E&B Oil Development Project

City of Hermosa Beach

Planning Application

Appendix C

Air Quality Impact Analysis

E&B Natural Resources

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Air Quality Impact Analysis

E&B Natural Resources Management Corporation

E&B Oil Development Project

Hermosa Beach City Maintenance Yard
555 6th Street
Hermosa Beach, CA 90254

November 12, 2012

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1.0 INTRODUCTION

This Air Quality Assessment identifies the potential impacts on air quality resulting from the proposed project identified as the E&B Oil Development Project (proposed project). The project site is located in the South Coast Air Basin (Basin).

2.0 PROJECT DESCRIPTION

2.1 Project Site

The project site consists of 1.3 acres located at 555 6th Street in the southern portion of the City of Hermosa Beach (City) in southwestern Los Angeles County. The project site is shown in its regional setting in Exhibit A.

Exhibit B provides the location of the project site in its local setting and shows the existing conditions on and in the vicinity of the project site. The project site is located approximately seven blocks east of the beach and the Pacific Ocean and is bounded by the following: to the east by Valley Drive, the Veterans Parkway (Hermosa Valley Greenbelt/Trail), Ardmore Park and, further to the east, by Ardmore Avenue and residential development; to the south by 6th Street, the City Beach Self Storage facility, light manufacturing land uses and, further to the south, South Park and residential development; to the west by light manufacturing land uses, Cypress Street and, further to the west, residential development; and to the north by light manufacturing land uses and, further to the north, residential development and 8th Street.

The project site is owned by the City and is currently used as their City Maintenance Yard. The Project Applicant will lease the project site from the City for the implementation of the proposed project.

2.2 Project Characteristics

The proposed project provides for the development of an onshore drilling and production site that would utilize directional drilling to access the oil and gas reserves in the tidelands (granted by the State of California to the City) and in an onshore area known as the uplands. Both of these areas are located within the Torrance Oil Field beneath the City. The site project would have 30 oil wells, four water injection wells, and supporting production equipment with the implementation of the proposed project. In addition, the proposed project would result in installation and undergrounding of utilities offsite, improvement of an intersection adjacent to the project site, and the installation of offsite underground pipelines for the transport of the processed crude oil and gas from the project site to purchasers. The proposed project would also result in the relocation of the City Maintenance Yard to another site. The relocation of the City Maintenance Yard will be addressed in a separate analysis prepared by the City.

The proposed project would occur in four phases consisting of the following:

- Phase 1: Site Preparation
- Phase 2: Drilling and Testing
- Phase 3: Final Design and Construction
- Phase 4: Development and Operations

A listing of the project schedule, construction activities, and operations that would occur in each of the four phases is provided in Exhibits H and I.

3.0 AIR QUALITY STANDARDS

There are two categories of air pollutants that are regulated by federal, State, and/or regional governmental agencies: criteria pollutants; and hazardous air pollutants (HAPs). These air pollutants, which are emitted as a result of everyday activities, can pose significant health and environmental risks. The following provides a discussion of each air pollutant category.

3.1 Criteria Pollutants

The Federal Clean Air Act (FCAA) of 1970, and the subsequent Federal Clean Air Act Amendments (FCAAA) of 1977 and 1990, required the establishment of National Ambient Air Quality Standards (NAAQS) for widespread pollutants considered harmful to public health and the environment. These pollutants are commonly referred to as criteria pollutants. The NAAQS establish acceptable pollutant concentrations which may be equaled continuously or exceeded only once per year. The California Ambient Air Quality Standards (CAAQS) are limits set by the California Air Resources Board (CARB) that cannot be equaled or exceeded. An air pollution control district must prepare an Air Quality Attainment Plan if the standards are not met. The NAAQS and CAAQS are shown in Table 1.

The following is a summary of the characteristics of the criteria pollutants and their potential physical and health effects.

Ozone Emissions - Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The ground level, or "bad" ozone layer, is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up where it meets the second layer, the stratosphere. The stratospheric, or "good" ozone layer, extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on other air pollutants (called precursors), specifically nitrogen oxide (NO_x) and reactive organic gases (ROG). Sources of precursor gases to the photochemical reaction that form ozone number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans, as well as to a wide variety of inanimate materials such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

Table 1: Ambient Air Quality Standards

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 μg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 μg/m^3)		0.075 ppm (147 μg/m^3)		
Respirable Particulate Matter (PM10)	24 Hour	50 μg/m^3	Gravimetric or Beta Attenuation	150 μg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 μg/m^3		—		
Fine Particulate Matter (PM2.5)	24 Hour	—	—	35 μg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 μg/m^3	Gravimetric or Beta Attenuation	15 μg/m^3		
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[8]	1 Hour	0.18 ppm (339 μg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 μg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 μg/m3)		0.053 ppm (100 μg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[9]	1 Hour	0.25 ppm (655 μg/m^3)	Ultraviolet Fluorescence	75 ppb (196 μg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 μg/m^3)	
	24 Hour	0.04 ppm (105 μg/m^3)		0.14 ppm (for certain areas)[9]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[9]	—	
Lead[10,11]	30 Day Average	1.5 μg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 μg/m^3 (for certain areas)[11]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 μg/m^3		
Visibility Reducing Particles[12]	8 Hour	See footnote 12	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 μg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 μg/m^3)	Gas Chromatography			

See footnotes on next page …

For more information please call ARB-PIO at (916) 322-2990 California Air Resources Board (6/7/12)

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

9. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

   Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

0. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

1. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

2. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

For more information please call ARB-PIO at (916) 322-2990 **California Air Resources Board (6/7/12)**

Health Effects

While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as: forests and foothill communities; agricultural crops; and some man-made materials, such as rubber, paint, and plastic. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone accelerates aging and exacerbates pre-existing asthma and bronchitis and, in cases with high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. In addition, children inhale more air per pound of body weight than adults and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant; it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard could lead to lung inflammation and lung tissue damage and a reduction in the amount of air inhaled into the lungs.

Particulate Matter (PM_{10} **and** $PM_{2.5}$**) -** Particulate matter pollution consists of very small liquid and solid particles that remain suspended in the air for long periods. Some particles are large or concentrated enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter is emitted from stationary and mobile sources, including: diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. PM_{10} refers to particles less than or equal to 10 microns in aerodynamic diameter. $PM_{2.5}$ refers to particles less than or equal to 2.5 microns in aerodynamic diameter and are a subset of PM_{10}. Particulates of concern are those that are 10 microns or less in diameter. These are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

In the western United States there are sources of PM_{10} in both urban and rural areas. Because particles originate from a variety of sources their chemical and physical compositions vary widely. The composition of PM_{10} and $PM_{2.5}$ can also vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of PM_{10} and $PM_{2.5}$. In addition to those listed previously, secondary particles can also be

formed as precipitates from chemical and photochemical reactions of gaseous sulfur dioxide (SO_2) and NO_x in the atmosphere to create sulfates (SO_4) and nitrates (NO_3). Secondary particles are of greatest concern during the winter months where low inversion layers tend to trap the precursors of secondary particulates.

Health Effects

PM_{10} and $PM_{2.5}$ particles are small enough (about one-seventh the thickness of a human hair, or smaller) to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. PM_{10} and $PM_{2.5}$ can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of PM_{10}. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link PM_{10} exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic PM_{10} can also damage manmade materials and is a major cause of reduced visibility in many parts of the United States.

Carbon Monoxide (CO) - Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust that contributes more than two-thirds of all CO emissions nationwide. In urban areas, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO.

Health Effects

CO enters the bloodstream and binds more readily to hemoglobin than oxygen, reducing the oxygen-carrying capacity of blood and thus reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected, but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin (COHb) in the blood. Health effects observed may include: an early onset of cardiovascular disease; behavioral

impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome (SIDS); and increased daily mortality rate.

Most of the studies evaluating adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death.

Nitrogen Oxides (NO_x) - Nitrogen oxides (NO_x) is a family of highly reactive gases that are primary precursors to the formation of ground-level ozone and react in the atmosphere to form acid rain. NO_x is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, NO_x is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

Health Effects

NO_x is an ozone precursor that combines with ROG to form ozone. Refer to the discussion of ozone above regarding the health effects of ozone.

Direct inhalation of NO_x can also cause a wide range of health effects. NO_x can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of nitrogen dioxide (NO_2) may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with NO_x are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NO_x can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NO_x can also impair visibility.

NO_x is a major component of acid deposition in California. NO_x may affect both terrestrial and aquatic ecosystems. NO_x in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduce the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

NO_2 is toxic to various animals as well as to humans. Its toxicity relates to its ability to combine with water to form nitric acid in the eye, lung, mucus membranes, and skin. Studies of the health impacts of NO_2 include experimental studies on animals, controlled laboratory studies on humans, and observational studies. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO_2, can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

NO_x contributes to a wide range of environmental effects both directly and when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and

wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication as discussed above. Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms.

Sulfur Dioxide (SO_2) - The major source of sulfur dioxide (SO_2) is the combustion of high-sulfur fuels for electricity generation, petroleum refining, and shipping.

Health Effects

High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO_2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO_2, in conjunction with high levels of particulate matter, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO_2 also is a major precursor to $PM_{2.5,}$ which is a significant health concern and a main contributor to poor visibility. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain.

Lead (Pb) - Lead, a naturally occurring metal, can be a constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in automobile fuel. Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Since this has occurred, the ambient concentrations of lead have dropped dramatically.

Health Effects

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk, because their bodies are growing quickly.

Visibility-Reducing Particles - This standard is a measure of visibility. The entire State of California has been labeled unclassified for visibility. CARB has not established a method for measuring visibility with the necessary accuracy or precision needed to designate areas in the State as attainment or nonattainment.

Health Effects

No specific health effects have been defined for visibility-reducing particles.

Sulfates - Sulfates are particulate products from combustion of sulfur-containing fossil fuels. When sulfur dioxide (SO_2) is exposed to oxygen, it oxidizes into sulfates (SO_3 or SO_4). Through a variety of chemical and photochemical reactions in the atmosphere, the sulfates can combine with ammonia to form ammonium sulfate particulate.

Sulfates (SO_4) 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 SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California, due to regional meteorological features.

Health Effects

The health effects associated with SO_2 and sulfates more commonly known as sulfur oxides (SO_x) include respiratory illnesses, decreased pulmonary disease resistance, and aggravation of cardiovascular diseases. When acidic pollutants and particulates are also present, sulfur dioxide tends to have an even more toxic effect.

Increased particulate matter derived from sulfur dioxide emissions also contributes to impaired visibility. In addition to particulates, SO_3 and SO_4 are also precursors to acid rain. Acid rain can lead to corrosion of man-made structures and cause acidification of water bodies.

The State standard for SO_2 is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility and, because they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide - Hydrogen sulfide (H_2S) emissions are often associated with geothermal activity, oil, and gas production, refining, sewage treatment plants, and confined animal feeding operations. H_2S in the atmosphere will likely oxidize into SO_2 that can lead to acid rain.

Health Effects

Exposure to low concentrations of H_2S may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Exposure to higher concentrations (above 100 ppm) can cause olfactory fatigue, respiratory paralysis, and death. Brief exposures to high concentrations of H_2S (greater than 500 ppm) can cause a loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. However, in many individuals, there may be permanent or long-term effects such as headaches, poor attention span, poor memory, and poor motor function. No health effects have been found in humans exposed to typical environmental concentrations of H_2S (0.00011 ppm to 0.00033 ppm). Deaths due to breathing large amounts of H_2S have been reported in a variety of different work settings, including sewers, animal processing plants, waste dumps, sludge plants, oil and gas well drilling sites, and tanks and cesspools. Occupational Safety and Health Administrations (OSHA) has the primary responsibility for regulating workplace exposure to H_2S.

Vinyl Chloride - Vinyl chloride monomer is a sweet-smelling, colorless gas at ambient temperature. Landfills, publicly-owned treatment works, and polyvinyl chloride (PVC) production are the major identified sources of vinyl chloride emissions in California. PVC can be fabricated into several products, such as PVC pipes, pipe fittings, and plastics. In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers. There are currently no adopted ambient air standards for vinyl chloride.

Health Effects

Short-term exposure to vinyl chloride has been linked with the following acute health effects (Agency for Toxic Substances and Disease Registry 2004; U.S. Department of Health and Human Services 1993):

- Acute exposure of humans to high levels of vinyl chloride via inhalation in humans has resulted in effects on the central nervous system, such as dizziness, drowsiness, headaches, and giddiness.
- Vinyl chloride is reported to be slightly irritating to the eyes and respiratory tract in humans. Acute exposure to extremely high levels of vinyl chloride has caused loss of consciousness, lung and kidney irritation, and inhibition of blood clotting in humans and cardiac arrhythmias in animals.
- Tests involving acute exposure of mice have shown vinyl chloride to have high acute toxicity from inhalation exposure.

Long-term exposure to vinyl chloride concentrations has been linked with the following chronic health effects (Agency for Toxic Substances and Disease Registry 2004; U.S. Department of Health and Human Services, Registry of Toxic Effects of Chemical Substances [RTECS, online database] 1993; U.S. Department of Health and Human Services 1993; U.S. Environmental Protection Agency 2000):

- Liver damage may result in humans from chronic exposure to vinyl chloride, through both inhalation and oral exposure.

A small percentage of individuals occupationally exposed to high levels of vinyl chloride in air have developed a set of symptoms termed “vinyl chloride disease,” which is characterized by Raynaud’s phenomenon (fingers blanched and numbness and discomfort are experienced upon exposure to the cold), changes in the bones at the end of the fingers, joint and muscle pain, and scleroderma-like skin changes (thickening of the skin, decreased elasticity, and slight edema).

Central nervous system effects (including dizziness, drowsiness, fatigue, headache, visual and/or hearing disturbances, memory loss, and sleep disturbances) as well as peripheral nervous system symptoms (peripheral neuropathy, tingling, numbness, weakness, and pain in fingers) have also been reported in workers exposed to vinyl chloride.

Reactive Organic Gases (ROG) - Reactive Organic Gases (ROG) are emitted as gases from certain solids or liquids. ROGs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many ROGs are consistently higher indoors (up to ten times higher) than outdoors. ROGs are emitted by a wide array of products numbering in the thousands. Examples include: paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions.

Organic chemicals are widely used as ingredients in household products. Paints, varnishes, and wax all contain organic solvents, as do many cleaning, disinfecting, cosmetic, degreasing, and hobby products. Fuels are made up of organic chemicals. All of these products can release organic compounds while you are using them, and, to some degree, when they are stored.

Health Effects

The ability of organic chemicals to cause health effects varies greatly from those that are highly toxic, to those with no known health effect. As with other pollutants, the extent and nature of the health effect will depend on many factors including level of exposure and length of time exposed. Eye and respiratory tract irritation, headaches, dizziness, visual disorders, and memory impairment are among the immediate symptoms that some people have experienced soon after exposure to some organics. At present, not much is known about what health effects occur from the levels of organics usually found in homes. Many organic compounds are known to cause cancer in animals; some are suspected of causing, or are known to cause, cancer in humans.

3.2 Hazardous Air Pollutants

"Hazardous air pollutants" is a term used by the federal Clean Air Act (CAA) that includes a variety of pollutants generated or emitted by industrial production activities. Called Toxic Air Contaminants (TACs) under the California Clean Air Act of 1988 (CCAA), ten air pollutants have been identified through ambient air quality data as being the most substantial health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders.

Governor Deukmejian signed the Air Toxics Information and Assessment Act (AB 2588) in 1987. The purpose of AB 2588 is to inventory the emissions of air toxics, determine if these emissions are high enough to expose individuals or groups to significant health risk, and to inform the public where there is a significant health risk. The South Coast Air Quality Management District (SCAQMD) has established the following levels of risk determined to be significant for purposes of AB 2588:

1. Maximum incremental cancer risk greater than or equal to 10 in 1 million, or
2. Cancer Burden greater than 0.5 excess cancer cases in areas with greater than 1 in 1 million.
3. Chronic and Acute Hazard Index greater than or equal to 1.0 (project increment).

The requirements of AB 2588 apply to facilities that use, produce, or emit toxic chemicals. Facilities that are subject to the toxic emission inventory requirements of AB 2588 must prepare and submit toxic emission inventory plans and reports and periodically update those reports.

The following provides a discussion of the health effects as a result of the ten HAPs identified in the CCAA as being the most substantial health risks in California.

Acetaldehyde - Acetaldehyde is both directly emitted into the atmosphere and formed in the atmosphere from photochemical oxidation. Sources include combustion processes such as exhaust from mobile sources and fuel combustion from stationary internal combustion engines, boilers, and process heaters.

Acetaldehyde is classified as a federal hazardous air pollutant and as a California TAC. Acetaldehyde is a carcinogen that also causes chronic non-cancer toxicity in the respiratory system. Symptoms of chronic intoxication of acetaldehyde in humans resemble those of alcoholism.

The primary acute effect of inhalation exposure to acetaldehyde is irritation of the eyes, skin, and respiratory tract in humans. At higher exposure levels, erythema, coughing, pulmonary edema, and necrosis may also occur. Acute inhalation of acetaldehyde resulted in a depressed respiratory rate and elevated blood pressure in experimental animals. Tests involving acute exposure of rats, rabbits, and hamsters have demonstrated acetaldehyde to have low acute toxicity from inhalation and moderate acute toxicity from oral or dermal exposure.

Benzene - Approximately 84 percent of the benzene emitted in California comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. Currently, the benzene content of gasoline is less than 1 percent.

Benzene is highly carcinogenic and occurs throughout California. Benzene also has non-cancer health effects. Brief inhalation exposure to high concentrations can cause central nervous system depression. Acute effects include central nervous system symptoms of nausea, tremors, drowsiness, dizziness, headache, intoxication, and unconsciousness.

Neurological symptoms of inhalation exposure to benzene include drowsiness, dizziness, headaches, and unconsciousness in humans. Ingestion of large amounts of benzene may result in vomiting, dizziness, and convulsions in humans. Exposure to liquid and vapor may irritate the skin, eyes, and upper respiratory tract in humans. Redness and blisters may result from dermal exposure to benzene.

Chronic inhalation of certain levels of benzene causes disorders in the blood in humans. Benzene specifically affects bone marrow (the tissues that produce blood cells). Aplastic anemia, excessive bleeding, and damage to the immune system (by changes in blood levels of antibodies and loss of white blood cells) may develop. Increased incidence of leukemia (cancer of the tissues that form white blood cells) has been observed in humans occupationally exposed to benzene.

1,3–Butadiene - The majority of 1,3-butadiene emissions come from incomplete combustion of gasoline and diesel fuels. Mobile sources account for 83 percent of total statewide emissions. Area wide sources such as agricultural waste burning and open burning contribute to approximately 13 percent of statewide emissions.

In California, 1,3-butadiene has been identified as a carcinogen. Butadiene vapors cause neurological effects at very high levels such as blurred vision, fatigue, headache, and vertigo. Dermal exposure of humans to 1,3-butadiene causes a sensation of cold, followed by a burning sensation, which may lead to frostbite.

One epidemiological study reported that chronic (long-term) exposure to 1,3-butadiene via inhalation resulted in an increase in cardiovascular diseases, such as rheumatic and arteriosclerotic heart diseases, while other human studies have reported effects on the blood. A large epidemiological study of synthetic rubber industry workers demonstrated a consistent association between 1,3-butadiene exposure and occurrence of leukemia. Several epidemiological studies of workers in styrene-butadiene rubber factories have shown an increased incidence of respiratory, bladder, stomach, and lymphato-hematopoietic cancers. However, these studies are not sufficient to determine a causal association between

1,3-butadiene exposure and cancer due to possible exposure to other chemicals and other confounding factors.

Carbon Tetrachloride - The primary sources of carbon tetrachloride in California include chemical and allied product manufacturers and petroleum refineries.

In California, carbon tetrachloride has been identified as a carcinogen. Carbon tetrachloride is also a central nervous system depressant and mild eye and respiratory tract irritant. EPA has classified carbon tetrachloride as a Group B2 probable human carcinogen.

Acute inhalation of and oral exposures to high levels of carbon tetrachloride have been observed to damage primarily the liver (swollen, tender, changes in enzyme levels, and jaundice) and kidneys (nephritis, nephrosis, proteinurea) of humans. Depression of the central nervous system has also been reported. Symptoms of acute exposure in humans include headache, weakness, lethargy, nausea, and vomiting. Delayed pulmonary edema (fluid in lungs) has been observed in humans exposed to high levels of carbon tetrachloride by inhalation and ingestion, but this is believed to be due to injury to the kidney rather than the direct action of carbon tetrachloride on the lung. Chronic inhalation of or oral exposure to carbon tetrachloride produces liver and kidney damage in humans and animals.

Hexavalent Chromium - Chromium plating and other metal finishing processes are the primary sources of hexavalent chromium emissions in California. In California, hexavalent chromium has been identified as a carcinogen. There is epidemiological evidence that exposure to inhaled hexavalent chromium may result in lung cancer. The principal acute effects are renal toxicity, gastrointestinal hemorrhage, and intravascular hemolysis.

The respiratory tract is the major target organ for chromium (VI) following inhalation exposure in humans. Other effects noted from acute inhalation exposure to very high concentrations of chromium (VI) include gastrointestinal and neurological effects, while dermal exposure causes skin burns in humans. Chronic inhalation exposure to chromium (VI) in humans results in effects on the respiratory tract, with perforations and ulcerations of the septum, bronchitis, decreased pulmonary function, pneumonia, asthma, and nasal itching and soreness reported. Chronic human exposure to high levels of chromium (VI) by inhalation or oral exposure may produce effects on the liver, kidneys, gastrointestinal and immune systems, and possibly the blood.

