimal.

EXISTING CONDITIONS

TOTAL EMISSIONS (LBS/YR)

PROCESS	Total ROG/VOCs	BENZENE	ETHYL-BENZENE	TOLUENE	XYLENES	CHLOROFORM	METHYLENE CHLORIDE	TETRACHLORO-ETHYLENE	1,1,1-TRICHLORO-ETHANE	ACETONE**	METHYL ETHYL KETONE	MIBK**
PRELIMINARY/PRIMARY TREATMENT												
HEADWORKS-NON DUCTED	0.260	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRIT REMOVAL-NON AERATED	1.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PRIMARY SEDIMENTATION	104.000	0.107	0.075	0.468	0.042	0.146	0.260	0.185	0.104	13.260	2.652	2.405
FLOW EQUALIZATION-PRIMARY EFFLUENT	278.096	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.220	2.436	2.215
BIOLOGICAL TREATMENT												
ACTIVATED SLUDGE-MECHANICALLY AERATED	78.000	0.000	0.000	0.000	0.000	10.140	18.980	13.000	7.540	12.220	2.436	2.215
POST BIOLOGICAL TREATMENT												
SECONDARY CLARIFIERS	31.200	0.000	0.000	0.000	0.000	0.099	0.182	0.055	0.031	31.460	6.266	5.694
FINAL EFFLUENT EVAPORATION PONDS	1361.256	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SOLIDS HANDLING												
SLUDGE DIGESTION - ANAEROBIC-FIXED COVERS	0.104	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DRYING BED - STATIC	33.826	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL (LBS/YR):	1966.30	0.11	0.08	0.47	0.04	10.38	19.42	13.24	7.68	81.38	16.23	14.74
TOTAL (LBS/DY):	5.39	0.00	0.00	0.00	0.00	0.03	0.05	0.04	0.02	0.22	0.04	0.04
TOTAL (LBS/HR):		0.00001	0.00001	0.00005	0.00000	0.00119	0.00222	0.00151	0.00088	0.00929	0.00185	0.00168
TOTAL (TONS/YR):	0.983	0.000	0.000	0.000	0.000	0.005	0.010	0.007	0.004	0.041	0.008	0.007

TAC SCREENING RISK ASSESSMENT*

CANCER UNIT RISK/POTENCY FACTOR:	2.90E-05	2.50E-06	0.00E+00	0.00E+00	5.30E-06	1.00E-06	5.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RECEPTOR PROXIMITY ADJUSTMENT FACTOR:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
NORMALIZATION FACTOR:	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03
ACUTE EXPOSURE EFFECTS LEVEL	1.30E+03	0.00E+00	3.70E+04	2.20E+04	1.50E+02	1.40E+04	2.00E+04	6.80E+04	0.00E+00	1.30E+04	0.00E+00	0.00E+00
CHRONIC EXPOSURE EFFECTS LEVEL	6.00E+01	2.00E+03	3.00E+02	7.00E+02	3.00E+02	4.00E+02	3.50E+01	1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CARCINOGENIC RISK:	2.10E-04	1.28E-05	0.00E+00	0.00E+00	3.74E-03	1.32E-03	5.31E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL CARCINOGENIC RISK:	1.06E-02	ONSITE	2.65E-03	OFFSITE RECEPTOR								
NON-CARCINOGENIC ACUTE RISK:	5.616E-07	0.000E+00	8.663E-08	1.295E-08	4.742E-04	9.502E-06	0.000E+00	0.000E+00	0.000E+00	8.549E-06	0.000E+00	0.000E+00
TOTAL NON-CARCINOGENIC ACUTE RISK:	4.929E-04											
NON-CARCINOGENIC CHRONIC RISK:	1.22E-06	0.00E+00	1.07E-06	4.07E-08	2.37E-05	3.33E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL NON-CARCINOGENIC CHRONIC RISK:	5.93E-05											
TOTAL NON-CARCINOGENIC RISK:	5.52E-04	ONSITE	1.38E-04	OFFSITE RECEPTOR								

*Based on methodology derived from the CAPCOA Air Toxics "Hot Spots" Program, Facility Prioritization Guidelines (available at website url: <http://www.arb.ca.gov/ab2588/RRAP-IWRA/priguide.pdf>) and risk values obtained from the Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values. February 14, 2011. Available at url: <http://www.arb.ca.gov/toxics/healthval/healthval.htm>.