Para-Dichlorobenzene - The primary sources of para-dichlorobenzene include consumer products such as non-aerosol insect repellents and solid/gel air fresheners. These sources contribute 99 percent of statewide para-dichlorobenzene emissions.

In California, para-dichlorobenzene has been identified as a carcinogen. Acute exposure to 1,4-dichlorobenzene 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, e.g., cerebellar ataxia, dysarthria, weakness in limbs, and hyporeflexia.

Formaldehyde - Formaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Formaldehyde is a product of incomplete combustion. One of the primary sources of formaldehyde is vehicular exhaust. Formaldehyde is also used in resins, many consumer products (as an antimicrobial agent), and fumigants and soil disinfectants.

The major toxic effects caused by acute formaldehyde exposure via inhalation are eye, nose, and throat irritation and effects on the nasal cavity. Other effects seen from exposure to high

levels of formaldehyde in humans are coughing, wheezing, chest pains, and bronchitis. Chronic exposure to formaldehyde by inhalation in humans has been associated with respiratory symptoms and eye, nose, and throat irritation. Animal studies have reported effects on the nasal respiratory epithelium and lesions in the respiratory system from chronic inhalation exposure to formaldehyde. Occupational studies have noted statistically significant associations between exposure to formaldehyde and increased incidence of lung and nasopharyngeal cancer. This evidence is considered to be "limited" rather than "sufficient," due to possible exposure to other agents that may have contributed to the excess cancers. EPA considers formaldehyde to be a probable human carcinogen (cancer-causing agent) and has ranked it in EPA's Group B1. In California, formaldehyde has been identified as a carcinogen.

Methylene Chloride - Methylene chloride is used as a solvent, a blowing and cleaning agent in the manufacture of polyurethane foam and plastic, and a solvent in paint-stripping operations. Paint removers account for the largest use of methylene chloride in California.

Case studies of methylene chloride poisoning during paint-stripping operations have demonstrated that inhalation exposure to extremely high levels can be fatal to humans. Acute inhalation exposure to high levels of methylene chloride in humans has resulted in effects on the central nervous system, including decreased visual, auditory, and psychomotor functions, but these effects are reversible once exposure ceases. Methylene chloride also irritates the nose and throat at high concentrations. The major effects from chronic inhalation exposure to methylene chloride in humans are effects on the central nervous system, such as headaches, dizziness, nausea, and memory loss. In addition, chronic exposure can lead to bone marrow, hepatic, and renal toxicity. EPA considers methylene chloride to be a probable human carcinogen and has ranked it in EPA's Group B2. California considers methylene chloride to be carcinogenic.

Perchloroethylene - 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, perchloroethylene has been identified as a carcinogen. Perchloroethylene vapors are irritating to the eyes and respiratory tract. Following chronic exposure, workers have shown signs of liver toxicity, as well as kidney dysfunction and neurological disorders.

Diesel Particulate Matter - Diesel particulate matter is emitted from both mobile and stationary sources. In California, on-road, diesel-fueled engines contribute approximately 24 percent of the statewide total, with an additional 71 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about 5 percent of total diesel particulate matter.

Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by the California Office of Environmental Health Hazard Assessment (OEHHA). CARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles.

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and

equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA's assessment, CARB estimates that diesel-particle levels measured in California's air in 2000 could cause 540 "excess" cancers (beyond what would occur if there were no diesel particles in the air) in a population of 1 million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated cancer risks from diesel exhaust that are similar to those developed by OEHHA and CARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Diesel engines are a major source of fine-particle pollution. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. 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, diesel exhaust particles have been identified as a carcinogen.

4.0 ENVIRONMENTAL SETTING AND CLIMATE

4.1 Project Location and Setting

The project site consists of 1.3 acres located at 555 6th Street in the southern portion of the City of Hermosa Beach (City) in southwestern Los Angeles County. The project site is shown in its regional setting in Exhibit A.

Exhibit B provides the location of the project site in its local setting and shows the existing conditions on and in the vicinity of the project site. The project site is located approximately seven blocks east of the beach and the Pacific Ocean and is bounded by the following: to the east by Valley Drive, the Veterans Parkway (Hermosa Valley Greenbelt/Trail), Ardmore Park and, further to the east, by Ardmore Avenue and residential development; to the south by 6th Street, the City Beach Self Storage facility, light manufacturing land uses and, further to the south, South Park and residential development; to the west by light manufacturing land uses, Cypress Street and, further to the west, residential development; and to the north by light manufacturing land uses and, further to the north, residential development and 8th Street.

The project site is owned by the City and is currently used as their City Maintenance Yard. The Project Applicant will lease the project site from the City for the implementation of the proposed project.

The elevation is approximately 50 to 55 feet above sea level.

4.2 Climate

The climate in the Basin generally is characterized by sparse winter rainfall and hot summers tempered by cool ocean breezes. A temperature inversion, a warm layer of air that traps the cool marine air layer underneath it and prevents vertical mixing, is the prime factor that allows contaminants to accumulate in the Basin. The mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds. The climate of the area is not unique, but the high concentration of mobile and stationary sources of air contaminants in the western portion of the Basin, in addition to the mountains, which surround the perimeter of the Basin, contribute to the generally poor air quality in the region.

Temperature affects the air quality of the region in several ways. Local winds are the result of temperature differences between the relatively stable ocean air and the uneven heating and cooling that takes place in the Basin due to a wide variation in topography. Temperature also has a major effect on vertical mixing height and affects chemical and photochemical reaction times.

The annual average temperatures vary little throughout the Basin, averaging 75°F. The coastal areas show little variation in temperature on a year-round basis due to the moderating effect of the marine influence. On average, August is the warmest month while January is the coolest month. Most of the annual rainfall in the Basin falls between November and April. Annual average rainfall varies from nine inches in Riverside to 14 inches in downtown Los Angeles.

Wind flow patterns play an important role in the transport of air pollutants in the Basin. The winds flow from offshore and blow eastward during the daytime hours. In summer, the sea breeze starts in mid-morning, peaks at 10 to 15 miles per hour, and subsides after sundown. There is a calm period until about midnight. At that time, the land breeze begins from the northwest, typically becoming calm again about sunrise. In winter, the same general wind flow patterns exist except that summer wind speeds average slightly higher than winter wind speeds. This pattern of low wind speeds is another factor that allows pollutants to accumulate in the Basin.

The normal wind patterns in the Basin are interrupted by the unstable air accompanying the passing of storms during the winter and infrequent strong northeasterly Santa Ana wind flows from the mountains and deserts north of the Basin.

The project site is located approximately 0.3 of a mile from the shoreline of the Pacific Ocean, which heavily influences the climate. Average monthly temperatures at nearby weather monitoring stations located at the Los Angeles Airport and in the City of Torrance range from a low of 44.3 degrees in January to a high of 78.6 degrees in August. [1]

4.3 South Coast Air Basin

The California Air Resources Board (CARB) has divided California into 15 regional air basins according to topographic features. The project site is located in the South Coast Air Basin (Basin), which is a sub-area within the South Coast Air Quality Management District (SCAQMD) jurisdiction. The SCAQMD consists of the four-county Basin (Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties), the

[1] Western Regional Climate Center, http://www.wrcc.dri.edu/summary/Climsmsca.html

Riverside County portions of the Salton Sea Air Basin, and the Mojave Desert Air Basin.

The Basin is currently designated as non-attainment for PM_{10}, $PM_{2.5}$, and ozone for both state and federal standards, non-attainment for the state NO_2 standards, and the Los Angeles County portion of the Basin is designated as non-attainment for the state and federal lead standards. However, the SCAQMD is seeking redesignation of the Basin to attainment for the federal PM_{10} standard. The Basin is classified as attainment for both the federal and state standards for CO and SO_2 and as attainment for the federal standards for NO_2. The Basin is classified as attainment for the state standard for sulfates.

4.4 Existing Air Quality

The SCAQMD measures ambient pollutant levels using a network of approximately 30 monitoring stations. (See Exhibit F) The three closest active monitoring stations maintained by the SCAQMD are located in Compton, West Los Angeles, and North Long Beach.

Tables 2, 3, and 4 provide summaries of the maximum pollutant levels detected at these monitoring stations from 2009 through 2011. Exhibit G contains copies of reports for each monitoring station.

Table 2: Maximum Pollutant Levels - Compton Station – 700 North Bullis Rd.

Pollutant	Averaging Time	Units	Maximums			Standards	
			2009	2010	2011	State	National
Ozone (O_3)	1 hour	ppm	0.104	0.081	0.082	0.09	—
	8 hour	ppm	0.087 (CA) 0.086 (Fed)	0.062 (CA) 0.062 (Fed)	0.065 (CA) 0.066 (Fed)	0.07	0.075
Nitrogen Dioxide (NO_2)	1 hour	ppm	0.092	0.077	0.075	0.18	—
	Annual Average	ppm	0.021	0.018	0.019	0.030	0.053
Particulates (PM_{10})	24 hour	$\mu g/m^3$	70.0 (CA) 73.0 (Fed)	144.8 (CA) 154.0 (Fed)	67.0 (CA) 68.0 (Fed)	50	150
	Annual Average	$\mu g/m^3$	— (CA) — (Fed)	— (CA) — (Fed)	— (CA) — (Fed)	20	—
Particulates ($PM_{2.5}$)	24 hour	$\mu g/m^3$	69.2 (CA) 69.2 (Fed)	38.2 (CA) 38.2 (Fed)	35.3 (CA) 35.3 (Fed)	—	35
	Annual Average	$\mu g/m^3$	14.7 (CA) 14.6 (Fed)	— (CA) 12.5 (Fed)	13.0 (CA) 12.9 (Fed)	12	15

Source: CARB Website, 2012
Notes: ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
— = not reported
SO_2 is not monitored at the Compton station

Table 3: Maximum Pollutant Levels – West Los Angeles – Westchester Parkway Station

Pollutant	Averaging Time	Units	Maximums			Standards	
			2009	2010	2011	State	National
Ozone (O_3)	1 hour	ppm	0.077	0.089	0.078	0.09	—
	8 hour	ppm	0.070 (CA) 0.070 (Fed)	0.070 (CA) 0.070 (Fed)	0.067 (CA) 0.067 (Fed)	0.07	0.075
Nitrogen Dioxide (NO_2)	1 hour	ppm	0.077	0.076	0.098	0.18	—
	Annual Average	ppm	—	0.012	0.013	0.030	0.053
Particulates (PM_{10})	24 hour	$\mu g/m^3$	52.0 (CA) 52.0 (Fed)	37.0 (CA) 37.0 (Fed)	41.0 (CA) 41.0 (Fed)	50	150
	Annual Average	$\mu g/m^3$	25.5(CA) 26.6 (Fed)	— (CA) 20.6 (Fed)	21.4 (CA) 21.7 (Fed)	20	—
Particulates ($PM_{2.5}$)	24 hour	$\mu g/m^3$	69.2 (CA) 69.2 (Fed)	38.2 (CA) 38.2 (Fed)	35.3 (CA) 35.3 (Fed)	—	35
	Annual Average	$\mu g/m^3$	14.7 (CA) 14.6 (Fed)	— (CA) 12.5 (Fed)	13.0 (CA) 12.9 (Fed)	12	15
SO_2	24 hour	$\mu g/m^3$	0.006 (CA)	0.004 (CA)	0.002 (CA)	24	—
	Annual Average	$\mu g/m^3$	— (CA)	0.000 (CA)	0.000 (CA)	—	—

Source: CARB Website, 2012
Notes: ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
— = not reported

Table 4: Maximum Pollutant Levels – North Long Beach Station

Pollutant	Averaging Time	Units	Maximums			Standards	
			2009	2010	2011	State	National
Ozone (O_3)	1 hour	ppm	0.089	0.101	0.073	0.09	—
	8 hour	ppm	0.067 (CA) 0.067 (Fed)	0.084 (CA) 0.084 (Fed)	0.062 (CA) 0.061 (Fed)	0.07	0.075
Nitrogen Dioxide (NO_2)	1 hour	ppm	0.111	0.093	0.106	0.18	—
	Annual Average	ppm	0.021	0.020	0.018	0.030	0.053
Particulates (PM_{10})	24 hour	$\mu g/m^3$	62.0 (CA) 76.9 (Fed)	44.0 (CA) 44.0 (Fed)	43.0 (CA) 43.0 (Fed)	50	150
	Annual Average	$\mu g/m^3$	25.5(CA) 26.6 (Fed)	— (CA) 20.6 (Fed)	24.1 (CA) 21.7 (Fed)	20	—
Particulates ($PM_{2.5}$)	24 hour	$\mu g/m^3$	63.0 (CA) 63.0 (Fed)	35.0 (CA) 35.0 (Fed)	39.7 (CA) 39.7 (Fed)	—	35
	Annual Average	$\mu g/m^3$	— (CA) 12.8 (Fed)	— (CA) 10.3 (Fed)	— (CA) 11.3 (Fed)	12	15
SO_2	24 hour	$\mu g/m^3$	0.005 (CA)	0.006 (CA)	0.004 (CA)	24	—
	Annual Average	$\mu g/m^3$	— (CA)	0.001 (CA)	— (CA)	—	—

Source: CARB Website, 2012
Notes: ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
— = not reported

4.5 Sensitive Receptors

Some groups of people are more affected by air pollution than others. CARB has identified the following people who are likely to be affected by air pollution: children under 14; the elderly over 65; athletes; and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. The closest sensitive receptor to the project site are located at an after school child care center operated by the Hermosa Beach School District at the South Park, located 255 feet south of the project site.

5.0 REGULATORY SETTING

5.1 Air Quality Regulations

The federal, state, and local air quality regulations are identified below in further detail. Air quality within Los Angeles County is addressed through the efforts of various federal, State, and regional and local government agencies. These agencies work together, as well as individually, to improve air quality through legislation, regulations, planning, and policy-making aimed at regulating air pollutants of concern as defined under the Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA). The agencies and legislation responsible for improving air quality within the Los Angeles County are discussed below.

Federal

The FCAA governs air quality in the United States and is administered by the EPA. In addition to administering the FCAA, the EPA is also responsible for setting and enforcing the NAAQS for atmospheric pollutants as discussed above. As a part of its enforcement responsibilities, the EPA requires each state with non-attainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution. These measures need to incorporate performance standards and market-based programs that can be met within the timeframe identified in the SIP.

State

CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs in California. In this capacity, the CARB conducts research, sets CAAQS, compiles emission inventories, develops suggested control measures, and prepares the SIP. For example, the CARB establishes emissions standards for motor vehicles sold in California, consumer products (e.g., hair spray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. In addition, CARB oversees the functions of the local air pollution control districts and the air quality management districts, which in turn administer air quality at the regional and county level.

Regional

The project site is under the jurisdiction of the SCAQMD, which has regulatory authority over pollutant emissions from stationary sources and limited authority over mobile sources of pollutants. The SCAQMD is responsible for air quality planning in the Basin and other areas within the jurisdiction of the District and developing and updating the Air Quality Management Plan (AQMP). The AQMP establishes the strategies that will be used to achieve compliance with the NAAQS and the CAAQS in all areas within the SCAQMD's jurisdiction.

The SCAQMD has developed regulations to limit emissions of various pollutants. Some regulations that may apply to the proposed project include: Regulation II – Permits; Regulation III – Fees; Rule 462 – Organic Liquid Loading; Rule 463 – Organic Liquid Storage; Regulation IX – New Source Performance Standards; Regulation XI – Source Specific Standards (including Rule 1166 - Volatile Organic Compound Emissions from Decontamination of Soil and Rule 1178; Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities); Regulation XIII – New Source Review; Regulation XIV – New Source Review of Carcinogenic Air Contaminants (including Rule 1401 – New Source Review of Toxic Air Contaminants; and Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities); Regulation XX – RECLAIM Program; and Regulation XXX – Title V Permits.

Local

Local jurisdictions, including the City of Hermosa Beach, City of Redondo Beach, the City of Torrance, and the South Bay Cities Council of Governments (SBCCOG), have the authority and responsibility to reduce air pollution through its policies and decision-making authority.

6.0 IMPACTS OF THE PROPOSED PROJECT

6.1 Thresholds of Significance

Criteria Pollutants and Toxic Air Contaminants

The SCAQMD California Environmental Quality Act (CEQA) Guidelines establish the thresholds of significance for the evaluation of criteria pollutants and TACs consistent with CEQA. Table 5 provides the thresholds of significance used in the analysis of the potential air quality impacts of the proposed project.

Localized Significance Thresholds

Localized significance thresholds (LST's) were developed in response to Governing Board's Environmental Justice Enhancement Initiative I-4 and the methodology for calculation of significance thresholds for NOx and CO were formally approved by SCAQMD's Mobile Source Committee in February 2005. On October 6, 2006, the SCAQMD Governing Board unanimously adopted a methodology to calculate $PM_{2.5}$ and $PM_{2.5}$ significance thresholds.

Table 5: SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds[a]		
Pollutant	**Construction[b]**	**Operation[c]**
NOx	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM10	150 lbs/day	150 lbs/day
PM2.5	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants[d]		
NO_2 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)	
PM_{10} 24-hour average annual average	10.4 ug/m^3 (construction)[e] & 2.5 ug/m^3 (operation)	
$PM_{2.5}$ 24-hour average	10.4 ug/m^3 (construction)[e] & 2.5 ug/m^3 (operation)	
SO_2 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 ug/m^3 (state)	
CO 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
Lead 30-day Average Rolling 3-month average Quarterly average	1.5 ug/m^3 (state) 0.15 ug/m^3 (federal) 1.5 ug/m^3 (federal)	

[a] Source: SCAQMD CEQA Handbook (SCAQMD, 1993)

[b] Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).

[c] For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

[d] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

[e] Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day ppm = parts per million ug/m^3 = microgram per cubic meter ≥ = greater than or equal to
> = greater than

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Table 6: SCAQMD Air Quality Localized Significance Thresholds for Southwest Coastal LA County – Source Receptor Area 3

Source/Receptor Area	Allowable Emissions as a Function of Receptor Distance (pounds per day)				
	25 meters	50 meters	100 meters	200 meters	500 meters
NOx[a]					
1-acre sites	91	93	107	139	218
2-acre sites	147	143	156	186	262
CO[a]					
1-acre sites	664	785	1,156	2,228	7,269
2-acre sites	967	1,158	1,597	2,783	7,950
PM10 /PM2.5 Operations[b]					
1-acre sites	1	4	7	14	34
2-acre sites	2	6	9	16	36
PM10 /PM2.5 for Construction[c]					
1-acre sites	3	5	9	21	75
2-acre sites	5	7	12	25	81

a. NOx and CO thresholds for operations and construction. SCAQMD SCAQMD Final LST Methodology Document, Appendix C. http://www.aqmd.gov/ceqa/handbook/LST/LST.html#Appendix%20C
b. Significance Threshold of 2.5 mg/m3 Allowable emissions (lbs/day) as a function of receptor distance (meters) from boundary of site. SCAQMD Final LST Methodology Document, Appendix C. http://www.aqmd.gov/ceqa/handbook/LST/LST.html#Appendix%20C
c. Significance Threshold of 10.4 ug/m3 Allowable emissions (lbs/day) as a function of receptor distance (meters) from boundary of site. SCAQMD Final Methodologies to CalculatePM2.5 and PM2.5 Significance Thresholds, Appendix B. http://www.aqmd.gov/ceqa/handbook/PM2_5/PM2_5.html

6.2 Model Assumptions

The short-term construction emissions and long-term operational emissions were determined utilizing the CalEEMod model based on the assumptions identified in Exhibits H, I and J. Emissions from ongoing operation of stationary sources were calculated using the assumptions identified in Exhibits L and M. Emissions are tabulated in Exhibit N.

6.3 Short-Term Construction Air Emissions

The implementation of the proposed project would generate short-term increases in air emissions from construction activities including drilling of the wells. These construction activities have the potential to result in air emissions that could exceed the SCAQMD's thresholds of significance and, therefore, result in an increase of ozone precursors (ROG and NO_x) and PM_{10} for which the Basin is not in nonattainment.

The major construction activities occur in the four non-overlapping phases listed below:

- Phase 1 – Site Preparation
- Phase 2 – Drilling and Testing
- Phase 3 – Final Design and Construction
- Phase 4 - Development and Operations

The construction activities on the project site would generate emissions that primarily consist of: fugitive dust (PM_{10} and $PM_{2.5}$) from soil disturbance during grading and soil remediation; exhaust emissions (including NO_x, SOx, CO, ROG, PM_{10}, and $PM_{2.5}$) from construction equipment and motor vehicle operation.

The construction activities that would occur off-site include: installation of offsite utilities in Phase 1; construction of improvements to the intersection at 6th Street and Valley Drive in Phase 1; and construction of off-site pipelines for transporting the processed oil and gas in Phase 3. Additional offsite activities that would generate emissions include: deliveries of construction equipment, production equipment, and building materials and supplies to the project site; and the transport of construction employees to and from the project site. The off-site activities would generate emissions that primary consist of ROG, NO_x, PM_{10}, $PM_{2.5,}$ and CO from motor vehicle exhaust and PM_{10} and $PM_{2.5,}$ from transportation, grading, and construction of the utility, intersection and pipeline improvements. The construction emissions would vary from day to day, depending on the level of activity and the specific type of operation.

Tables 7, 8, 9 and 10 provide the short-term construction emissions generated for each phase of the project by construction activities. The construction equipment used in the CalEEMod model and the CalEEMod model outputs are included in Exhibits I and J respectively. The following provides a discussion of the potential short-term impacts for each phase of the proposed project.

Phase 1 – Site Preparation

Site Preparation would have the following construction activities that would generate short-term local and regional air emissions:

- Relocation of existing overhead utilities underground along Valley Drive and at the intersection of 6th Street and Valley Drive
- Construct redesigned intersection of 6th Street and Valley Drive to accommodate larger trucks
- Relocation of the City Maintenance Yard activities to another property selected by the City
- Installation of movable temporary 16-foot high sound attenuation wall to reduce the noise generated during demolition and construction
- Clearance of the project site including removal and/or demolition of three onsite buildings, two trailers, storage containers, trash bins, a propane tank, concrete paving and asphalt, fencing, and masonry walls
- Removal one mature tree along Valley Drive
- Construction of retaining walls along the entire length of the western property boundary and a small length along 6th Street
- Conduct minimal rough grading of the project site to allow for: the construction of a well cellar for three exploratory oil wells and a water injection well; a change in grade to drain towards the well cellar in the event of a spill or rainfall; the movement of the drill rig; and the installation of temporary production equipment
- Installation of a six-foot high temporary perimeter chain link construction fence with green fabric material
- Construction of the well cellar for the three exploratory oil wells and one water injection well
- Installation of underground conduit in Valley Drive from 8th Street to the northeast corner of the project site (a distance of 270 linear feet) to allow for the provision of required electrical service by Southern California Edison

- Installation of the necessary electrical equipment on the project site for the drilling and testing of the wells
- Removal of the movable temporary 16-foot high sound attenuation wall
- Installation of temporary landscaping along Valley Drive and 6th Street
- Coverage of the ground with crushed aggregate based material to serve as the driving surface that inhibits dust
- At the completion of Phase 1, installation of a 32-foot high sound attenuation wall erected inside of the chain link construction fence

As seen in Table 7, the daily emissions from Phase 1 construction activities would not exceed the SCAQMD threshold of significance for regional emissions. Localized Significance Thresholds (LST) are not exceeded for PM_{10} emissions that occur at the project site. The total onsite PM_{10} emissions of 2.8 pounds per day are less than the LST of 3 pounds per day. Therefore, the short-term impacts to regional and local air quality as a result of construction activities for Phase 1 of the proposed project would be less than significant.

Table 7: Short-term Construction Emissions – Phase 1 – Site Preparation

Source	Pollutant lbs/day					
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_x
2014 Construction Emissions	2.7	18.80	13.58	6.63	1.40	0.03
SCAQMD CEQA (Regional) Threshold	75	100	550	150	55	150
Is Regional Threshold Exceeded?	No	No	No	No	No	No
Localized Significance Threshold	---	91	664	3	3	---
Is Localized Threshold Exceeded?	---	No	No	No (see note)	No	---

Notes: ROG = reactive organic gases
CO = carbon monoxide
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter < 10 microns
MT = Metric Tons
Refer to Exhibit J for a printout of the model used in this analysis.
The LST for PM_{10} is not exceeded for emissions that occur onsite. The total onsite emissions are equal to 2.8 lbs/day.

Phase 2 – Drilling and Testing

Drilling and Testing would have the following construction activities that would generate short-term local and regional air emissions:

- Installation of a temporary construction trailer with associated utilities on the project site
- Delivery and set up of the drill rig and its associated equipment to the project site (drill rig would be electric and equipped with noise attenuation material)
- Installation of temporary oil, water, and gas handling equipment
- Drilling of three test oil wells utilizing directional drilling technology which enables the wells to be drilled laterally for long distances so that the bottom-hole locations may be located several thousand feet from the surface location of the well head on the project site.
- Drilling of one water injection well for the reinjection of processed produced water into the oil producing reservoir

- Drilling to occur 24 hours per day, 7 days per week until the appropriate depths and hole-bottom locations have been reached (estimated to be 30 days per well)
- Remove drill rig from project site immediately after drilling the four wells

As seen in Table 8, the daily emissions from Phase 2 construction activities (drilling of wells) would not exceed the SCAQMD threshold of significance for regional emissions. LSTs are not exceeded for PM10 emissions that occur at the project site. The total onsite PM10 emissions 0.91 pounds per day are less than the LST of 3 pounds per day. Therefore, the short-term impacts to local and regional air quality as a result of construction activities for Phase 2 of the proposed project would be less than significant.

Table 8: Short-term Construction Emissions – Phase 2 – Drilling and Testing

Source	Pollutant lbs/day					
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	SOx
2014 Construction Emissions	2.20	19.46	15.46	18.85	0.97	0.03
2015 Construction Emissions	1.49	9.07	5.30	1.58	0.42	0.02
SCAQMD Threshold	75	100	550	150	55	150
Is Regional Threshold Exceeded?	No	No	No	No	No	No
Localized Significance Threshold	---	91	664	3	3	---
Is Localized Threshold Exceeded?	---	No	No	No (see note)	No	---

Notes: ROG = reactive organic gases
CO = carbon monoxide
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter < 10 microns
MT = Metric Tons
Refer to Exhibit J for a printout of the model used in this analysis.
The LST for PM_{10} is not exceeded for emissions that occur onsite. The total onsite emissions are equal to 0.91 lbs/day. The majority of PM10 emissions are related to offsite transportation of construction related materials and equipment.

Phase 3 – Final Design and Construction

Final Design and Construction would have the following construction activities that would generate short-term local and regional air emissions:

- Removal of the temporary production equipment from the project site
- Removal of the three remaining mature trees along Valley Drive
- Replacement of the 32-foot high sound attenuation wall with a movable 16-foot high sound attenuation wall to reduce the noise generated during construction
- Implementation of the Remedial Action Plan to address the lead and Total Petroleum Hydrocarbon contaminated soil prior to the final grading of the project site (includes export of approximately 9,000 cubic yards of contaminated soil)
- Construction of retaining wall along portions of the eastern and southern property boundary
- Conduct final grading
- Construction of the extension of the first well cellar and the construction of the second well cellar
- Construction of a 16-foot high split-face block wall around the perimeter of the project site with a 10-foot setback along Valley Drive and 6th Street
- Removal of the 16-foot high sound attenuation wall

- Construction of a small office building to house staff and provide facilities for the control and monitoring equipment
- Installation of the permanent oil and gas production equipment
- Installation of permanent site utilities consisting of telephone, water, and sewer
- Construction of the final site improvements related to the site access and paving of the ground surface area
- Construction of street improvements including new curbs, gutters, and sidewalks and installation of landscaping along Valley Drive and 6th Street
- Construction of off-site pipelines for transporting the processed oil and gas to their respective buyers (See the discussion below)
- Set conductor pipe
- Installation of a 32-foot high sound attenuation wall to reduce the noise generated during drilling of the remaining wells that would occur in Phase 4

Offsite Gas Pipeline

An offsite underground pipeline for the transport of gas would be constructed for a distance of 0.43 mile in the right-of-way (ROW) of southbound Valley Drive (which is one-way starting on 2nd Street) in the City of Hermosa Beach to a tie in to a Southern California Gas (SCG) gas line in the Southern California Edison (SCE) Utility Corridor east of N. Francisca Avenue in the City of Redondo Beach. Exhibit E provides the conceptual alignment of the proposed offsite underground gas pipeline and the adjacent land uses. The gas pipeline would consist of two parallel pipelines, four inches in diameter, and located at a depth of approximately 3.5 to 4 feet below ground surface (bgs) within the road ROW until it ties into the SCG line at a proposed metering station immediately to the east of N. Francisca Avenue. The pipeline would be a loop system that allows for the gas to be returned to the project site for further treatment in the event that the produced gas did not meet SCG standards. The metering station site, which would be provided as a part of the proposed project, would be approximately 40 by 60 feet in size and surrounded by an 8-foot high block wall.

Offsite Oil Pipeline

An offsite underground pipeline for the transport of oil to a valve box location in the City of Torrance would to be constructed for a maximum distance of approximately 3.55 miles in one of three potential pipeline scenarios that would traverse through the Cities of Hermosa Beach, Redondo Beach, and Torrance. The pipeline would be eight inches or less in diameter, located at a depth of approximately 3.5 to 4 feet bgs depending on the grade. At one of four potential valve box locations, the pipeline would tie-in to an existing pipeline that transports oil to a refinery. Exhibit E provides the conceptual alignments of the three oil pipeline scenarios, the four valve box location options, the respective jurisdictional boundaries, and the adjacent land uses.

Total Phase 3 Emissions

As seen in Table 9, the daily PM_{10} emissions from Phase 3 construction activities would exceed the SCAQMD threshold of significance for regional emissions. The majority of PM_{10} emissions are associated with the transportation of contaminated soils to an offsite disposal facility (onroad, offsite emissions). Contaminated soils will be generated by the soil remediation activities that are part Phase 3. Therefore, the short-term impacts to regional air quality as a result of construction activities for Phase 3 of the proposed project would be significant.

Maximum daily emissions of PM_{10} and $PM_{2.5}$ from onsite construction activities are 2.81 and 1.53 pounds per day respectively, and therefore less than the LST of 3 pounds per day. The

majority of PM_{10} emissions are associated with transportation of contaminated soil to an offsite disposal facility (on-road, offsite emissions). Therefore, the short-term impacts to local air quality as a result of construction activities for Phase 3 of the proposed project would be less than significant.

Table 9: Short-term Construction Emissions – Phase 3 – Final Design and Construction

Source	Pollutant lbs/day					
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	SOx
2015 Construction Emissions - Facility	8.50	64.38	44.3	125.54	3.48	0.12
2015 Construction Emissions – Pipeline	3.92	26.80	19.83	26.80	1.92	0.04
Total	***12.42***	***91.18***	***64.13***	***152.34***	***5.40***	***0.16***
2016 Construction Emissions - Facility	6.65	38.50	34.50	3.18	2.39	0.06
2016 Construction Emissions – Pipeline	3.64	24.79	19.23	26.64	1.76	0.04
Total	***10.29***	***63.29***	***53.73***	***29.82***	***4.15***	***0.10***
SCAQMD Threshold	75	100	550	150	55	150
Is Regional Threshold Exceeded?	No	No	No	Yes	No	No
Localized Significance Threshold	---	91	664	3	3	---
Is Localized Threshold Exceeded?	---	No (See note)	No	No (See note)	No (See note)	---

Notes: ROG = reactive organic gases
CO = carbon monoxide
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter < 10 microns
MT = Metric Tons
Refer to Exhibit J for a printout of the model used in this analysis.
Localized Significance Thresholds for NOx are not exceed for facility (onsite) construction emissions (maximum daily emissions are 64.38 lb/day) nor for offsite pipeline construction emissions (maximum daily emissions are 26.80 lb/day).
PM_{10} localized significance thresholds are not exceeded for onsite facility construction emissions (2.81 lbs/day) The balance of the PM_{10} construction emissions are related to on-road hauling of contaminated soils.
$PM_{2.5}$ localized significance thresholds are not exceeded for pipeline construction. PM_{10} localized significance thresholds are not exceeded for pipeline construction (1.53 lb/day).. The majority of PM_{10} emissions are associated with hauling of removed soil (on-road, offsite emissions).

Phase 4 – Development and Operations

Development and Operations would have the following construction activities that would generate short-term local and regional air emissions:

- Delivery and set up of the drill rig and associated equipment to the project site (drill rig would be electric and equipped with noise attenuation equipment)
- Drilling of the remaining 27 oil wells and three water injection well (resulting in a total of 30 oil and gas wells and 4 water injection wells)
- Drilling to occur 24 hours per day, 7 days per week until the appropriate depths and bottom-hole levels have been reached (estimated to be up to 130 weeks)
- Removal of drill rig from project site immediately after completion of drilling the remaining wells
- Removal of the 32-foot high sound attenuation wall from the project site after completion of drilling

As seen in Table 10, the daily emissions from Phase 4 construction activities (drilling of wells) would not exceed the SCAQMD threshold of significance for regional emissions. Air dispersion modeling indicates that PM_{10} and $PM_{2.5}$ emissions from construction do not exceed the construction LST of 10.4 ug/m^3 or the operational LST of 2.25 ug/m^3. Therefore, the short-term impacts to local and regional air quality as a result of construction activities, including when it occurs simultaneously with operations, for Phase 4 of the proposed project would be less than significant.

Table10: Short-term Construction Emissions – Phase 4 – Development and Operations

Source	Pollutant lbs/day					
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	SOx
Construction Emissions						
2016	1.91	14.37	10.17	1.39	0.58	0.03
2017	1.80	12.93	9.72	1.34	0.53	0.03
2018	1.70	11.64	9.34	1.29	0.44	0.03
SCAQMD Threshold	75	100	550	150	55	150
Is Regional Threshold Exceeded?	No	No	No	No	No	No
Localized Significance Threshold	---	91	664	3	3	---
Is Localized Threshold Exceeded?	---	No	No	No[1]	No[1]	---

[1] Includes construction and operational emissions
Notes: ROG = reactive organic gases
CO = carbon monoxide
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter < 10 microns
MT = Metric Tons
Refer to Exhibit J for a printout of the model used in this analysis.

6.4 Operational Air Emissions

The implementation of the proposed project would generate long-term emissions caused by mobile sources (vehicle emissions), well maintenance equipment (offroad emissions), and emissions from stationary sources from processing of produced oil, gas and water. These have the potential to result in air emissions that could exceed the SCAQMD's thresholds of significance and, therefore, result in an increase in pollutants for which the Basin is in nonattainment. The following provides a discussion of the long-term operational emissions for each phase of the proposed project.

Mobile Source and Area Source - Ozone Regional Emissions

The predicted emissions associated with vehicular traffic (mobile sources) are not subject to the SCAQMD's permit requirements. However, the SCAQMD is responsible for overseeing efforts to improve air quality within the Basin. The SCAQMD reviews land use changes to evaluate the potential impact on air quality. The SCAQMD has established a CEQA significance level for ROG, NO_x, and $PM_{2.5}$ of 55 pounds per day each, for PM_{10} and SOx of 150 pounds per day each, and for CO of 550 pounds per day. (See Table 6) For purpose of this analysis, these are referred to as the SCAQMD thresholds of significance in Tables 11 and 12 below.

Area, Energy, and Mobile source emissions have been estimated using the CalEEMod[2] computer model from the SCAQMD. CalEEMod predicts CO, ROG, NO_x, SO_x, and particulate matter emissions associated with new or modified land uses. CalEEMod modeling results are contained in Exhibit J and summarized in Tables 11 and 12 and the discussion provided below. As seen in Tables 11 and 12, emissions from the operation of the proposed project in Phase 2 and 4 would not exceed the SCAQMD thresholds of significance.

No operational emissions are associated with Phase 1 – Site Preparation, or Phase 3 – Final Design and Construction.

Phase 2 – Drilling and Testing

Drilling and Testing would have the following operational activities that would generate long-term local and regional air emissions:

- Commence production and testing after the completion of the first test well
- Reinjection of processed produced water into the oil producing reservoir
- Trucking of the crude oil to an offsite destination
- Elimination of the produced gas through burning in a gas combustor

As seen in Table 11, the daily emissions from Phase 2 operational activities would not exceed the SCAQMD threshold of significance for regional emissions. Air dispersion modeling indicates that PM_{10} emissions from operation do not exceed the operational LST of 2.25 ug/m^3. Therefore, the long-term impacts to local and regional air quality as a result of operational activities for Phase 2 of the proposed project would be less than significant.

Table 11: Operational Emissions – Phase 2 - Drilling and Testing

Source	Pollutant lbs/day					
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_x
Area	1.48	0	0	0	0	0
Energy	0	0	0	0	0	0
Mobile	0.48	4.35	2.95	0.39	0.21	0.00
Stationary Source	6.68	4.66	9.58	2.0	2.0	0.74
Total	8.6	9.0	12.5	2.4	2.2	0.7
SCAQMD Threshold	55	55	550	150	55	150
Is Regional Threshold Exceeded?	No	No	No	No	No	No
Localized Significance Threshold	---	91	664	1	1	---
Is Localized Threshold Exceeded?	---	No	No	No (after modeling)	No (after modeling)	---

Notes: ROG = reactive organic gases
CO = carbon monoxide
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter < 10 microns
MT = Metric Tons
Refer to Exhibits J and O and for a printout of the model used in this analysis.

[2] © 2011 SCAQMD

Phase 4 – Development and Operations

Development and Operations would have the following operational activities that would generate long-term local and regional air emissions:

- Operation of the permanent oil production equipment and transport of the oil and gas by pipeline to their respective destinations
- Conduct ongoing maintenance including workover and well redrill activities (up to 90 days per year)

As seen in Table 12, the daily emissions from Phase 4 operational activities would not exceed the SCAQMD threshold of significance for regional emissions. Air dispersion modeling indicates that PM_{10} and $PM_{2.5}$ emissions from operation do not exceed the operational LST of 2.25 ug/m^3. Therefore, the long-term impacts to local and regional air quality as a result of operational activities for Phase 4 of the proposed project would be less than significant.

Table 12: Operational Emissions – Phase 4 – Development and Operations

Source	Pollutant lbs/day					
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_x
Area	1.48	0.0	0.0	0.0	0.0	0.0
Energy	0.0	0.0	0.0	0.0	0.0	0.0
Mobile	0.03	0.09	0.31	0.08	0.01	0.00
Stationary Source	22.6	49.5	99.8	41.8	41.8	7.7
Waste	0.0	0.0	0.0	0.0	0.0	0.0
Water	0.0	0.0	0.0	0.0	0.0	0.0
Total	24.1	49.6	100.1	41.9	41.8	7.70
SCAQMD Threshold	55	55	550	150	55	150
Is Regional Threshold Exceeded?	No	No	No	No	No	No
Localized Significance Threshold	---	91	664	1	1	---
Is Localized Threshold Exceeded?	---	No	No	No (after modeling)	No (after modeling)	---

Notes: ROG = reactive organic gases
CO = carbon monoxide
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter < 10 microns
MT = Metric Tons
Refer to Exhibits J and O for a printout of the model used in this analysis..

Carbon Monoxide Local Emissions – Mobile Source (Vehicle) and Stationary Source

CO emissions are a function of vehicle idling time and, thus, under normal meteorological conditions, depend on traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations close to a congested roadway or intersection may reach unhealthful levels affecting sensitive receptors (residents, school children, hospital patients, the elderly, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at an unacceptable Level of Service (LOS). CO “Hot Spot” modeling is required if a traffic study reveals that the proposed project will reduce the LOS on one or more streets to E or F; or, if the proposed project will worsen an existing LOS F.

A traffic study prepared by Arch Beach Consulting, November 2012, indicates that the proposed project would not reduce the LOS to E or F at any roadway segment or intersection during construction or operation. (Exhibit P)

Therefore, the long-term impacts to local air quality due to CO concentrations will be less than significant.

6.5 Potential Effect on Sensitive Receptors

The air quality impact of the proposed project is not likely to affect sensitive receptors. Sensitive receptors are areas where young children, chronically ill individuals, or other individuals more sensitive than the general population are located. Examples of sensitive receptors are schools, day care centers, and hospitals. Some residents in nearby residential areas may also be considered sensitive receptors.

The potential ambient air quality emissions from this proposed project are related to increases in traffic and stationary source combustion emissions. As discussed above, traffic emissions resulting from the proposed project are not expected to result in localized impacts such as CO “Hot Spots”.

Ground-level CO concentrations from stationary source combustion emissions were determined using the air dispersion model AERMOD. Maximum CO emissions from the stationary source are expected to occur during Phase 4 of the proposed project when the microturbines and gas combustor are operating at the same time. Maximum 1-hour ground-level concentrations of CO were calculated to be 11.77 ug/m^3 (0.01 part per million by volume[ppmv]). According to the SCAQMD, background CO concentration at the Long Beach air monitoring station were 5.1 ppmv in 2010 and are projected to be 5.1 ppmv in 2015. Based on this, the increase in CO emissions resulting from the proposed project are not expected to result in localized impacts such as CO “Hot Spots” and are not expected to impact nearby sensitive receptors. Therefore, the potential impacts to sensitive receptors will be less than significant.

6.6 Odors

An odor is caused by one or more volatilized chemical compounds, generally in low concentrations. In an oil and gas production facility, such as the proposed project, an odor is produced by the release of material that contains small amounts of sulfur compounds, hydrocarbons, or odorizer. Several compounds associated with the oil and gas industry can produce nuisance odors. Sulfur compounds, found in oil and gas, have very low odor threshold levels. Using a panel of testers, the odor threshold level is the value at which 50% of the panelists can just detect the odor. For instance, hydrogen sulfide (H_2S) can be detected as an odor by humans at low levels of concentrations from between 0.5 parts per billion (ppb) (detected by 2 percent of the population) to 40 ppb where it is qualified as annoying by 50 percent of the population. Above these levels an odor from H_2S would be detected by most people.

Many volatile compounds found in oil and gas (pentane, n-pentane, hexane, ethane and longer chain hydrocarbons) also typically have a petroleum or gasoline odor with varying odor thresholds. The most odiferous of these compounds are hexane, which has an odor threshold of between 68 and 248 ppm, and pentane, with an odor threshold of 2 ppm. Natural gas contains mostly methane, which is odorless, so it is odorized as dictated by law before entering a transmission pipeline. The various odorizing compounds contain sulfur

compounds and have very low odor thresholds and can produce odors if released into the atmosphere.

Odor events could occur due to several different situations associated with production equipment or drilling upset conditions. The equipment components could leak and cause odors. Tanks are equipped with hatches to protect them from overpressure. If these hatches lift due to a failure of the vapor recovery compressor odor events could occur. During drilling, drilling muds, well kicks, and releases from increased pressure up the wellbore could cause odor events. During drilling, pockets of gas can be encountered. This can be picked up by the circulating muds, brought to the surface and released through the muds processing system.

This project will include the production and treating of natural gas. Available data indicates that low levels of potential "native" H_2S, in the order of 0.0 to 6.0 parts per million (ppm), may be encountered in the gas from the underground reservoir. Without appropriate design features, activities such as drilling and operations result in potential odor events, causing a nuisance to the local community. In addition, the release of material that contains even small amounts of sulfur compounds or hydrocarbons can produce an odor.