**The toxicity of acetone is low, and the modeled exposures indicate that it would not pose any significant health risk, even in worst-case scenarios. Based on this information, acetone has been removed from the list of Hot Spots chemicals by the Air Resources Board. Office of Environmental Health Hazard Assessment (OEHHA). Accessed September 25, 2011. Air-Hotspots-Acute RELs. Website url: http://www.oehha.ca.gov/air/acute_rels/response4_2.html. Methyl isobutyl ketone (MIBK) is not currently identified by the OEHHA as part of the chemicals to be evaluated as part of the "Hot Spots" program and no health risk values are currently available for use in risk assessment for this chemical.

PROJECT ALTERNATIVE 1

TOTAL EMISSIONS (LBS/YR)

PROCESS	Total ROG/VOCS	BENZENE	ETHYL-BENZENE	TOLUENE	XYLENES	CHLOROFORM	METHYLENE CHLORIDE	TETRACHLORO-ETHYLENE	1,1,1-TRICHLOROETHANE	ACETONE	MEK	MIBK
PRELIMINARY/PRIMARY TREATMENT												
HEADWORKS-DUCTED	310.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRIT REMOVAL-NON AERATED	2.160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BIOLOGICAL TREATMENT												
ACTIVATED SLUDGE-MECHANICALLY AERATED	108.000	0.000	0.000	0.000	0.000	14.040	26.280	18.000	10.440	16.920	3.373	3.067
POST BIOLOGICAL TREATMENT												
SECONDARY CLARIFIERS	43.200	0.000	0.000	0.000	0.000	0.137	0.252	0.076	0.043	43.560	8.676	7.884
EFFLUENT FILTRATION	1.080	0.016	0.011	0.070	0.099	0.018	0.032	0.023	0.013	0.000	0.000	0.000
CHLORINATION	1.620	0.000	0.000	0.000	0.000	0.090	0.167	0.115	0.135	0.000	0.000	0.000
FINAL EFFLUENT EVAPORATION PONDS	1884.816	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SOLIDS HANDLING												
SLUDGE DIGESTION - AEROBIC	36.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DEWATERING - BELT PRESS	216.000	9.000	11.880	72.000	22.680	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE STORAGE	21.960	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE TRUCK LOADING OPERATIONS	6.228	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DRYING BED - STATIC	46.836	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL (LBS/YR):	2679.73	9.02	11.89	72.07	22.78	14.28	26.73	18.21	10.63	60.48	12.05	10.95
TOTAL (LBS/DY):	7.34	0.02	0.03	0.20	0.06	0.04	0.07	0.05	0.03	0.17	0.03	0.03
TOTAL (LBS/HR):	0.00103	0.00136	0.00823	0.00260	0.00163	0.00305	0.00208	0.00121	0.00690	0.00138	0.00125	
TOTAL (TONS/YR):	1.340	0.005	0.006	0.036	0.011	0.007	0.013	0.009	0.005	0.030	0.006	0.005

TAC SCREENING RISK ASSESSMENT

CANCER UNIT RISK/POTENCY FACTOR:	2.90E-05	2.50E-06	0.00E+00	0.00E+00	5.30E-06	1.00E-06	5.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RECEPTOR PROXIMITY ADJUSTMENT FACTOR:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
NORMALIZATION FACTOR:	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03
ACUTE EXPOSURE EFFECTS LEVEL	1.30E+03	0.00E+00	3.70E+04	2.20E+04	1.50E+02	1.40E+04	2.00E+04	6.80E+04	0.00E+00	1.30E+04	0.00E+00	0.00E+00
CHRONIC EXPOSURE EFFECTS LEVEL	6.00E+01	2.00E+03	3.00E+02	7.00E+02	3.00E+02	4.00E+02	3.50E+01	1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CARCINOGENIC RISK:	1.78E-02	2.02E-03	0.00E+00	0.00E+00	5.15E-03	1.82E-03	7.31E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL CARCINOGENIC RISK:	3.41E-02	ONSITE	8.52E-03	OFFSITE RECEPTOR								
NON-CARCINOGENIC ACUTE RISK:	4.750E-05	0.000E+00	1.334E-05	7.092E-06	6.523E-04	1.308E-05	0.000E+00	0.000E+00	0.000E+00	6.348E-06	0.000E+00	0.000E+00
TOTAL NON-CARCINOGENIC ACUTE RISK:	7.396E-04											
NON-CARCINOGENIC CHRONIC RISK:	1.03E-04	0.00E+00	1.65E-04	2.23E-05	3.26E-05	4.58E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL NON-CARCINOGENIC CHRONIC RISK:	3.68E-04											
TOTAL NON-CARCINOGENIC RISK:	1.11E-03	ONSITE	2.77E-04	OFFSITE RECEPTOR								

*Based on methodology derived from the CAPCOA Air Toxics "Hot Spots" Program, Facility Prioritization Guidelines (available at website url: <http://www.arb.ca.gov/ab2588/RRAP-IWRA/priguide.pdf>) and risk values obtained from the Consolidated Table of OEHH/ARB Approved Risk Assessment Health Values. February 14, 2011. Available at url: <http://www.arb.ca.gov/toxics/healthval/healthval.htm>.

**The toxicity of acetone is low, and the modeled exposures indicate that it would not pose any significant health risk, even in worst-case scenarios. Based on this information, acetone has been removed from the list of Hot Spots chemicals by the Air Resources Board. Office of Environmental Health Hazard Assessment (OEHH). Accessed September 25, 2011. Air-Hotspots-Acute RELs. Website url: http://www.oehha.ca.gov/air/acute_rels/response4_2.html. Methyl Isobutyl ketone (MIBK) is not currently identified by the OEHH as part of the chemicals to be evaluated as part of the "Hot Spots" program and no health risk values are currently available for use in risk assessment for this chemical.

PROJECT ALTERNATIVE 2

TOTAL EMISSIONS (LBS/YR)

PROCESS	Total ROG/VOCS	BENZENE	ETHYL-BENZENE	TOLUENE	XYLENES	CHLOROFORM	METHYLENE CHLORIDE	TETRACHLORO-ETHYLENE	1,1,1-TRICHLOROETHANE	ACETONE	MEK	MIBK
PRELIMINARY/PRIMARY TREATMENT												
HEADWORKS-DUCTED	310.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRIT REMOVAL-NON AERATED	2.160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BIOLOGICAL TREATMENT												
ACTIVATED SLUDGE-MECHANICALLY AERATED	108.000	0.000	0.000	0.000	0.000	14.040	26.280	18.000	10.440	16.920	3.373	3.067
POST BIOLOGICAL TREATMENT												
SECONDARY CLARIFIERS	43.200	0.000	0.000	0.000	0.000	0.137	0.252	0.076	0.043	43.560	8.676	7.884
EFFLUENT FILTRATION	1.080	0.016	0.011	0.070	0.099	0.018	0.032	0.023	0.013	0.000	0.000	0.000
CHLORINATION	1.620	0.000	0.000	0.000	0.000	0.090	0.167	0.115	0.135	0.000	0.000	0.000
FINAL EFFLUENT EVAPORATION PONDS	1884.816	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SOLIDS HANDLING												
SLUDGE DIGESTION - AEROBIC	36.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DEWATERING - BELT PRESS	216.000	9.000	11.880	72.000	22.680	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE STORAGE	21.960	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE TRUCK LOADING OPERATIONS	6.228	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DRYING BED - STATIC	46.836	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL (LBS/YR):	2679.73	9.02	11.89	72.07	22.78	14.28	26.73	18.21	10.63	60.48	12.05	10.95
TOTAL (LBS/DY):	7.34	0.02	0.03	0.20	0.06	0.04	0.07	0.05	0.03	0.17	0.03	0.03
TOTAL (LBS/HR):		0.00103	0.00136	0.00823	0.00260	0.00163	0.00305	0.00208	0.00121	0.00690	0.00138	0.00125
TOTAL (TONS/YR):	1.340	0.005	0.006	0.036	0.011	0.007	0.013	0.009	0.005	0.030	0.006	0.005