Odor events can be addressed for oil development facilities in urban areas with design features that direct odor-causing releases to vapor recovery units (VRU) or flare-type (gas combustor) systems and through the use of odor masking materials, ongoing leak detection inspections, and systems to notify operators when releases could or do occur.

The proposed project would include design features to maintain a leak free system that would minimize potential odor sources. The proposed project would be designed to be a closed-loop system. A closed-loop system is a design criterion that does not allow for the venting or emitting of fluids into the atmosphere as part of the normal operation of the facility. All tanks and process vessels would be connected to a vapor recovery unit (VRU). Instead of venting gases directly to the atmosphere, they are vented to the VRU. The VRU separates the liquids from the gases and recycles both back into the system. The system is designed to be self-contained and not vent to atmosphere. In upset conditions where it may not be possible to send vapors to the VRU system the vapors would be directed to the gas combustor. In addition, all relief valves on tanks, vessels and piping would be directed to the gas combustor.

The proposed project would include a computerized safety system that would closely monitor the closed-loop system providing early warnings, corrective actions, and shutdowns, if necessary, to address any events that would be encountered that would result in leaks to the atmosphere. Corrective actions would be provided by a series of safety devices installed within the piping, vessels, and tanks along the entire system. In addition, redundancy would be built into the system to provide an extra level of protection, ensuring there would be a backup for each safety device. Each device would be strategically placed to provide early warning, corrective action, or shut down of a specific segment of the system or the entire facility, if necessary. All safety devices would be tested on a regular basis by qualified operators and audited by the regulatory agencies. Highly trained operators would be onsite 24 hours per day, seven days per week, to monitor all aspects of the proposed project operations.

The components of the proposed project would be inspected for fugitive emissions as required by SCAQMD rule 1173 "Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants." This requires that every valve, threaded connection, coupling, and site glass be inspected. The proposed project

would accept a limitation on allowable leaking components more stringent that those required by Rule 1173. In addition, Rule 1173 also requires daily inspection of compressors, pumps, and pressure relief devices and inspection of all other components at least quarterly. Newer technology such as thermal imagery devices would be utilized for the proposed project to augment traditional methods of leak detection.

The proposed project would utilize a SCAQMD-approved gas combustor for immediate use during production operations for upset conditions. The gas combustor and odor suppressants during drilling would eliminate the odor events associated with mud vapors and drilling gasses. Equipment would be installed to separate entrained gasses from the drilling fluids for destruction in the gas combustor to prevent odors.

The proposed project would have an Odor Minimization Plan. The Odor Minimization Plan would address potential sources of odors from all equipment, including wells and drilling operation, and provide measures to reduce or eliminate these odors (e.g., containment, design modifications, carbon canisters). The Plan would include facility information, signs with contact information, logs of odor complaints, and the protocol for handling odor complaints and odor event investigations and methods instituted to prevent a re-occurrence.

The proposed project would have an Air Monitoring Plan. The Plan would provide for the monitoring of total hydrocarbon vapors and hydrogen sulfide throughout the project site. At all times during drilling and redrilling operations, the Operator would maintain monitoring equipment that would monitor and digitally record the levels of hydrogen sulfide and total hydrocarbon vapors. Monitors installed within and at the edge of the facility would provide automatic alarms (audible or visible to the operator) that would be triggered by the detection of hydrogen sulfide or total hydrocarbon vapors. A meteorological station to monitor wind speed and direction under the guidance and specification of the SCAQMD would be installed at an applicable location.

The proposed project would use an odor suppressant spray system or vapor capture hood and carbon filter system on the mud shaker tables and would install carbon capture canisters on all tanks (permanent and portable) that are not equipped with vapor recovery, containing potentially odiferous materials for all drilling operations so that no odor can be detected at the closest receptor.

With the implementation of these design features the possibility of odor events would be minimized or eliminated. Although odor events could still occur, the number of odor events would most likely be reduced to less than the SCAQMD definition of a “nuisance.” Therefore, the potential impact as a result of the creation of objectionable odors affecting a substantial number of people would be less than significant.

8.0 MITIGATION MEASURES

The proposed project generates air pollutant emissions associated with the construction and operation of the proposed project. The Applicant would implement the applicable requirements of SCAQMD Rule 403 (Fugitive Dust) during construction and operation phases; and SCAQMD Rule 1166 (Volatile Organic Compound Emissions from Decontamination of Soil) will be implemented during onsite remediation of contaminated soils. In addition, the proposed project would have the potential to generate odor. The application would implement the applicable requirements of SCAQMD Rule 1173. Therefore, upon compliance with the applicable SCAQMD rules, no additional mitigation measures would be recommended.

9.0 REFERENCES

California Air Resources Board (CARB), website for background information, http://www.arb.ca.gov/

California Department of Transportation (Caltrans), *Transportation Project-Level Carbon Monoxide Protocol,* December 1997.

Caltrans, *Caltrans Interim Guidance: Project-Level* PM_{10} *Hot-Spot Analysis,* February 2000.

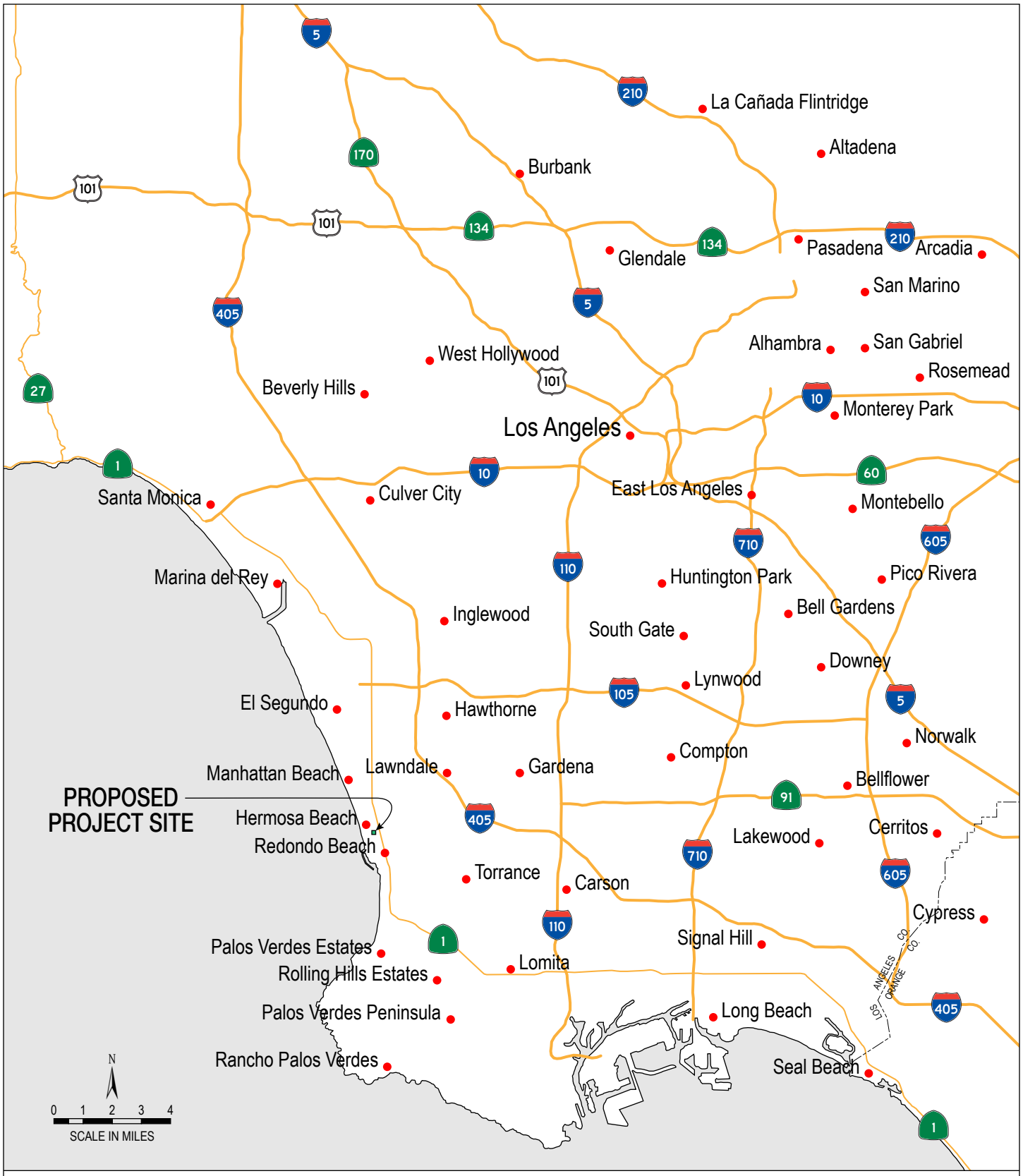
Caltrans, *User's Guide for CL4: A User Friendly Interface for the CALINE-4 Model for Transportation Project Impact Assessments,* June 1998.

South Coast Air Quality Management District (AQMD) Air Quality Analysis Guidance Handbook, under revision.

Southern California Association of Governments (SCAG), SB 375 Regional Implementation Process, http://www.scag.ca.gov/sb375/index.htm

EXHIBIT A

LOCATION MAP



Source: Northcutt & Associates; Google Earth aerial dated March 7, 2011.

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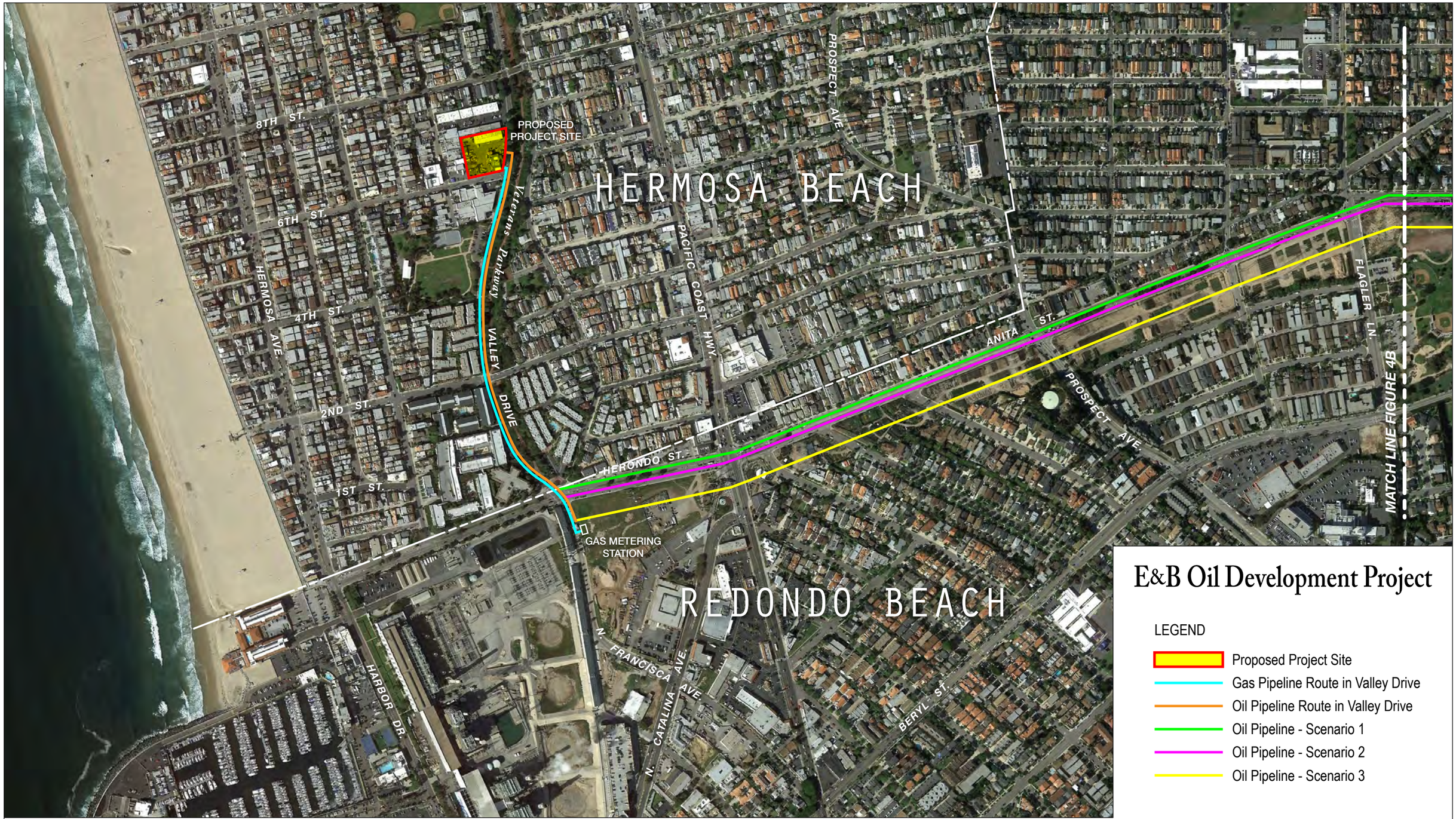
Figure 1
Regional Location

E&B Oil Development Project

EXHIBIT B

PROJECT LOCATION MAP



E&B Oil Development Project

LEGEND

- Proposed Project Site
- Gas Pipeline Route in Valley Drive
- Oil Pipeline Route in Valley Drive
- Oil Pipeline - Scenario 1
- Oil Pipeline - Scenario 2
- Oil Pipeline - Scenario 3

Source: E&B Natural Resouces Management, October 2012; Google Earth aerial dated March 7, 2011.

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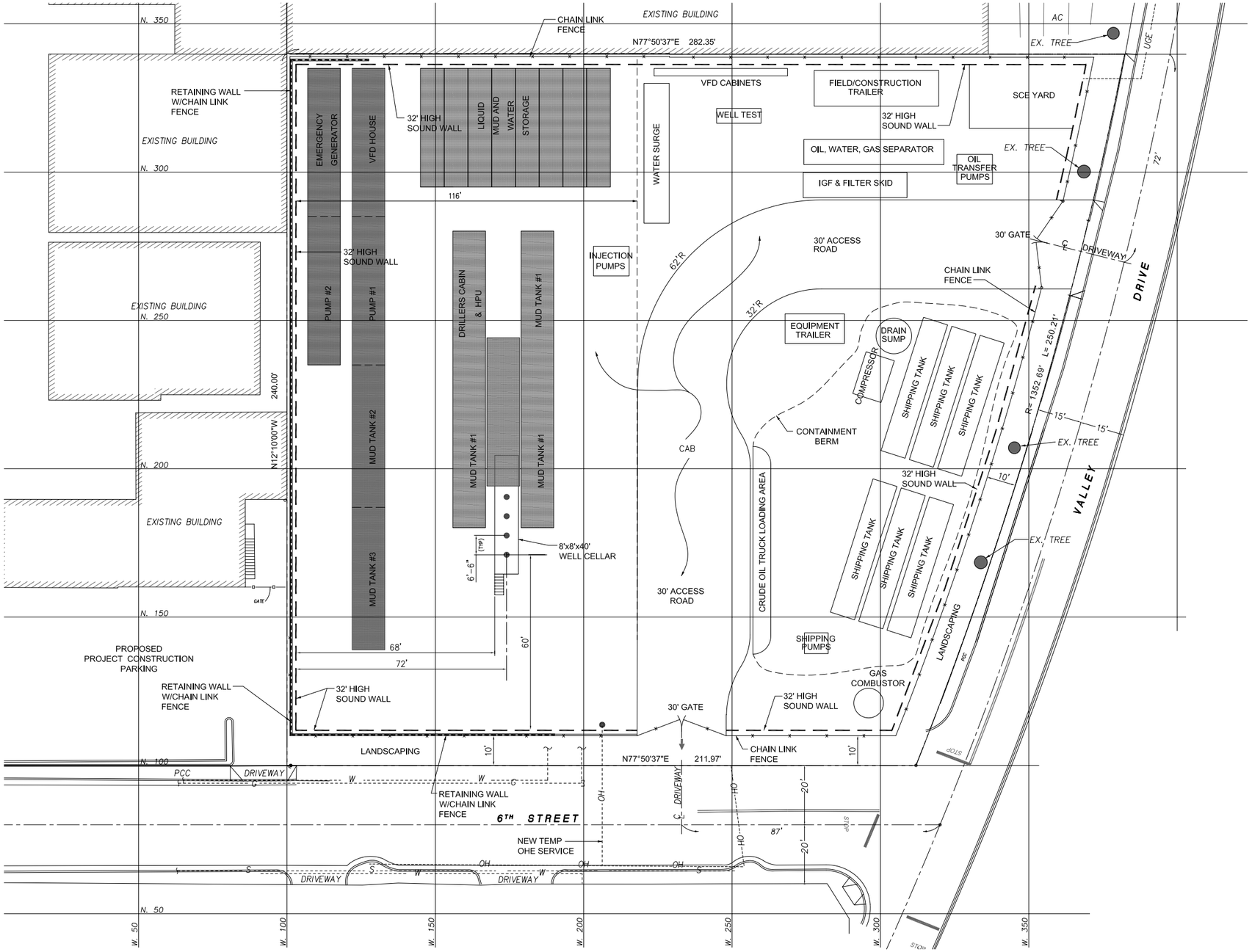
Figure 4A
Conceptual Locations of Gas and Oil Pipeline Scenarios

EXHIBIT C

PHASE 1 AND 2 CONCEPTUAL SITE PLAN



E&B Oil Development Project

LEGEND

G	Gas
W	Water
CAB	Crushed Aggregate Base
OHE	Overhead Electrical
UGE	Underground Electrical
— —	32' Sound Wall
▬▬	New Retaining Wall
— - —	Property Line
—×—	Chain Link Fence
●	Well Site

Source: Processes Unlimited International, Inc., September 12, 2012.

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0 10 20 40 60
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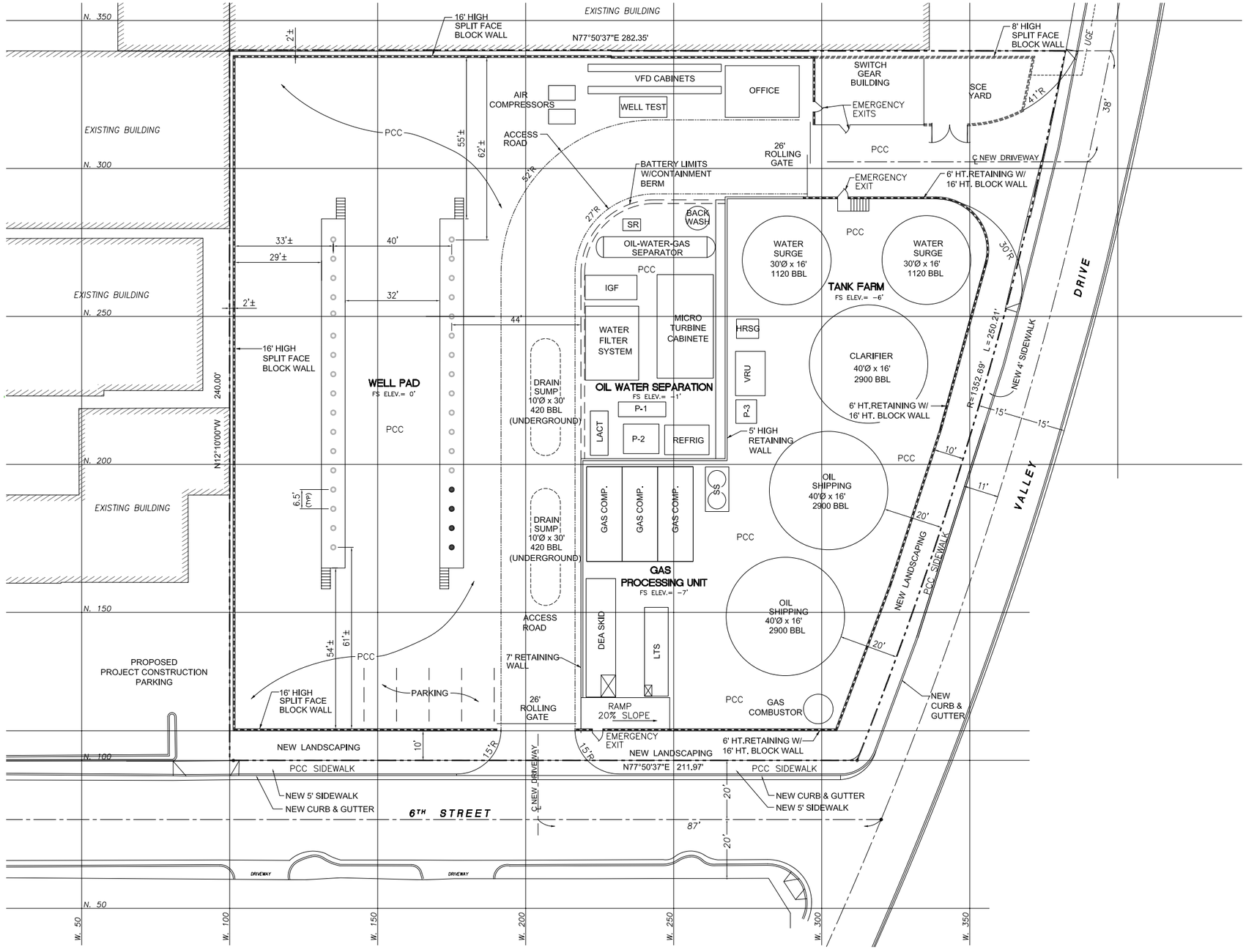
Figure 16
Phase 2: Drilling and Testing Conceptual Site Plan (with Drill Rig)

EXHIBIT D

PHASE 3 AND 4 CONCEPTUAL SITE PLAN



E&B Oil Development Project

LEGEND

IGF	Induced Gas Flotation Oil Removal
VRU	Vapor Recovery Unit
LACT	Lease Automatic Custody Transfer
HRSG	Heat Recovery Steam Generator
UGE	Underground Electrical
P−1	Oil/Water/Gas Separation Pumps
P−2	Water Injection Pumps
P−3	Oil Shipping Pumps
PCC	Portland Cement Concrete
DEA	Diethanolamine CO_2 Removal Heated Equipment
LTS	Low Temperature Separation Water Removal Heated Equipment
SS	H_2S Removal
SR	Solids Removal
●	Existing Well Site
○	Future Well Site
	Access Road
	16' High Split-Face Block w/wo Retaining Wall
	8' High Split-Face Block Wall
	Property Line

Source: Processes Unlimited International, Inc., September 12, 2012.

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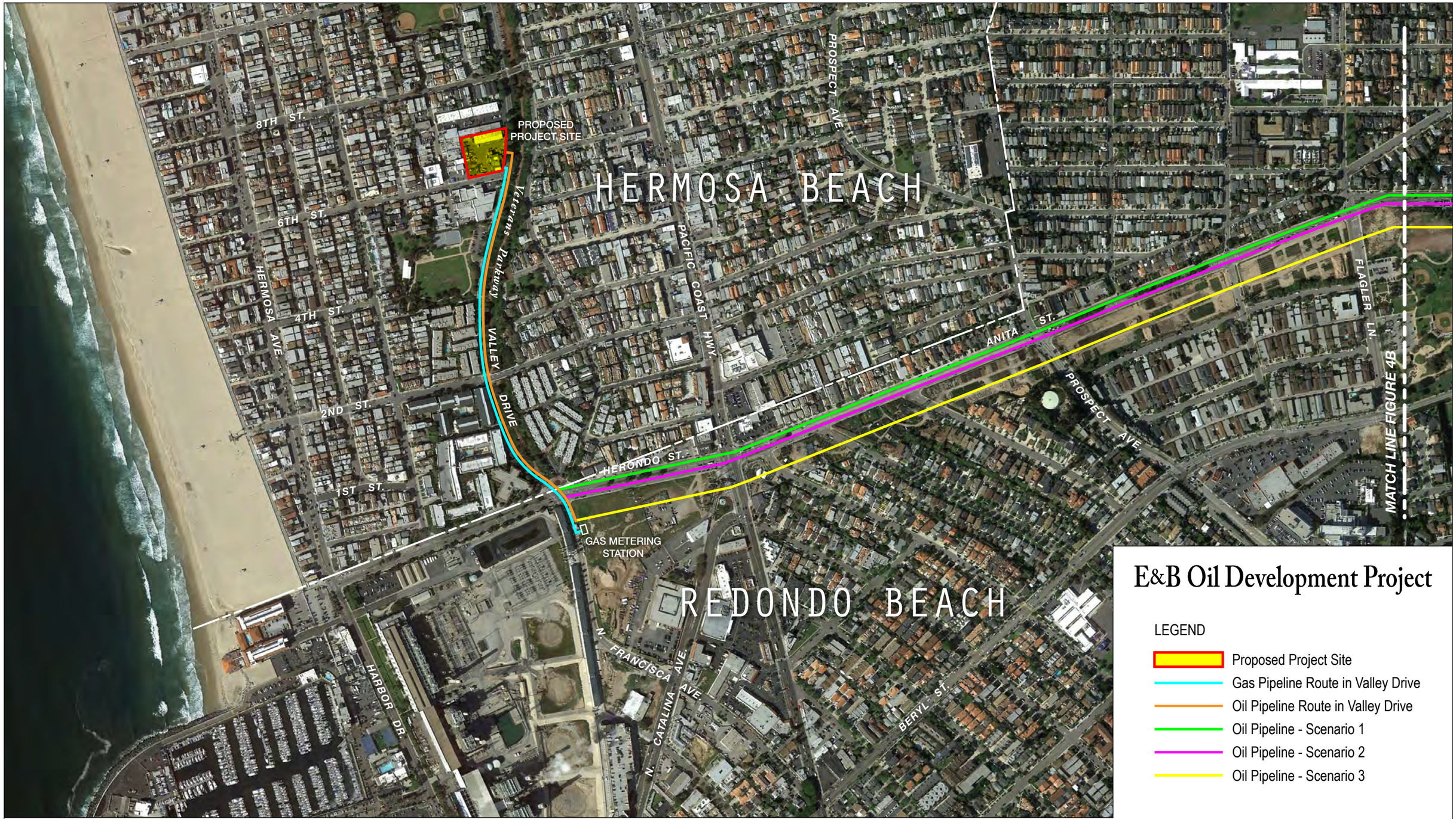
Figure 19
Phase 3: Final Design and Construction Conceptual Site Plan

EXHIBIT E

PIPELINE ALIGNMENT SCENARIOS



E&B Oil Development Project

LEGEND

- Proposed Project Site
- Gas Pipeline Route in Valley Drive
- Oil Pipeline Route in Valley Drive
- Oil Pipeline - Scenario 1
- Oil Pipeline - Scenario 2
- Oil Pipeline - Scenario 3

Source: E&B Natural Resouces Management, October 2012; Google Earth aerial dated March 7, 2011.

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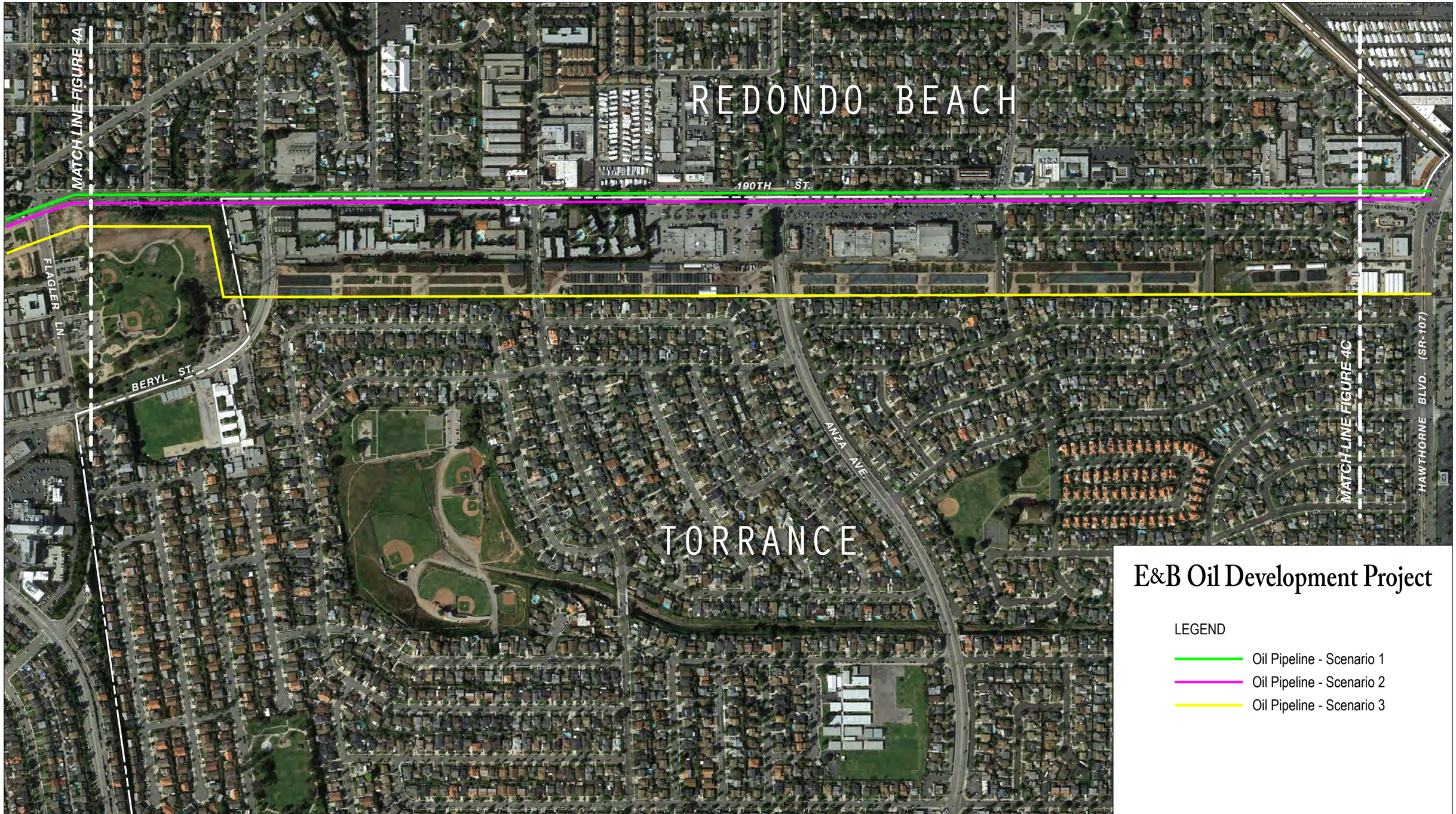
Figure 4A
Conceptual Locations of Gas and Oil Pipeline Scenarios



E&B Oil Development Project

LEGEND

- Oil Pipeline - Scenario 1
- Oil Pipeline - Scenario 2
- Oil Pipeline - Scenario 3

Source: E&B Natural Resouces Management, October 2012; Google Earth aerial dated March 7, 2011.

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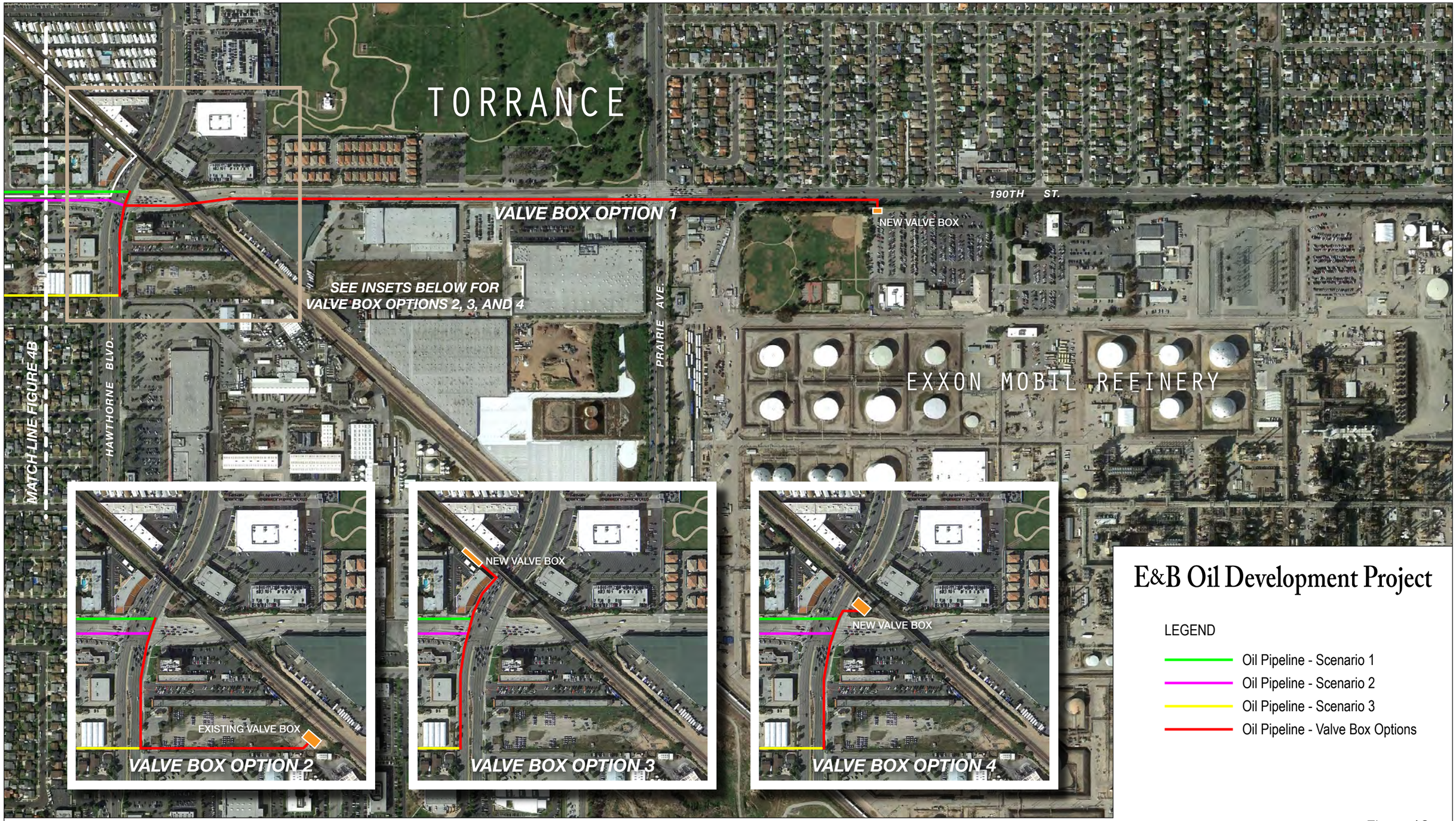
Figure 4B
Conceptual Locations of Gas and Oil Pipeline Scenarios



E&B Oil Development Project

LEGEND

- Oil Pipeline - Scenario 1
- Oil Pipeline - Scenario 2
- Oil Pipeline - Scenario 3
- Oil Pipeline - Valve Box Options

Source: E&B Natural Resouces Management, October 2012; Google Earth aerial dated March 7, 2011.

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Figure 4C
Conceptual Locations of Gas and Oil Pipeline Scenarios

EXHIBIT F

AIR BASIN MONITORING STATIONS

Figure 16a. South Coast Air Basin Monitoring Stations - Los Angeles County (2007-2009)

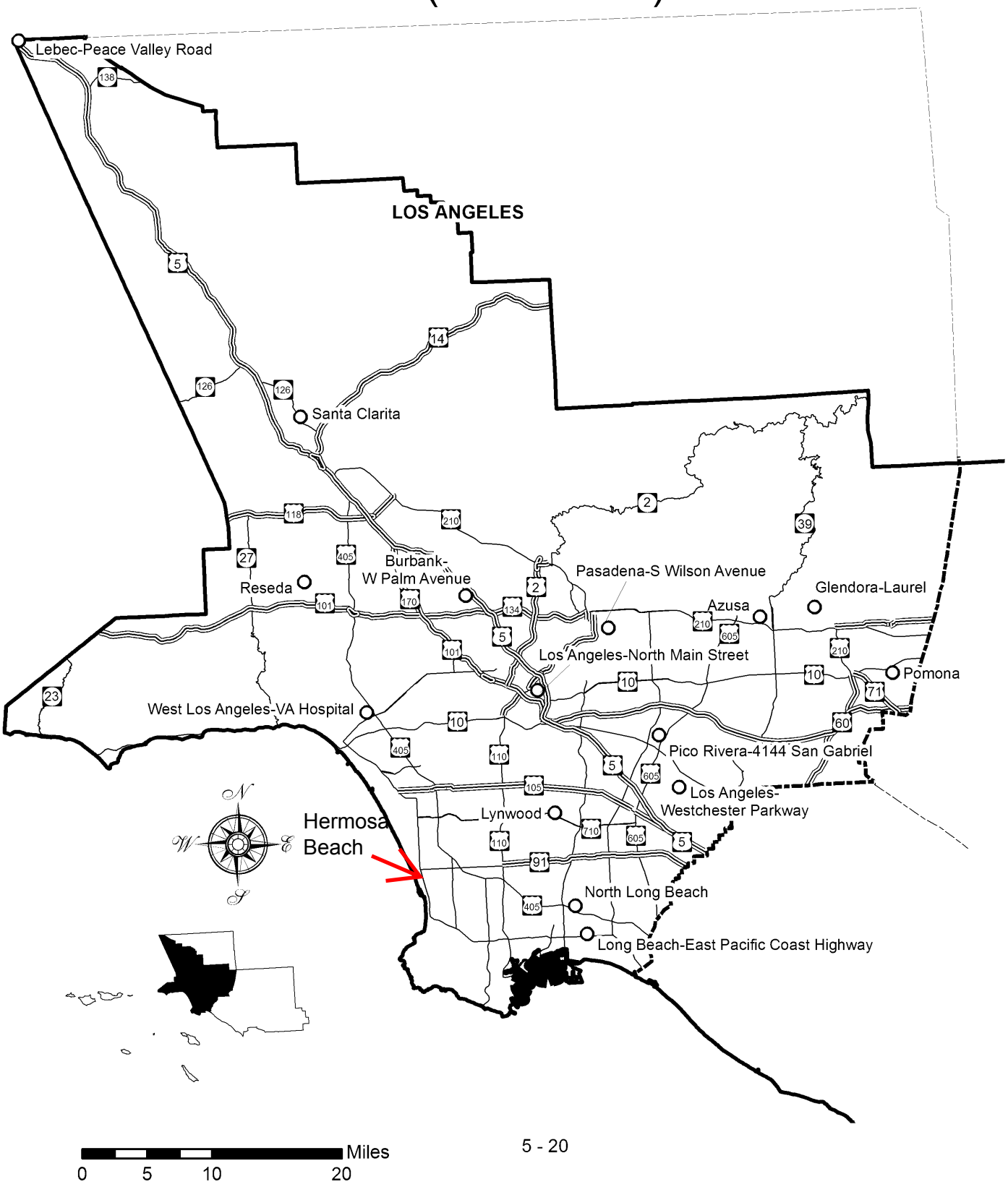

EXHIBIT G

AIR MONITORING STATION DATA

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Carbon Monoxide Averages

at Los Angeles-Westchester Parkway

iADAM

	2009		2010		2011	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Nov 26	1.99	Jan 8	2.19	Nov 29	1.79
Second High:	Jan 16	1.89	Jan 7	2.15	Dec 25	1.64
Third High:	Jan 10	1.83	Dec 3	1.88	Nov 30	1.61
Fourth High:	Nov 25	1.79	Jan 15	1.73	Jan 17	1.55
California:						
First High:	Nov 26	1.99	Jan 8	2.19	Nov 29	1.79
Second High:	Jan 16	1.89	Jan 7	2.15	Dec 25	1.64
Third High:	Jan 10	1.83	Dec 3	1.88	Nov 30	1.61
Fourth High:	Nov 25	1.79	Jan 15	1.73	Jan 17	1.55
National:						
# Days Above the Standard:		0		0		0
California:						
# Days Above the Standard:		0		0		0
Expected Peak Day Concentration:		2.25		2.24		2.08
Year Coverage:		96		94		96

Notes:

Eight-hour carbon monoxide averages and related statistics are available at Los Angeles-Westchester Parkway between 2004 and 2011. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Los Angeles-Westchester Parkway

iADAM

	2009		2010		2011	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jan 12	0.077	Sep 27	0.076	Jan 17	0.098
Second High:	Nov 24	0.076	Sep 26	0.074	Dec 9	0.076
Third High:	Jan 14	0.071	Nov 5	0.071	Jan 18	0.072
Fourth High:	Jan 15	0.069	Dec 3	0.067	Jan 14	0.071
California:						
# Days Above the Standard:		0		0		0
Annual Average:		*		0.012		0.013
Year Coverage:		69		95		98

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Los Angeles-Westchester Parkway between 2004 and 2011. Some years in this range may not be represented.