TAC SCREENING RISK ASSESSMENT

CANCER UNIT RISK/POTENCY FACTOR:	2.90E-05	2.50E-06	0.00E+00	0.00E+00	5.30E-06	1.00E-06	5.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RECEPTOR PROXIMITY ADJUSTMENT FACTOR:	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
NORMALIZATION FACTOR:	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03
ACUTE EXPOSURE EFFECTS LEVEL	1.30E+03	0.00E+00	3.70E+04	2.20E+04	1.50E+02	1.40E+04	2.00E+04	6.80E+04	0.00E+00	1.30E+04	0.00E+00	0.00E+00
CHRONIC EXPOSURE EFFECTS LEVEL	6.00E+01	2.00E+03	3.00E+02	7.00E+02	3.00E+02	4.00E+02	3.50E+01	1.00E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CARCINOGENIC RISK:	1.11E-01	1.26E-02	0.00E+00	0.00E+00	3.22E-02	1.14E-02	4.57E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL CARCINOGENIC RISK:	2.13E-01	ONSITE	5.32E-02	OFFSITE RECEPTOR								
NON-CARCINOGENIC ACUTE RISK:	2.969E-04	0.000E+00	8.338E-05	4.432E-05	4.077E-03	8.174E-05	0.000E+00	0.000E+00	0.000E+00	3.968E-05	0.000E+00	0.000E+00
TOTAL NON-CARCINOGENIC ACUTE RISK:	4.623E-03											
NON-CARCINOGENIC CHRONIC RISK:	6.43E-04	0.00E+00	1.03E-03	1.39E-04	2.04E-04	2.86E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL NON-CARCINOGENIC CHRONIC RISK:	2.30E-03											
TOTAL NON-CARCINOGENIC RISK:	6.92E-03	ONSITE	1.73E-03	OFFSITE RECEPTOR								

*Based on methodology derived from the CAPCOA Air Toxics "Hot Spots" Program, Facility Prioritization Guidelines (available at website url: <http://www.arb.ca.gov/ab2588/RRAP-IWRA/priguide.pdf>) and risk values obtained from the Consolidated Table of OEHH/ARB Approved Risk Assessment Health Values. February 14, 2011. Available at url: <http://www.arb.ca.gov/toxics/healthval/healthval.htm>.

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AB2588 Health Risk Screening/Facility Risk Prioritization

AB2588 requires the prioritization of facilities as either high, intermediate, or low priority to determine if a facility needs to conduct a health risk assessment. Facilities exceeding total facility score of 10 are considered to potentially exceed the MBUAPCD's significance thresholds for human health risk and would be considered "high priority." A more detailed health risk assessment would be required for "high priority" facilities. Toxics Best Control Technology (TBACT) is typically required for facilities identified as "intermediate priority" facilities. "Low priority" facilities are typically not considered to result in a significant impact.