All concentrations expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Top 4 Summary: Highest 4 Daily Maximum State 24-Hour Sulfur Dioxide Averages

at Los Angeles-Westchester Parkway

iADAM

	2009		2010		2011	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
First High:	Jan 10	0.006	Dec 13	0.004	Mar 31	0.002
Second High:	May 4	0.006	Jan 31	0.002	Jan 17	0.002
Third High:	May 6	0.006	May 13	0.002	Jan 14	0.002
Fourth High:	May 1	0.006	Apr 9	0.002	Jan 16	0.001
Annual Average:		*		0.000		0.000
Year Coverage:		59		94		94

Notes:

Hourly sulfur dioxide measurements and related statistics are available at Los Angeles-Westchester Parkway between 2004 and 2011. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Carbon Monoxide Averages

at North Long Beach

	2009		2010		2011	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Jan 29	2.17	Dec 3	2.08	Dec 25	2.56
Second High:	Jan 15	2.14	Jan 8	2.07	Dec 24	2.39
Third High:	Jan 10	2.09	Jan 6	1.70	Dec 10	2.17
Fourth High:	Jan 7	2.04	Jan 11	1.67	Dec 27	2.03
California:						
First High:	Jan 29	2.17	Dec 3	2.08	Dec 25	2.56
Second High:	Jan 15	2.14	Jan 8	2.07	Dec 24	2.39
Third High:	Jan 10	2.09	Jan 6	1.70	Dec 10	2.16
Fourth High:	Jan 7	2.04	Jan 11	1.67	Dec 27	2.03
National:						
# Days Above the Standard:		0		0		0
California:						
# Days Above the Standard:		0		0		0
Expected Peak Day Concentration:		2.76		2.56		2.35
Year Coverage:		91		98		99

Notes:

Eight-hour carbon monoxide averages and related statistics are available at North Long Beach between 1963 and 2011. Some years in this range may not be represented.
All averages expressed in parts per million.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at North Long Beach

iADAM

	2009		2010		2011	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Apr 19	0.067	Sep 26	0.084	Apr 30	0.061
Second High:	Aug 27	0.066	Sep 25	0.062	May 4	0.061
Third High:	Apr 18	0.065	Oct 10	0.061	May 3	0.060
Fourth High:	Apr 21	0.064	May 7	0.056	Oct 23	0.059
California:						
First High:	Apr 19	0.067	Sep 26	0.084	May 4	0.062
Second High:	Aug 27	0.067	Sep 25	0.063	Apr 30	0.061
Third High:	Apr 18	0.066	Oct 10	0.061	May 3	0.060
Fourth High:	Apr 21	0.064	May 7	0.057	Oct 23	0.060
National:						
# Days Above the Standard:		0		1		0
Nat'l Standard Design Value:		0.061		0.061		0.059
National Year Coverage:		94		98		94
California:						
# Days Above the Standard:		0		1		0
California Designation Value:		0.068		0.067		0.066
Expected Peak Day Concentration:		0.072		0.072		0.066
California Year Coverage:		93		96		93

Notes:

Eight-hour ozone averages and related statistics are available at North Long Beach between 1978 and 2011. Some years in this range may not be represented.
All averages expressed in parts per million.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at North Long Beach

iADAM

	2009		2010		2011	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Nov 2	0.111	May 3	0.093	Sep 7	0.106
Second High:	Nov 3	0.098	Sep 27	0.092	Oct 30	0.079
Third High:	Oct 23	0.088	Feb 1	0.077	Oct 13	0.075
Fourth High:	Oct 16	0.079	Sep 24	0.076	Nov 29	0.071
California:						
# Days Above the Standard:		0		0		0
Annual Average:		0.021		0.020		0.018
Year Coverage:		85		97		81

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at North Long Beach between 1963 and 2011. Some years in this range may not be represented.
All concentrations expressed in parts per million.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at North Long Beach

iADAM

	2009		2010		2011	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Aug 27	0.089	Sep 26	0.101	May 4	0.073
Second High:	Apr 21	0.087	Sep 27	0.077	Sep 7	0.072
Third High:	Aug 26	0.080	Sep 25	0.075	Sep 6	0.070
Fourth High:	Apr 18	0.074	Oct 10	0.074	Apr 15	0.069
California:						
# Days Above the Standard:		0		1		0
California Designation Value:		0.09		0.09		0.08
Expected Peak Day Concentration:		0.087		0.087		0.079
National:						
# Days Above the Standard:		*0*		*0*		*0*
Nat'l Standard Design Value:		*0.089*		*0.089*		*0.080*
Year Coverage:		94		98		95

Notes:

Hourly ozone measurements and related statistics are available at North Long Beach between 1978 and 2011. Some years in this range may not be represented.
All concentrations expressed in parts per million.
The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics*.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at North Long Beach

	2009		2010		2011	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jan 1	63.0	Dec 5	35.0	Dec 31	39.7
Second High:	Dec 25	40.9	Jan 7	29.8	Oct 30	36.8
Third High:	Nov 8	40.6	Dec 3	29.8	Dec 25	35.4
Fourth High:	Jan 2	37.8	Dec 4	29.8	Nov 1	31.9
California:						
First High:	Jan 1	63.0	Dec 5	35.0	Dec 31	39.7
Second High:	Dec 25	40.9	Jan 7	29.8	Dec 25	35.4
Third High:	Nov 8	40.6	Dec 3	29.8	Dec 27	31.2
Fourth High:	Jan 2	37.8	Dec 4	29.8	Nov 17	28.8
National:						
Estimated # Days > 24-Hour Std:		6.0		0.0		2.0
Measured # Days > 24-Hour Std:		6		0		2
24-Hour Standard Design Value:		38		33		30
24-Hour Standard 98th Percentile:		34.1		27.3		28.8
Annual Standard Design Value:		13.9		12.4		11.5
Annual Average:		12.8		10.3		11.3
California:						
Annual Std Designation Value:		*		*		*
Annual Average:		*		*		*
Year Coverage:		100		100		100

Notes:

Daily PM2.5 averages and related statistics are available at North Long Beach between 1999 and 2011. Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.
An exceedance of a standard is not necessarily related to a violation of the standard.
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

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Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at North Long Beach

	2009		2010		2011	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jan 30	76.9	Jan 2	44.0	Nov 17	43.0
Second High:	Jan 9	47.2	Apr 26	41.0	Dec 29	42.0
Third High:	Nov 24	46.1	Feb 1	38.0	Apr 15	39.0
Fourth High:	Jan 10	43.4	Aug 24	36.0	Oct 30	39.0
California:						
First High:	Jan 1	62.0	Jan 2	44.0	Nov 17	43.0
Second High:	Jan 7	55.0	Apr 26	41.0	Dec 29	42.0
Third High:	Jan 13	55.0	Feb 1	38.0	Apr 15	39.0
Fourth High:	Oct 28	49.0	Aug 24	35.0	Oct 30	39.0
National:						
Estimated # Days > 24-Hour Std:	*			0.0		0.0
Measured # Days > 24-Hour Std:	0			0		0
3-Yr Avg Est # Days > 24-Hr Std:	*			0.0		0.0
Annual Average:	*20.4*			*22.0*		*24.2*
3-Year Average:	*			*27*		*26*
California:						
Estimated # Days > 24-Hour Std:	19.2			*		0.0
Measured # Days > 24-Hour Std:	3			0		0
Annual Average:	30.2			*		24.1
3-Year Maximum Annual Average:	30			30		30
Year Coverage:	0			93		99

Notes:

Daily PM10 averages and related statistics are available at North Long Beach between 1989 and 2011. Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.
The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics*.
An exceedance of a standard is not necessarily related to a violation of the standard.
All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.
State and national statistics may differ for the following reasons:
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and

national statistics may therefore be based on different samplers.

State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.

State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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Top 4 Summary: Highest 4 Daily Maximum State 24-Hour Sulfur Dioxide Averages

at North Long Beach

iADAM

	2009		2010		2011	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
First High:	Apr 13	0.005	Feb 1	0.006	Sep 7	0.004
Second High:	Jan 22	0.005	Aug 2	0.005	Aug 28	0.004
Third High:	Apr 21	0.003	Jul 30	0.005	Jul 5	0.003
Fourth High:	Feb 21	0.003	Aug 4	0.005	Mar 31	0.002
Annual Average:		*		0.001		*
Year Coverage:		86		94		79

Notes:

Hourly sulfur dioxide measurements and related statistics are available at North Long Beach between 1963 and 2011. Some years in this range may not be represented.
All averages expressed in parts per million.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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Top 4 Summary: Highest 4 Daily Maximum 8-Hour Carbon Monoxide Averages

at Compton-700 North Bullis Road

iADAM

	2009		2010		2011	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Jan 15	4.61	Dec 9	3.58	Dec 25	4.67
Second High:	Dec 19	4.47	Dec 3	3.57	Jan 16	3.83
Third High:	Jan 10	4.31	Nov 14	3.52	Dec 24	3.70
Fourth High:	Nov 26	4.19	Jan 7	3.39	Jan 17	3.69
California:						
First High:	Jan 14	4.61	Dec 9	3.58	Dec 24	4.67
Second High:	Dec 19	4.47	Dec 3	3.57	Jan 15	3.83
Third High:	Jan 10	4.31	Nov 13	3.52	Jan 17	3.69
Fourth High:	Nov 25	4.19	Jan 7	3.39	Dec 23	3.58
National:						
# Days Above the Standard:		0		0		0
California:						
# Days Above the Standard:		0		0		0
Expected Peak Day Concentration:		*		4.69		4.72
Year Coverage:		95		98		97

Notes:

Eight-hour carbon monoxide averages and related statistics are available at Compton-700 North Bullis Road between 2008 and 2011. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at Compton-700 North Bullis Road

iADAM

	2009		2010		2011	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Aug 30	0.086	Oct 10	0.062	May 4	0.065
Second High:	Aug 27	0.069	Aug 18	0.054	Aug 15	0.062
Third High:	Aug 18	0.065	Aug 23	0.050	Sep 6	0.062
Fourth High:	Aug 26	0.064	Oct 9	0.049	May 3	0.061
California:						
First High:	Aug 30	0.087	Oct 10	0.062	May 4	0.066
Second High:	Aug 27	0.070	Aug 18	0.054	May 3	0.062
Third High:	Aug 18	0.065	Aug 23	0.051	Aug 15	0.062
Fourth High:	Aug 26	0.064	Oct 9	0.050	Sep 6	0.062
National:						
# Days Above the Standard:		1		0		0
Nat'l Standard Design Value:		*		0.047		0.058
National Year Coverage:		98		89		97
California:						
# Days Above the Standard:		1		0		0
California Designation Value:		0.087		0.087		0.070
Expected Peak Day Concentration:		*		*		0.070
California Year Coverage:		98		87		92

Notes:

Eight-hour ozone averages and related statistics are available at Compton-700 North Bullis Road between 2008 and 2011. Some years in this range may not be represented.
All averages expressed in parts per million.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Compton-700 North Bullis Road

iADAM

	2009		2010		2011	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Nov 3	0.092	Sep 24	0.077	Dec 16	0.075
Second High:	Oct 23	0.090	Sep 27	0.075	Jan 19	0.075
Third High:	Aug 26	0.088	Dec 3	0.075	Jan 17	0.074
Fourth High:	Nov 2	0.081	Jan 7	0.071	Jan 18	0.072
California:						
# Days Above the Standard:		0		0		0
Annual Average:		0.021		0.018		0.019
Year Coverage:		88		93		96

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Compton-700 North Bullis Road between 2008 and 2011. Some years in this range may not be represented.

All concentrations expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at Compton-700 North Bullis Road

iADAM

	2009		2010		2011	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Aug 30	0.104	Oct 10	0.081	Sep 6	0.082
Second High:	Aug 26	0.097	Sep 4	0.073	May 4	0.080
Third High:	Aug 27	0.087	Oct 9	0.069	Sep 7	0.079
Fourth High:	Aug 31	0.081	Aug 23	0.062	Aug 15	0.076
California:						
# Days Above the Standard:		2		0		0
California Designation Value:		0.10		0.10		0.08
Expected Peak Day Concentration:		*		*		0.083
National:						
# Days Above the Standard:		*0*		*0*		*0*
Nat'l Standard Design Value:		*0.097*		*0.087*		*0.082*
Year Coverage:		98		87		98

Notes:

Hourly ozone measurements and related statistics are available at Compton-700 North Bullis Road between 2008 and 2011. Some years in this range may not be represented.
All concentrations expressed in parts per million.
The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics*.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at Compton-700 North Bullis Road

iADAM

	2009		2010		2011	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jan 1	69.2	Dec 4	38.2	Dec 26	35.3
Second High:	Dec 27	39.5	Dec 31	34.5	Feb 5	32.2
Third High:	Dec 24	37.7	Feb 1	31.8	Nov 17	31.5
Fourth High:	Dec 21	31.0	Jan 8	30.7	Oct 30	30.4
California:						
First High:	Jan 1	69.2	Dec 4	38.2	Dec 26	35.3
Second High:	Dec 27	39.5	Dec 31	34.5	Feb 5	32.2
Third High:	Dec 24	37.7	Feb 1	31.8	Nov 17	31.5
Fourth High:	Dec 21	31.0	Jan 8	30.7	Oct 30	30.4
National:						
Estimated # Days > 24-Hour Std:		9.6		3.4		0.0
Measured # Days > 24-Hour Std:		3		1		0
24-Hour Standard Design Value:		*		*		34
24-Hour Standard 98th Percentile:		37.7		31.8		31.5
Annual Standard Design Value:		*		*		13.4
Annual Average:		14.6		12.5		12.9
California:						
Annual Std Designation Value:		15		15		15
Annual Average:		14.7		*		13.0
Year Coverage:		94		89		88

Notes:

Daily PM2.5 averages and related statistics are available at Compton-700 North Bullis Road between 2008 and 2011. Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.
An exceedance of a standard is not necessarily related to a violation of the standard.
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
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Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at Los Angeles-Westchester Parkway

	2009		2010		2011	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Oct 28	52.0	Aug 18	37.0	Apr 15	41.0
Second High:	Oct 4	46.0	Dec 4	36.0	Oct 30	40.0
Third High:	Jan 1	43.0	Jul 1	35.0	Sep 6	33.0
Fourth High:	Jan 7	43.0	Jan 8	34.0	May 3	32.0
California:						
First High:	Oct 28	52.0	Aug 18	37.0	Apr 15	41.0
Second High:	Oct 4	46.0	Dec 4	36.0	Oct 30	40.0
Third High:	Jan 7	45.0	Jul 1	35.0	Sep 6	33.0
Fourth High:	Jan 13	44.0	Jan 8	34.0	May 3	32.0
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		0.0
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		0.0		0.0
Annual Average:		*25.6*		*20.6*		*21.7*
3-Year Average:		*27*		*24*		*23*
California:						
Estimated # Days > 24-Hour Std:		6.5		*		0.0
Measured # Days > 24-Hour Std:		1		0		0
Annual Average:		25.5		*		21.4
3-Year Maximum Annual Average:		26		26		26
Year Coverage:		97		94		98

Notes:

Daily PM10 averages and related statistics are available at Los Angeles-Westchester Parkway between 2004 and 2011. Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.
The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics*.
An exceedance of a standard is not necessarily related to a violation of the standard.
All values listed above represent midnight-to-midnight 24-hour averages and may be related to an exceptional event.
State and national statistics may differ for the following reasons:
State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and

national statistics may therefore be based on different samplers.

State statistics for 1998 and later are based on local conditions (except for sites in the South Coast Air Basin, where State statistics for 2002 and later are based on local conditions). National statistics are based on standard conditions.

State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.

Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard; Estimated days mathematically estimates how many days concentrations would have been greater than the level of the standard had each day been monitored.

3-Year statistics represent the listed year and the 2 years before the listed year.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at Los Angeles-Westchester Parkway

iADAM

	2009		2010		2011	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Mar 19	0.070	Sep 27	0.070	Oct 23	0.067
Second High:	Aug 19	0.063	Sep 26	0.069	Oct 24	0.066
Third High:	Aug 18	0.062	Sep 25	0.064	Mar 7	0.063
Fourth High:	Sep 24	0.061	Jun 5	0.059	Sep 28	0.062
California:						
First High:	Mar 19	0.070	Sep 27	0.070	Oct 23	0.067
Second High:	Aug 19	0.064	Sep 26	0.069	Oct 24	0.066
Third High:	Aug 18	0.062	Sep 25	0.064	Mar 7	0.064
Fourth High:	Sep 24	0.062	Jun 5	0.059	Sep 28	0.062
National:						
# Days Above the Standard:		0		0		0
Nat'l Standard Design Value:		0.064		0.061		0.060
National Year Coverage:		91		92		75
California:						
# Days Above the Standard:		0		0		0
California Designation Value:		0.070		0.069		0.070
Expected Peak Day Concentration:		0.071		0.069		*
California Year Coverage:		91		93		72

Notes:

Eight-hour ozone averages and related statistics are available at Los Angeles-Westchester Parkway between 2004 and 2011. Some years in this range may not be represented.
All averages expressed in parts per million.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

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Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at Los Angeles-Westchester Parkway

iADAM

	2009		2010		2011	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Sep 24	0.077	Sep 26	0.089	Apr 5	0.078
Second High:	Mar 19	0.076	Sep 27	0.087	Mar 25	0.076
Third High:	Oct 25	0.076	Jun 5	0.069	Mar 19	0.073
Fourth High:	Aug 27	0.073	Sep 25	0.069	Sep 28	0.073
California:						
# Days Above the Standard:		0		0		0
California Designation Value:		0.08		0.08		0.08
Expected Peak Day Concentration:		0.079		0.078		0.078
National:						
# Days Above the Standard:		*0*		*0*		*0*
Nat'l Standard Design Value:		*0.079*		*0.079*		*0.077*
Year Coverage:		94		93		79

Notes:

Hourly ozone measurements and related statistics are available at Los Angeles-Westchester Parkway between 2004 and 2011. Some years in this range may not be represented.
All concentrations expressed in parts per million.
The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in *italics* or *italics*.
An exceedance of a standard is not necessarily related to a violation of the standard.
Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.
* means there was insufficient data available to determine the value.

Available Pollutants:

8-Hour Ozone | Hourly Ozone | PM2.5 | PM10 | Carbon Monoxide | Nitrogen Dioxide | State Sulfur Dioxide | Hydrogen Sulfide

EXHIBIT H

PROJECT SCHEDULE

Table 1
Overall Project Schedule

Phase	Months																																																																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	Life of Project
Phase 1: Site Preparation																																																																			
Phase 2: Drilling and Testing																																																																			
Phase 3: Final Design and Construction																																																																			
Phase 4: Development and Operations																																																																			Note 1

Source: Processes Unlimited International, Inc., October 5, 2012.

Note 1. Includes routine maintenance and operations as well as major maintenance during the remaining 32 years of the project.

EXHIBIT I

PROJECT CONSTRUCTION ASSUMPTIONS

E&B OIL DEVELOPMENT PROJECT
PHASE 1: SITE PREPARATION
VEHICLE ASSUMPTIONS FOR CONSTRUCTION AND OPERATIONS

ACTIVITY	VEHICLES REQUIRED	MAXIMUM NO. OF VEHICLE TRIPS PER DAY	DURATION (NO. OF WORKING DAYS)
Underground existing overhead utilities along Valley Drive and at the intersection of 6th Street and Valley Drive	Utility truck Concrete truck (10-cubic yard capacity)	2 2	25 3
Construct redesigned intersection at 6th Street and Valley Drive	Dump truck Concrete truck (10-cublic yard capacity)	3 2	5 3
Remove buildings	Trucks (25-ton capacity)	10	5
Remove concrete paving, asphalt, chain link fencing, and masonry walls	Trucks (25-ton capacity)	15	10
Construct retaining walls along western property boundary and a portion of the southern property boundary	Concrete trucks (10-cubic yard capacity) Flatbed truck Large truck with flatbed semi-trailer	5 1 1	4 1 3
Rough grading, excavate well cellar, and place crushed aggregate base material	Double-Bottom dump trucks (14-cubic yard capacity)	15	8
Construct 6-foot chain link fence	Flatbed truck	1	5
Construct well cellar	Concrete trucks (10-cubic yard capacity) Concrete pumper truck Large truck with flatbed semi-trailer	3 1 1	2 2 1
Install electrical service (install 280 linear feet from 8th Street to project site and install onsite electrical equipment)	Line crew trucks Cable truck Dump trucks Electrician trucks Flatbed truck	2 1 4 2 2	10 10 5 30 4
Install landscaping	Flatbed truck	1	2
Install 32-foot sound attenuation wall	Concrete trucks (10-cubic yard capacity) Large truck with flatbed semi-trailer	3 2	4 10

Source: Processes Unlimited International, Inc., October 5, 2012.

E&B OIL DEVELOPMENT PROJECT
PHASE 2: EXPLORATORY DRILLING AND TESTING
VEHICLE ASSUMPTIONS FOR CONSTRUCTION AND OPERATIONS

ACTIVITY	VEHICLES REQUIRED	MAXIMUM NO. OF VEHICLE TRIPS PER DAY	DURATION (NO. OF WORKING DAYS)
Install temporary construction trailer and associated utilities	Flatbed truck	1	3
Deliver and set up drill rig and its associated equipment	Large trucks with trailer [a]	4	10
Install temporary oil, water, and gas handling equipment	Large truck with flatbed semi-trailer Large truck with trailer Electrician trucks Welders truck	3 2 2 1	5 4 30 30
Drill three test wells and one water injection well	Large truck with flatbed semi-trailer Large truck with flatbed semi-trailer Bin trucks with roll-off bins (20-cubic yard capacity) Liquid haul truck (100-150 barrel capacity vacuum truck) Standard trash truck Large truck with flatbed semi-trailer Hydracrane	3 2 2 2 1 1 -- [b]	80 80 80 80 16 20 -- [b]
Testing of wells (approximately 800 barrels per day production rate)	Oil haul truck (175 barrel capacity)	7-12 [c]	215
Remove drill rig and associated equipment	Large truck with trailer [a]	4	10

Source: Processes Unlimited International, Inc., October 5, 2012.

Notes:

[a] Some will be permitted loads due to size and/or the weight of drill rig and associated equipment being delivered. It is assumed that there would be 11 permit loads during Phase 2.

[b] This equipment will only be used on an as needed basis.

[c] Assume worst case is three weekdays per week shipping schedule resulting in 12 trips, three days per week, for a total of 36 trips per week. Normal shipping schedule will be seven trips, five days per week, for a total of 35 trips per week.