Project: Ridgcrest WWTP-Alternative 1
Source: Emergency Generator
Receptor Distance: 530 m
Release Height: 4 m
Facility Risk Category: Intermediate Priority
Exceeds Thresholds/High Priority?: No

Total Facility Score	Category
TS > 10	High Priority
1 < TS ≤ 10	Intermediate Priority
TS ≤ 1	Low Priority

The spreadsheet below was based on the CAPCOA - Dispersion Adjustment Procedure.

cancer TS = $\{ \sum (E_c) * (P_c) * (RP) * (D_h) \} * (128)$
 acute TS = $\sum (E_c) / (P_c) * (RP) * (D_h) * (25)$
 chronic TS = $\sum (E_c) / (P_c) * (RP) * (D_h) * (2.5)$

Emittent ID No. (CAS)	Substance Name	Degree of Accuracy (lb/yr)	E _c			P _c Unit Risk Value (ug/m ³) ⁻¹ (d)	Chronic		Acute		D _h Dispersion Adjustment Factors (h)	RP Receptor Proximity (i)	Total Scores		
			Annual (lb/yr) (a)	Avg Hourly (lb/hr) (b)	Max Hourly (lb/hr) (c)		Chronic REL (ug/m3) (e)	Target Organ (f)	Acute REL (ug/m3) (g)	Target Organ (f)			Cancer 0.23	Chronic 0.02	Acute 0.00
			Individual Priority Scores										Cancer T _{cancer} (j)	Chronic T _{chronic} (k)	Acute T _{acute} (l)
9901	diesel exhaust (particulate emissions)	2	9.00E+00	5.00E-02	5.00E-02	3.00E-04	5.00E+00	R	0.00E+00		60	0.01	2.28E-01	1.65E-02	
						0.00E+00	0.00E+00		0.00E+00		60	0.01			
						0.00E+00	0.00E+00		0.00E+00		60	0.01			
						0.00E+00	0.00E+00		0.00E+00		60	0.01			

Notes:

Target Organs (TO)	Facility Prioritization Scores		
	cancer	chronic	acute
Alimentary Tract (A)		0.00	0.00
Cardiovascular (C)		0.00	0.00
Eye (E)		0.00	0.00
gastrointestinal/liver (G)		0.00	0.00
Headache/Nausea (HN)		0.00	0.00
Hematological (H)		0.00	0.00
Immune System (I)		0.00	0.00
Kidney (K)		0.00	0.00
Nervous System (N)		0.00	0.00
Reproductive/Developmental (RD)		0.00	0.00
Respiratory (R)		0.02	0.00
Skin (S)		0.00	0.00
Total Cancer:	0.228		

(d) URVs = OEHHA/ARB Consolidated Table, updated May 13, 2015
 (e) Chronic RELs = OEHHA/ARB Consolidated Table, updated May 13, 2015
 (f) The impacts of acute and chronic non-cancer compounds are organ-specific. Therefore chronic non-cancer and acute prioritization scores are organ-specific. Those facility scores include the total contributions to specific target organs (TO) and are not just totals for each category.
 (g) Acute RELs = OEHHA/ARB Consolidated Table, updated May 13, 2015
 * chromium 6+ (hexavalent) includes barium chromate, calcium chromate, lead chromate, sodium dichromate or strontium chromate assuming exposure by inhalation
 ** unit risk value for dioxins and furans is listed for the worst case. If information on individual compounds is known, look up specific risk values in the Consolidated Table of OEHHA/ARB approved risk assessment health values
 *** low risk, for use in cases where congeners with more than four chlorines comprise less than one-half percent of total polychlorinated biphenyls
 **** high risk, for use in cases where congeners with more than four chlorines do not comprise less than one-half percent of total polychlorinated biphenyls

AB2588 Health Risk Screening/Facility Risk Prioritization

AB2588 requires the prioritization of facilities as either high, intermediate, or low priority to determine if a facility needs to conduct a health risk assessment. Facilities exceeding total facility score of 10 are considered to potentially exceed the MBUAPCD's significance thresholds for human health risk and would be considered "high priority." A more detailed health risk assessment would be required for "high priority" facilities. Toxics Best Control Technology (TBACT) is typically required for facilities identified as "intermediate priority" facilities. "Low priority" facilities are typically not considered to result in a significant impact.