E&B OIL DEVELOPMENT PROJECT
PHASE 3: FINAL DESIGN AND CONSTRUCTION
VEHICLE ASSUMPTIONS FOR CONSTRUCTION AND OPERATIONS

ACTIVITY	VEHICLES REQUIRED	MAXIMUM NO. OF VEHICLE TRIPS PER DAY	DURATION (NO. OF WORKING DAYS)
Remove temporary oil, water, and gas production equipment	Large truck with trailer Electrician and welder trucks	5 3	10 10
Remove four existing mature trees along Valley Drive	Tree trimming trucks with grinder	2	2
Remove 32-foot noise attenuation wall and install 10 to12-foot noise attenuation wall	Large truck with trailer	2	7
Implement Remedial Action Plan to address lead and Total Petroleum Hydrocarbon contaminated soil (includes export of approximately 9,000 cubic yards of soil)	Double-Bottom dump truck (14-cubic yard capacity)	18	40
Construct retaining walls along portions of eastern and southern property boundary	Concrete trucks (10-cubic yard capacity) Large truck with trailer	3 1	4 4
Final grading (balanced)	None required	0	NA
Construct extension of first well cellar and all of second well cellar	Concrete truck (10-cubic yard capacity) Concrete pumper truck Large truck with trailer	8 1 1	6 6 2
Construct 16-foot split-faced block perimeter wall	Large truck with trailer Concrete truck (10-cubic yard capacity)	1 4	22 10
Remove 10 to12-foot noise attenuation wall	Large trucks with trailer	5	2
Construct or install on-site facilities: - Small office building - Permanent oil and gas production equipment - Tanks, sumps, and pumps - Permanent site utilities (telephone, water, and sewer) - Final improvements for site access and paving of onsite surface area	Concrete truck (10-cubic yard capacity) Large truck with trailer Dump truck Electrician trucks	10 5 15 2	190 30 4 100
Construct street improvements (new curbs, gutter, and sidewalks)	Flatbed truck Concrete truck (10-cubic yard capacity) Dump truck	1 3 10	5 5 5
Install landscaping	Landscaper trucks Flatbed truck	2 1	7 7

E&B OIL DEVELOPMENT PROJECT
PHASE 3: FINAL DESIGN AND CONSTRUCTION (CONTINUED)
VEHICLE ASSUMPTIONS FOR CONSTRUCTION AND OPERATIONS

ACTIVITY	VEHICLES REQUIRED	MAXIMUM NO. OF VEHICLE TRIPS PER DAY	DURATION (NO. OF WORKING DAYS)
Construct off-site oil line, gas line, and gas metering station	Pipe fitter trucks (150 brake horse power) Dump trucks (250 brake horse power) Flatbed trucks (250 brake horse power) Concrete truck (10-cubic yard capacity)	2 12 2 12	80 60 70 70
Start-up and commissioning of oil and gas production equipment	Electrician trucks	2	20
Install 32-foot sound attenuation wall	Concrete trucks (10-cubic yard capacity) Large truck with trailer	3 2	4 10
Set conductor	Large truck with flatbed semi-trailer	1	30

Source: Processes Unlimited International, Inc., October 5, 2012.

E&B OIL DEVELOPMENT PROJECT
PHASE 4: DEVELOPMENT AND OPERATIONS
VEHICLE ASSUMPTIONS FOR CONSTRUCTION AND OPERATIONS

ACTIVITY	VEHICLES REQUIRED	MAXIMUM NO. OF VEHICLE TRIPS PER DAY	DURATION (NO. OF WORKING DAYS)
Deliver and set up drill rig and its associated equipment	Large truck with trailer [a]	4	10
Drill remaining 27 oil wells and three water injection wells	Large truck with flatbed semi-trailer Large truck with flatbed semi-trailer Bin trucks with roll-off bins (20-cubic yard capacity) Liquid haul truck (100-150 barrel capacity vacuum truck) Standard trash trucks Large truck with trailer Hydracrane	1 3 2 2 1 2 -- [b]	240 600 600 600 260 150 -- [b]
Remove drill rig	Large truck with trailer [a]	4	10
Remove 32-foot sound attenuation wall	Large truck with flatbed semi-trailer	2	7
Conduct routine maintenance and operations	Pickup trucks Utility truck Liquid haul truck (100-150 barrel capacity vacuum truck) Hydracrane	8 1 4 -- [b]	Life of Project Life of Project Life of Project -- [b]
Conduct major maintenance	Pickup trucks Hydracrane Large truck with flatbed semi-trailer Workover Rig	7 -- [b] -- [b] -- [c]	90 days per year -- [b] -- [b] -- [c]

Source: Processes Unlimited International, Inc., October 5, 2012.

Notes:

[a] Some will be permitted loads due to size and/or the weight of drill rig and associated equipment being delivered. It is assumed that there would be 11 permit loads during Phase 4.

[b] This vehicle will only be used on an as needed basis.

[c] This piece of equipment will be driven to the project site on an as needed basis up to 15 times per year. The use of the workover rig is included in the equipment assumptions.

E&B OIL DEVELOPMENT PROJECT
PHASE 1: SITE PREPARATION
EQUIPMENT ASSUMPTIONS FOR CONSTRUCTION AND OPERATIONS

PHASE 1 ACTIVITY	EQUIPMENT REQUIRED[a]	AMOUNT OF EQUIPMENT	DURATION (NO. OF WORKING DAYS)
Underground existing overhead utilities along Valley Drive and at the intersection of 6th Street and Valley Drive	Backhoe	1	10
Construct redesigned intersection at 6th Street and Valley Drive	Backhoe AC Paver Roller	1 1 1	20 3 3
Remove buildings	938 K wheel loader	1	10
Remove concrete paving, asphalt, chain link fencing, and masonry walls	Hydraulic concrete/AC slab buster 938 K wheel loader	1 1	10 15
Construct retaining walls along western property boundary and a portion of the southern property boundary	Diesel-powered auger	1	10
Rough grading, excavate well cellar, and place crushed aggregate base material	938 K wheel loader Roller Tamper Backhoe	1 1 1 1	20 8 8 3
Construct 6-foot chain link fence	None required	0	NA
Construct well cellar	Backhoe	1	3
Install electrical service (install 280 linear feet from 8th Street to project site and install onsite electrical equipment)	Backhoe Small crane	1 1	20 3
Install landscaping	None Required	0	NA
Install 32-foot sound attenuation wall	Small cranes Diesel-powered auger Fork lift	2 1 1	15 10 15

Source: Processes Unlimited International, Inc., October 5, 2012.

Note:
[a] Delivered to project site at beginning of activity and removed from project site when activity is completed.

E&B OIL DEVELOPMENT PROJECT
PHASE 2: EXPLORATORY DRILLING AND TESTING
EQUIPMENT ASSUMPTIONS FOR CONSTRUCTION AND OPERATIONS

PHASE 2 ACTIVITY	EQUIPMENT REQUIRED[a]	AMOUNT OF EQUIPMENT	DURATION (NO. OF WORKING DAYS)
Install temporary construction trailer and associated utilities	Office trailer	1	NA
Deliver and set up drill rig and its associated equipment	Fork lift Dry hole digger/auger Large crane (150-foot boom)	1 1 1	12 1 10
Install temporary oil, water, and gas handling equipment	Small crane	1	30
Drill three test wells and one water injection well	Electric drill rig Dry holes digger/auger Fork lift	1 1 1	120 120 80
Testing of wells (approximately 800 barrels per day production rate)	None required	0	NA
Remove drill rig and associated equipment	Large crane (150-foot boom)	1	10

Source: Processes Unlimited International, Inc., October 5, 2012.

Notes:
[a] Delivered to project site at beginning of activity and removed from project site when activity is completed.

E&B OIL DEVELOPMENT PROJECT
PHASE 3: FINAL DESIGN AND CONSTRUCTION
EQUIPMENT ASSUMPTIONS FOR CONSTRUCTION AND OPERATIONS

PHASE 3 ACTIVITY	EQUIPMENT REQUIRED[a]	AMOUNT OF EQUIPMENT	DURATION (NO. OF WORKING DAYS)
Remove temporary oil, water, and gas production equipment	Small crane	1	10
Remove four existing mature trees along Valley Drive	Tree trimming grinder	2	2
Remove 32-foot noise attenuation wall and install 10 to12-foot noise attenuation wall	Small crane Forklift	1 1	10 10
Implement Remedial Action Plan to address lead and Total Petroleum Hydrocarbon contaminated soil (includes export of approximately 9,000 cubic yards of soil)	CAT 365C Hydraulic Excavator Backhoe (108 brake horse power)	1 1	40 40
Construct retaining walls along portions of eastern and southern property boundary	Diesel auger Fork lift	1 1	6 20
Final grading (balanced)	Dozer Roller Tamper Water truck	1 1 1 1	3 3 3 3
Construct extension of first well cellar and all of second well cellar	Backhoe	1	15
Construct 16-foot split-faced block perimeter wall	Forklift	1	40
Remove 10 to12-foot noise attenuation wall	Forklift	1	2
Construct or install on-site facilities: - Small office building - Permanent oil and gas production equipment - Tanks, sumps, and pumps - Permanent site utilities (telephone, water, and sewer) - Final improvements for site access and paving of onsite surface area	Crane (120 brake horse power) Welders (45 brake horse power) Forklifts (146 brake horse power) Manlifts (120 brake horse power) Diesel auger Backhoe (108 brake horse power) AC paver (120 brake horse power) Roller	1 3 2 2 1 1 1 1	180 175 190 120 10 170 2 2
Construct street improvements (new curbs, gutter, and sidewalks)	Dozer AC paver Roller	1 1 1	3 2 2
Install landscaping	None required	0	NA

E&B OIL DEVELOPMENT PROJECT
PHASE 3: FINAL DESIGN AND CONSTRUCTION (CONTINUED)
EQUIPMENT ASSUMPTIONS FOR CONSTRUCTION AND OPERATIONS

PHASE 3 ACTIVITY	EQUIPMENT REQUIRED[a]	AMOUNT OF EQUIPMENT	DURATION (NO. OF WORKING DAYS)
Construct off-site oil line, gas line, and gas metering station	Sideboom truck (150 brake horse power) Trencher (120 brake horse power) Backhoe (108 brake horse power) Water truck (300 brake horse power) Paver (120 brake horse power)	2 1 1 1 1	70 60 60 70 10
Start-up and commissioning of oil and gas production equipment	None required	0	NA
Install 32-foot sound attenuation wall	Small cranes Diesel-powered auger Fork lift	2 1 1	15 5 15
Set conductor	Dry hole digger/auger	1	45-60

Source: Processes Unlimited International, Inc., October 5, 2012.

Notes:
[a] Delivered to project site at beginning of activity and removed from project site when activity is completed.

E&B OIL DEVELOPMENT PROJECT
PHASE 4: DEVELOPMENT AND OPERATIONS
EQUIPMENT ASSUMPTIONS FOR CONSTRUCTION AND OPERATIONS

ACTIVITY	EQUIPMENT REQUIRED[a]	AMOUNT OF EQUIPMENT	DURATION (NO. OF WORKING DAYS)
Deliver and set up drill rig and its associated equipment	Fork lift Large crane (150-foot boom)	1 1	10 1
Drill remaining 27 oil wells and three water injection wells	Electric drill rig Fork lift	1 1	910 910
Remove drill rig	Large crane (150-foot boom)	1	10
Remove 32-foot sound attenuation wall	Small crane Forklift	1 1	10 10
Conduct routine maintenance and operations	None required	0	NA
Conduct major maintenance	Diesel workover rig Forklift	1 1	90 days per year[b] as needed

Source: Processes Unlimited International, Inc., October 5, 2012.

Notes:

[a] Delivered to project site at beginning of activity and removed from project site when activity is completed. However, this does not apply to the workover rig as discussed in Footnote "b" below.

[b] The workover rig could be delivered to project site up to 15 times per year. However, the maximum number of days that the workover rig could be used on-site would be 90 days per year.

E&B OIL DEVELOPMENT PROJECT
PHASE 1: SITE PREPARATION
NUMBER OF EMPLOYEES DURING CONSTRUCTION AND OPERATIONS

PHASE 1 ACTIVITY	NUMBER OF EMPLOYEES	NO. OF WORKING DAYS	LOCATION OF PARKING
Underground existing overhead utilities along Valley Drive and at the intersection of 6th Street and Valley Drive	10	25	Adjacent parking area
Construct redesigned intersection at 6th Street and Valley Drive	8	20	Adjacent parking area
Remove buildings	8	20	Adjacent parking area
Remove concrete paving, asphalt, chain link fencing, and masonry walls	6	15	Adjacent parking area
Construct retaining walls along western property boundary and a portion of the southern property boundary	14	30	Adjacent parking area
Rough grading, excavate well cellar, and place crushed aggregate base material	10	20	Adjacent parking area
Construct 6-foot chain link fence	4	5	Adjacent parking area
Construct well cellar	8	10	Adjacent parking area
Install electrical service (install 280 linear feet from 8th Street to project site and install onsite electrical equipment)	15	30	Adjacent parking area
Install landscaping	2	8	Adjacent parking area
Install 32-foot sound attenuation wall	8	15	Adjacent parking area

Source: Processes Unlimited International, Inc., October 5, 2012.

E&B OIL DEVELOPMENT PROJECT
PHASE 2: EXPLORATORY DRILLING AND TESTING
NUMBER OF EMPLOYEES DURING CONSTRUCTION AND OPERATIONS

PHASE 2 ACTIVITY	NUMBER OF EMPLOYEES	NO. OF WORKING DAYS	LOCATION OF PARKING
Install temporary construction trailer and associated utilities	5	5	Adjacent parking area
Deliver and set up drill rig and its associated equipment	20	12	Adjacent parking area
Install temporary oil, water, and gas handling equipment	12	30	Adjacent parking area
Drill three test wells and one water injection well	20	128	Adjacent parking area
Testing of wells (approximately 800 barrels per day production rate)	5	304	Adjacent parking area
Remove drill rig and associated equipment	20	12	Adjacent parking area

Source: Processes Unlimited International, Inc., October 5, 2012.

E&B OIL DEVELOPMENT PROJECT
PHASE 3: FINAL DESIGN AND CONSTRUCTION
NUMBER OF EMPLOYEES DURING CONSTRUCTION AND OPERATIONS

PHASE 3 ACTIVITY	NUMBER OF EMPLOYEES	NO. OF WORKING DAYS	LOCATION OF PARKING
Remove temporary oil, water, and gas production equipment	12	10	Adjacent parking area
Remove four existing mature trees along Valley Drive	-- [a]	2	-- [a]
Remove 32-foot noise attenuation wall and install 10 to12-foot noise attenuation wall	8	10	Adjacent parking area
Implement Remedial Action Plan to address lead and Total Petroleum Hydrocarbon contaminated soil (includes export of approximately 9,000 cubic yards of soil)	8	40	Adjacent parking area
Construct retaining walls along portions of eastern and southern property boundary	20	20	Adjacent parking area
Final grading (balanced)	6	3	Adjacent parking area
Construct extension of first well cellar and all of second well cellar	15	25	Adjacent parking area
Construct 16-foot split-faced block perimeter wall	20	40	Adjacent parking area
Remove 10 to12-foot noise attenuation wall	5	2	Adjacent parking area
Construct or install on-site facilities: - Small office building - Permanent oil and gas production equipment - Tanks, sumps, and pumps - Permanent site utilities (telephone, water, and sewer) - Final improvements for site access and paving of onsite surface area	35	190	Adjacent parking area
Construct street improvements (new curbs, gutter, and sidewalks)	8	10	Adjacent parking area
Install landscaping	6	7	Adjacent parking area
Construct off-site oil line, gas line, and gas metering station	20	80	Offsite location determined by contractor
Start-up and commissioning of oil and gas production equipment	5	20	Adjacent parking area
Install 32-foot sound attenuation wall	8	15	Adjacent parking area
Set conductor	5	45	Adjacent parking area

Source: Processes Unlimited International, Inc., October 5, 2012.

Notes:
[a] Task conducted by contractor's employees that will drive the tree trimming trucks to the project site. No parking needed.

E&B OIL DEVELOPMENT PROJECT
PHASE 4: DEVELOPMENT AND OPERATIONS
NUMBER OF EMPLOYEES DURING CONSTRUCTION AND OPERATIONS

ACTIVITY	NUMBER OF EMPLOYEES	NO. OF WORKING DAYS	LOCATION OF PARKING
Deliver and set up drill rig and its associated equipment	20	15	Adjacent parking area
Drill remaining 27 oil wells and three water injection wells	20	910	Adjacent parking area
Remove drill rig	20	12	Adjacent parking area
Remove 32-foot sound attenuation wall	8	10	Adjacent parking area
Conduct routine maintenance and operations	4	Life of project	Onsite parking
Conduct major maintenance	14	90 days per year	Onsite parking

Source: Processes Unlimited International, Inc., October 5, 2012.

EXHIBIT J

CALEEMOD EMISSION MODELING REPORTS

PHASE 1 – SITE PREPARATION

Hermosa Beach

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	56628	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - There is one office, 625 sqft, located on the site.

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Backhow - Increased to 120 hp.

Off-road Equipment - Adjust hours per day to 7 to account for daily usage

Off-road Equipment - Adjusted deualt to project specific data.

Off-road Equipment - Hours per day adjusted to account for actual equipment usage

Off-road Equipment - One flatbed truck used for phase.

Off-road Equipment - Added off-highway trucks to account for concrete trucks, pumper truck, and tractor-trailer trucks

Off-road Equipment - Adjusted hours per dayto account for length of phase.

Off-road Equipment - Adjusted hours per day to account for length of phase.

Off-road Equipment - Adjust hours per day to account for phase length.

Off-road Equipment - Equipment list per project design

Trips and VMT - Number of workers and total trips hauling revised per project specifications.

Demolition -

Grading - Actual acerage disturbed entered

Vehicle Trips - No operational vehicle trips during this pahse of the project.

Woodstoves - No operational area emissions during this phase of the project

Energy Use - No onsite power required during this phase of the project.

Solid Waste - Assume one ton/week of municipal waste generation and disposal.

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - The project proposes to install onsight power generation using microturbines to provide 50% of the facilities power demand.

Off-road Equipment - Add bore/drill rig for auger.

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					
2014	0.12	0.85	0.63	0.00	0.15	0.05	0.20	0.01	0.05	0.06	0.00	109.77	109.77	0.01	0.00	109.95
Total	**0.12**	**0.85**	**0.63**	**0.00**	**0.15**	**0.05**	**0.20**	**0.01**	**0.05**	**0.06**	**0.00**	**109.77**	**109.77**	**0.01**	**0.00**	**109.95**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.12	0.85	0.63	0.00	0.11	0.05	0.16	0.00	0.05	0.06	0.00	109.77	109.77	0.01	0.00	109.95
Total	**0.12**	**0.85**	**0.63**	**0.00**	**0.11**	**0.05**	**0.16**	**0.00**	**0.05**	**0.06**	**0.00**	**109.77**	**109.77**	**0.01**	**0.00**	**109.95**

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	0.27	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
Energy	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
Mobile	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
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.27**	**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**

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	0.27	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
Energy	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
Mobile	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
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.27**	**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

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Relocate Electrical Service - 2014

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	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00	0.00	6.56	6.56	0.00	0.00	6.57
Total	**0.01**	**0.06**	**0.05**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**6.56**	**6.56**	**0.00**	**0.00**	**6.57**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19	0.00	0.00	0.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63	0.00	0.00	0.63
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36	1.36	0.00	0.00	1.36
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.18**	**2.18**	**0.00**	**0.00**	**2.18**

3.2 A. Relocate Electrical Service - 2014

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	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00	0.00	6.56	6.56	0.00	0.00	6.57
Total	**0.01**	**0.06**	**0.05**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**6.56**	**6.56**	**0.00**	**0.00**	**6.57**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19	0.00	0.00	0.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63	0.00	0.00	0.63
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36	1.36	0.00	0.00	1.36
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.18**	**2.18**	**0.00**	**0.00**	**2.18**

3.3 B. Remove Buildings - 2014

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					0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.04	0.03	0.00		0.00	0.00		0.00	0.00	0.00	3.73	3.73	0.00	0.00	3.74
Total	**0.01**	**0.04**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.73**	**3.73**	**0.00**	**0.00**	**3.74**

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	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.91	1.91	0.00	0.00	1.91
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.00	0.00	0.87
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**2.78**	**2.78**	**0.00**	**0.00**	**2.78**

3.3 B. Remove Buildings - 2014

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					0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.04	0.03	0.00		0.00	0.00		0.00	0.00	0.00	3.73	3.73	0.00	0.00	3.74
Total	**0.01**	**0.04**	**0.03**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.73**	**3.73**	**0.00**	**0.00**	**3.74**

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	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.91	1.91	0.00	0.00	1.91
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.00	0.00	0.87
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**2.78**	**2.78**	**0.00**	**0.00**	**2.78**

3.4 K. Modify Intersection 6th Street / Valley Drive - 2014

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.16	0.12	0.00		0.01	0.01		0.01	0.01	0.00	15.28	15.28	0.00	0.00	15.32
Total	**0.03**	**0.16**	**0.12**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**15.28**	**15.28**	**0.00**	**0.00**	**15.32**

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	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.80	0.00	0.00	0.80
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.00	0.00	0.87
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.67**	**1.67**	**0.00**	**0.00**	**1.67**

3.4 K. Modify Intersection 6th Street / Valley Drive - 2014

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.16	0.12	0.00		0.01	0.01		0.01	0.01	0.00	15.28	15.28	0.00	0.00	15.32
Total	**0.03**	**0.16**	**0.12**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**15.28**	**15.28**	**0.00**	**0.00**	**15.32**

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	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.80	0.00	0.00	0.80
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.00	0.00	0.87
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.67**	**1.67**	**0.00**	**0.00**	**1.67**

3.5 C. Remove paving, masonry walls - 2014

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					0.04	0.00	0.04	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.10	0.08	0.00		0.01	0.01		0.01	0.01	0.00	12.10	12.10	0.00	0.00	12.12
Total	**0.01**	**0.10**	**0.08**	**0.00**	**0.04**	**0.01**	**0.05**	**0.01**	**0.01**	**0.02**	**0.00**	**12.10**	**12.10**	**0.00**	**0.00**	**12.12**

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	0.00	0.04	0.02	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	5.73	5.73	0.00	0.00	5.73
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.49	0.00	0.00	0.49
Total	**0.00**	**0.04**	**0.02**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**6.22**	**6.22**	**0.00**	**0.00**	**6.22**

3.5 C. Remove paving, masonry walls - 2014

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					0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.10	0.08	0.00		0.01	0.01		0.01	0.01	0.00	12.10	12.10	0.00	0.00	12.12
Total	**0.01**	**0.10**	**0.08**	**0.00**	**0.02**	**0.01**	**0.03**	**0.00**	**0.01**	**0.01**	**0.00**	**12.10**	**12.10**	**0.00**	**0.00**	**12.12**

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	0.00	0.04	0.02	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	5.73	5.73	0.00	0.00	5.73
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.49	0.00	0.00	0.49
Total	**0.00**	**0.04**	**0.02**	**0.00**	**0.02**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**6.22**	**6.22**	**0.00**	**0.00**	**6.22**