Project: Ridgcrest WWTP-Alternative 2
Source: Emergency Generator
Receptor Distance: 530 m
Release Height: 4 m
Facility Risk Category: Intermediate Priority
Exceeds Thresholds/High Priority?: No

Total Facility Score	Category
TS > 10	High Priority
1 < TS ≤ 10	Intermediate Priority
TS ≤ 1	Low Priority

The spreadsheet below was based on the CAPCOA - Dispersion Adjustment Procedure.

$$\text{cancer TS} = \{ \sum (E_c) * (P_c) * (RP) * (D_h) \} * (128)$$

$$\text{acute TS} = \sum (E_c) / (P_c) * (RP) * (D_h) * (25)$$

$$\text{chronic TS} = \sum (E_c) / (P_c) * (RP) * (D_h) * (2.5)$$

Emittent ID No. (CAS)	Substance Name	Degree of Accuracy (lb/yr)	E _c			P _c Unit Risk Value (ug/m ³) ⁻¹ (d)	Chronic		Acute		D _h Dispersion Adjustment Factors (h)	RP Receptor Proximity (i)	Total Scores		
			Annual (lb/yr) (a)	Avg Hourly (lb/hr) (b)	Max Hourly (lb/hr) (c)		Chronic REL (ug/m3) (e)	Target Organ (f)	Acute REL (ug/m3) (g)	Target Organ (f)			Cancer 0.83	Chronic 0.06	Acute 0.00
			Individual Priority Scores											Cancer T _{cancer} (j)	Chronic T _{chronic} (k)
9901	diesel exhaust (particulate emissions)	2	9.00E+00	5.00E-02	5.00E-02	3.00E-04	5.00E+00	R	0.00E+00		60	0.04	8.29E-01	6.00E-02	
						0.00E+00	0.00E+00		0.00E+00		60	0.04			
						0.00E+00	0.00E+00		0.00E+00		60	0.04			
						0.00E+00	0.00E+00		0.00E+00		60	0.04			

Notes:

Target Organs (TO)	Facility Prioritization Scores		
	cancer	chronic	acute
Alimentary Tract (A)	0.00	0.00	0.00
Cardiovascular (C)	0.00	0.00	0.00
Eye (E)	0.00	0.00	0.00
gastrointestinal/liver (G)	0.00	0.00	0.00
Headache/Nausea (HN)	0.00	0.00	0.00
Hematological (H)	0.00	0.00	0.00
Immune System (I)	0.00	0.00	0.00
Kidney (K)	0.00	0.00	0.00
Nervous System (N)	0.00	0.00	0.00
Reproductive/Developmental (RD)	0.00	0.00	0.00
Respiratory (R)	0.06	0.00	0.00
Skin (S)	0.00	0.00	0.00
Total Cancer:	0.829		

(d) URVs = OEHHA/ARB Consolidated Table, updated May 13, 2015
 (e) Chronic RELs = OEHHA/ARB Consolidated Table, updated May 13, 2015
 (f) The impacts of acute and chronic non-cancer compounds are organ-specific. Therefore chronic non-cancer and acute prioritization scores are organ-specific. Those facility scores include the total contributions to specific target organs (TO) and are not just totals for each category.
 (g) Acute RELs = OEHHA/ARB Consolidated Table, updated May 13, 2015
 * chromium 6+ (hexavalent) includes barium chromate, calcium chromate, lead chromate, sodium dichromate or strontium chromate assuming exposure by inhalation
 ** unit risk value for dioxins and furans is listed for the worst case. If information on individual compounds is known, look up specific risk values in the Consolidated Table of OEHHA/ARB approved risk assessment health values
 *** low risk, for use in cases where congeners with more than four chlorines comprise less than one-half percent of total polychlorinated biphenyls
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