3.6 D. Construct Fence / Retaining Walls - 2014

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	0.00	0.04	0.05	0.00		0.00	0.00		0.00	0.00	0.00	7.33	7.33	0.00	0.00	7.34
Total	**0.00**	**0.04**	**0.05**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**7.33**	**7.33**	**0.00**	**0.00**	**7.34**

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	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.92	0.92	0.00	0.00	0.92
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	2.28	0.00	0.00	2.29
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.20**	**3.20**	**0.00**	**0.00**	**3.21**

3.6 D. Construct Fence / Retaining Walls - 2014

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	0.00	0.04	0.05	0.00		0.00	0.00		0.00	0.00	0.00	7.33	7.33	0.00	0.00	7.34
Total	**0.00**	**0.04**	**0.05**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**7.33**	**7.33**	**0.00**	**0.00**	**7.34**

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	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.92	0.92	0.00	0.00	0.92
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	2.28	0.00	0.00	2.29
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.20**	**3.20**	**0.00**	**0.00**	**3.21**

3.7 E. Rough Grading - 2014

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.06	0.04	0.00		0.01	0.01		0.01	0.01	0.00	6.09	6.09	0.00	0.00	6.11
Total	**0.01**	**0.06**	**0.04**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**6.09**	**6.09**	**0.00**	**0.00**	**6.11**

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	0.00	0.03	0.02	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	4.58	4.58	0.00	0.00	4.59
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09	1.09	0.00	0.00	1.09
Total	**0.00**	**0.03**	**0.03**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**5.67**	**5.67**	**0.00**	**0.00**	**5.68**

3.7 E. Rough Grading - 2014

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.06	0.04	0.00		0.01	0.01		0.01	0.01	0.00	6.09	6.09	0.00	0.00	6.11
Total	**0.01**	**0.06**	**0.04**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**6.09**	**6.09**	**0.00**	**0.00**	**6.11**

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	0.00	0.03	0.02	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	4.58	4.58	0.00	0.00	4.59
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09	1.09	0.00	0.00	1.09
Total	**0.00**	**0.03**	**0.03**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**5.67**	**5.67**	**0.00**	**0.00**	**5.68**

3.8 G. Construct Well Cellar - 2014

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	0.00	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
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.31	0.00	0.00	0.31
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.44
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.74**	**0.74**	**0.00**	**0.00**	**0.75**

3.8 G. Construct Well Cellar - 2014

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	0.00	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
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.31	0.00	0.00	0.31
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.44
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.74**	**0.74**	**0.00**	**0.00**	**0.75**

3.9 I. Landscaping - 2014

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	0.00	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
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.08
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	0.00	0.00	0.11
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.19**	**0.19**	**0.00**	**0.00**	**0.19**

3.9 I. Landscaping - 2014

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	0.00	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
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.08
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	0.00	0.00	0.11
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.19**	**0.19**	**0.00**	**0.00**	**0.19**

3.10 F. Construct 6-foot Chain Link Fence - 2014

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	0.00	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
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19	0.00	0.00	0.19
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.00	0.00	0.09
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.28**	**0.28**	**0.00**	**0.00**	**0.28**

3.10 F. Construct 6-foot Chain Link Fence - 2014

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	0.00	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
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.19	0.00	0.00	0.19
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.00	0.00	0.09
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.28**	**0.28**	**0.00**	**0.00**	**0.28**

3.11 H. Install Electrical Service - 2014

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	0.02	0.16	0.08	0.00		0.01	0.01		0.01	0.01	0.00	17.80	17.80	0.00	0.00	17.84
Total	**0.02**	**0.16**	**0.08**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**17.80**	**17.80**	**0.00**	**0.00**	**17.84**

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	0.00	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
Vendor	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.14	4.14	0.00	0.00	4.14
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.45	2.45	0.00	0.00	2.45
Total	**0.00**	**0.03**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.59**	**6.59**	**0.00**	**0.00**	**6.59**

3.11 H. Install Electrical Service - 2014

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	0.02	0.16	0.08	0.00		0.01	0.01		0.01	0.01	0.00	17.80	17.80	0.00	0.00	17.84
Total	**0.02**	**0.16**	**0.08**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**17.80**	**17.80**	**0.00**	**0.00**	**17.84**

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	0.00	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
Vendor	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.14	4.14	0.00	0.00	4.14
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.45	2.45	0.00	0.00	2.45
Total	**0.00**	**0.03**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.59**	**6.59**	**0.00**	**0.00**	**6.59**

3.12 J. Construct Sound Attenuation Wall - 2014

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	0.01	0.08	0.04	0.00		0.00	0.00		0.00	0.00	0.00	9.71	9.71	0.00	0.00	9.72
Total	**0.01**	**0.08**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**9.71**	**9.71**	**0.00**	**0.00**	**9.72**

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	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22	1.22	0.00	0.00	1.22
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.44
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.65**	**1.65**	**0.00**	**0.00**	**1.66**

3.12 J. Construct Sound Attenuation Wall - 2014

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	0.01	0.08	0.04	0.00		0.00	0.00		0.00	0.00	0.00	9.71	9.71	0.00	0.00	9.72
Total	**0.01**	**0.08**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**9.71**	**9.71**	**0.00**	**0.00**	**9.72**

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	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22	1.22	0.00	0.00	1.22
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.44
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.65**	**1.65**	**0.00**	**0.00**	**1.66**

4.0 Mobile Detail

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	0.00	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
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	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
NaturalGas Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

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	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	0.27	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
Unmitigated	0.27	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.07					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.20					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.27**	**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**

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	0.07					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.20					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.27**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

9.0 Vegetation

Hermosa Beach

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	56628	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - There is one office, 625 sqft, located on the site.

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Backhow - Increased to 120 hp.

Off-road Equipment - Adjust hours per day to 7 to account for daily usage

Off-road Equipment - Adjusted deualt to project specific data.

Off-road Equipment - Hours per day adjusted to account for actual equipment usage

Off-road Equipment - One flatbed truck used for phase.

Off-road Equipment - Added off-highway trucks to account for concrete trucks, pumper truck, and tractor-trailer trucks

Off-road Equipment - Adjusted hours per dayto account for length of phase.

Off-road Equipment - Adjusted hours per day to account for length of phase.

Off-road Equipment - Adjust hours per day to account for phase length.

Off-road Equipment - Equipment list per project design

Trips and VMT - Number of workers and total trips hauling revised per project specifications.

Demolition -

Grading - Actual acerage disturbed entered

Vehicle Trips - No operational vehicle trips during this pahse of the project.

Woodstoves - No operational area emissions during this phase of the project

Energy Use - No onsite power required during this phase of the project.

Solid Waste - Assume one ton/week of municipal waste generation and disposal.

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - The project proposes to install onsight power generation using microturbines to provide 50% of the facilities power demand.

Off-road Equipment - Add bore/drill rig for auger.

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					
2014	2.69	18.54	13.37	0.03	8.96	1.39	9.89	0.03	1.39	1.40	0.00	2,698.13	0.00	0.24	0.00	2,703.20
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	2.69	18.54	13.37	0.03	5.70	1.39	6.63	0.03	1.39	1.40	0.00	2,698.13	0.00	0.24	0.00	2,703.20
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	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
Total	**1.48**	**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**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	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
Total	**1.48**	**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

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Relocate Electrical Service - 2014

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	0.71	4.75	3.92	0.01		0.38	0.38		0.38	0.38		578.30		0.06		579.63
Total	**0.71**	**4.75**	**3.92**	**0.01**		**0.38**	**0.38**		**0.38**	**0.38**		**578.30**		**0.06**		**579.63**

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	0.01	0.10	0.06	0.00	0.12	0.00	0.12	0.00	0.00	0.00		16.87		0.00		16.88
Vendor	0.03	0.31	0.20	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.46		0.00		55.49
Worker	0.06	0.06	0.72	0.00	0.15	0.01	0.16	0.01	0.01	0.01		126.41		0.01		126.56
Total	**0.10**	**0.47**	**0.98**	**0.00**	**0.29**	**0.02**	**0.31**	**0.01**	**0.02**	**0.02**		**198.74**		**0.01**		**198.93**

3.2 A. Relocate Electrical Service - 2014

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	0.71	4.75	3.92	0.01		0.38	0.38		0.38	0.38	0.00	578.30		0.06		579.63
Total	**0.71**	**4.75**	**3.92**	**0.01**		**0.38**	**0.38**		**0.38**	**0.38**	**0.00**	**578.30**		**0.06**		**579.63**

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	0.01	0.10	0.06	0.00	0.12	0.00	0.12	0.00	0.00	0.00		16.87		0.00		16.88
Vendor	0.03	0.31	0.20	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.46		0.00		55.49
Worker	0.06	0.06	0.72	0.00	0.15	0.01	0.16	0.01	0.01	0.01		126.41		0.01		126.56
Total	**0.10**	**0.47**	**0.98**	**0.00**	**0.29**	**0.02**	**0.31**	**0.01**	**0.02**	**0.02**		**198.74**		**0.01**		**198.93**

3.3 B. Remove Buildings - 2014

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					1.34	0.00	1.34	0.00	0.00	0.00						0.00
Off-Road	0.63	3.95	2.88	0.00		0.33	0.33		0.33	0.33		411.65		0.06		412.83
Total	**0.63**	**3.95**	**2.88**	**0.00**	**1.34**	**0.33**	**1.67**	**0.00**	**0.33**	**0.33**		**411.65**		**0.06**		**412.83**

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	0.13	1.22	0.71	0.00	1.17	0.05	1.22	0.01	0.05	0.06		210.89		0.01		211.02
Vendor	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
Worker	0.05	0.05	0.57	0.00	0.12	0.00	0.13	0.00	0.00	0.01		101.13		0.01		101.25
Total	**0.18**	**1.27**	**1.28**	**0.00**	**1.29**	**0.05**	**1.35**	**0.01**	**0.05**	**0.07**		**312.02**		**0.02**		**312.27**

3.3 B. Remove Buildings - 2014

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					0.52	0.00	0.52	0.00	0.00	0.00						0.00
Off-Road	0.63	3.95	2.88	0.00		0.33	0.33		0.33	0.33	0.00	411.65		0.06		412.83
Total	**0.63**	**3.95**	**2.88**	**0.00**	**0.52**	**0.33**	**0.85**	**0.00**	**0.33**	**0.33**	**0.00**	**411.65**		**0.06**		**412.83**

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	0.13	1.22	0.71	0.00	1.17	0.05	1.22	0.01	0.05	0.06		210.89		0.01		211.02
Vendor	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
Worker	0.05	0.05	0.57	0.00	0.12	0.00	0.13	0.00	0.00	0.01		101.13		0.01		101.25
Total	**0.18**	**1.27**	**1.28**	**0.00**	**1.29**	**0.05**	**1.35**	**0.01**	**0.05**	**0.07**		**312.02**		**0.02**		**312.27**

3.4 K. Modify Intersection 6th Street / Valley Drive - 2014

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					0.01	0.00	0.01	0.00	0.00	0.00						0.00
Off-Road	2.59	16.50	11.69	0.02		1.37	1.37		1.37	1.37		1,684.54		0.23		1,689.42
Total	**2.59**	**16.50**	**11.69**	**0.02**	**0.01**	**1.37**	**1.38**	**0.00**	**1.37**	**1.37**		**1,684.54**		**0.23**		**1,689.42**

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	0.05	0.51	0.30	0.00	0.49	0.02	0.51	0.00	0.02	0.03		88.58		0.00		88.63
Vendor	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
Worker	0.05	0.05	0.57	0.00	0.12	0.00	0.13	0.00	0.00	0.01		101.13		0.01		101.25
Total	**0.10**	**0.56**	**0.87**	**0.00**	**0.61**	**0.02**	**0.64**	**0.00**	**0.02**	**0.04**		**189.71**		**0.01**		**189.88**

3.4 K. Modify Intersection 6th Street / Valley Drive - 2014

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					0.01	0.00	0.01	0.00	0.00	0.00						0.00
Off-Road	2.59	16.50	11.69	0.02		1.37	1.37		1.37	1.37	0.00	1,684.54		0.23		1,689.42
Total	**2.59**	**16.50**	**11.69**	**0.02**	**0.01**	**1.37**	**1.38**	**0.00**	**1.37**	**1.37**	**0.00**	**1,684.54**		**0.23**		**1,689.42**

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	0.05	0.51	0.30	0.00	0.49	0.02	0.51	0.00	0.02	0.03		88.58		0.00		88.63
Vendor	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
Worker	0.05	0.05	0.57	0.00	0.12	0.00	0.13	0.00	0.00	0.01		101.13		0.01		101.25
Total	**0.10**	**0.56**	**0.87**	**0.00**	**0.61**	**0.02**	**0.64**	**0.00**	**0.02**	**0.04**		**189.71**		**0.01**		**189.88**

3.5 C. Remove paving, masonry walls - 2014

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					5.35	0.00	5.35	0.00	0.00	0.00						0.00
Off-Road	1.68	13.62	10.11	0.02		0.71	0.71		0.71	0.71		1,778.72		0.15		1,781.87
Total	**1.68**	**13.62**	**10.11**	**0.02**	**5.35**	**0.71**	**6.06**	**0.00**	**0.71**	**0.71**		**1,778.72**		**0.15**		**1,781.87**

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	0.51	4.89	2.83	0.01	3.52	0.21	3.73	0.03	0.21	0.24		843.57		0.02		844.09
Vendor	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
Worker	0.04	0.04	0.43	0.00	0.09	0.00	0.10	0.00	0.00	0.01		75.85		0.00		75.94
Total	**0.55**	**4.93**	**3.26**	**0.01**	**3.61**	**0.21**	**3.83**	**0.03**	**0.21**	**0.25**		**919.42**		**0.02**		**920.03**

3.5 C. Remove paving, masonry walls - 2014

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					2.09	0.00	2.09	0.00	0.00	0.00						0.00
Off-Road	1.68	13.62	10.11	0.02		0.71	0.71		0.71	0.71	0.00	1,778.72		0.15		1,781.87
Total	**1.68**	**13.62**	**10.11**	**0.02**	**2.09**	**0.71**	**2.80**	**0.00**	**0.71**	**0.71**	**0.00**	**1,778.72**		**0.15**		**1,781.87**

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	0.51	4.89	2.83	0.01	3.52	0.21	3.73	0.03	0.21	0.24		843.57		0.02		844.09
Vendor	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
Worker	0.04	0.04	0.43	0.00	0.09	0.00	0.10	0.00	0.00	0.01		75.85		0.00		75.94
Total	**0.55**	**4.93**	**3.26**	**0.01**	**3.61**	**0.21**	**3.83**	**0.03**	**0.21**	**0.25**		**919.42**		**0.02**		**920.03**

3.6 D. Construct Fence / Retaining Walls - 2014

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	0.29	2.97	3.27	0.01		0.14	0.14		0.14	0.14		538.87		0.03		539.41
Total	**0.29**	**2.97**	**3.27**	**0.01**		**0.14**	**0.14**		**0.14**	**0.14**		**538.87**		**0.03**		**539.41**

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	0.04	0.39	0.23	0.00	0.56	0.02	0.58	0.00	0.02	0.02		67.49		0.00		67.53
Vendor	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
Worker	0.09	0.08	1.01	0.00	0.21	0.01	0.22	0.01	0.01	0.02		176.97		0.01		177.18
Total	**0.13**	**0.47**	**1.24**	**0.00**	**0.77**	**0.03**	**0.80**	**0.01**	**0.03**	**0.04**		**244.46**		**0.01**		**244.71**

3.6 D. Construct Fence / Retaining Walls - 2014

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	0.29	2.97	3.27	0.01		0.14	0.14		0.14	0.14	0.00	538.87		0.03		539.41
Total	**0.29**	**2.97**	**3.27**	**0.01**		**0.14**	**0.14**		**0.14**	**0.14**	**0.00**	**538.87**		**0.03**		**539.41**

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	0.04	0.39	0.23	0.00	0.56	0.02	0.58	0.00	0.02	0.02		67.49		0.00		67.53
Vendor	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
Worker	0.09	0.08	1.01	0.00	0.21	0.01	0.22	0.01	0.01	0.02		176.97		0.01		177.18
Total	**0.13**	**0.47**	**1.24**	**0.00**	**0.77**	**0.03**	**0.80**	**0.01**	**0.03**	**0.04**		**244.46**		**0.01**		**244.71**

3.7 E. Rough Grading - 2014

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					0.08	0.00	0.08	0.00	0.00	0.00						0.00
Off-Road	0.97	6.39	4.47	0.01		0.50	0.50		0.50	0.50		671.96		0.09		673.78
Total	**0.97**	**6.39**	**4.47**	**0.01**	**0.08**	**0.50**	**0.58**	**0.00**	**0.50**	**0.50**		**671.96**		**0.09**		**673.78**

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	0.31	2.93	1.70	0.00	2.81	0.13	2.94	0.02	0.13	0.15		506.14		0.01		506.46
Vendor	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
Worker	0.06	0.06	0.72	0.00	0.15	0.01	0.16	0.01	0.01	0.01		126.41		0.01		126.56
Total	**0.37**	**2.99**	**2.42**	**0.00**	**2.96**	**0.14**	**3.10**	**0.03**	**0.14**	**0.16**		**632.55**		**0.02**		**633.02**

3.7 E. Rough Grading - 2014

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					0.03	0.00	0.03	0.00	0.00	0.00						0.00
Off-Road	0.97	6.39	4.47	0.01		0.50	0.50		0.50	0.50	0.00	671.96		0.09		673.78
Total	**0.97**	**6.39**	**4.47**	**0.01**	**0.03**	**0.50**	**0.53**	**0.00**	**0.50**	**0.50**	**0.00**	**671.96**		**0.09**		**673.78**

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	0.31	2.93	1.70	0.00	2.81	0.13	2.94	0.02	0.13	0.15		506.14		0.01		506.46
Vendor	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
Worker	0.06	0.06	0.72	0.00	0.15	0.01	0.16	0.01	0.01	0.01		126.41		0.01		126.56
Total	**0.37**	**2.99**	**2.42**	**0.00**	**2.96**	**0.14**	**3.10**	**0.03**	**0.14**	**0.16**		**632.55**		**0.02**		**633.02**

3.8 G. Construct Well Cellar - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.04	0.39	0.23	0.00	0.19	0.02	0.21	0.00	0.02	0.02		67.49		0.00		67.53
Vendor	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
Worker	0.05	0.05	0.57	0.00	0.12	0.00	0.13	0.00	0.00	0.01		101.13		0.01		101.25
Total	**0.09**	**0.44**	**0.80**	**0.00**	**0.31**	**0.02**	**0.34**	**0.00**	**0.02**	**0.03**		**168.62**		**0.01**		**168.78**

3.8 G. Construct Well Cellar - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.04	0.39	0.23	0.00	0.19	0.02	0.21	0.00	0.02	0.02		67.49		0.00		67.53
Vendor	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
Worker	0.05	0.05	0.57	0.00	0.12	0.00	0.13	0.00	0.00	0.01		101.13		0.01		101.25
Total	**0.09**	**0.44**	**0.80**	**0.00**	**0.31**	**0.02**	**0.34**	**0.00**	**0.02**	**0.03**		**168.62**		**0.01**		**168.78**

3.9 I. Landscaping - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.01	0.10	0.06	0.00	0.05	0.00	0.05	0.00	0.00	0.00		16.87		0.00		16.88
Vendor	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
Worker	0.01	0.01	0.14	0.00	0.03	0.00	0.03	0.00	0.00	0.00		25.28		0.00		25.31
Total	**0.02**	**0.11**	**0.20**	**0.00**	**0.08**	**0.00**	**0.08**	**0.00**	**0.00**	**0.00**		**42.15**		**0.00**		**42.19**

3.9 I. Landscaping - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.01	0.10	0.06	0.00	0.05	0.00	0.05	0.00	0.00	0.00		16.87		0.00		16.88
Vendor	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
Worker	0.01	0.01	0.14	0.00	0.03	0.00	0.03	0.00	0.00	0.00		25.28		0.00		25.31
Total	**0.02**	**0.11**	**0.20**	**0.00**	**0.08**	**0.00**	**0.08**	**0.00**	**0.00**	**0.00**		**42.15**		**0.00**		**42.19**

3.10 F. Construct 6-foot Chain Link Fence - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.06	0.61	0.35	0.00	0.12	0.03	0.15	0.00	0.03	0.03		105.45		0.00		105.51
Vendor	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
Worker	0.02	0.02	0.29	0.00	0.06	0.00	0.06	0.00	0.00	0.00		50.56		0.00		50.62
Total	**0.08**	**0.63**	**0.64**	**0.00**	**0.18**	**0.03**	**0.21**	**0.00**	**0.03**	**0.03**		**156.01**		**0.00**		**156.13**

3.10 F. Construct 6-foot Chain Link Fence - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.06	0.61	0.35	0.00	0.12	0.03	0.15	0.00	0.03	0.03		105.45		0.00		105.51
Vendor	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
Worker	0.02	0.02	0.29	0.00	0.06	0.00	0.06	0.00	0.00	0.00		50.56		0.00		50.62
Total	**0.08**	**0.63**	**0.64**	**0.00**	**0.18**	**0.03**	**0.21**	**0.00**	**0.03**	**0.03**		**156.01**		**0.00**		**156.13**

3.11 H. Install Electrical Service - 2014

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	1.29	10.65	5.05	0.01		0.52	0.52		0.52	0.52		1,308.71		0.11		1,311.12
Total	**1.29**	**10.65**	**5.05**	**0.01**		**0.52**	**0.52**		**0.52**	**0.52**		**1,308.71**		**0.11**		**1,311.12**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.16	1.69	1.09	0.00	0.10	0.06	0.16	0.01	0.06	0.07		305.03		0.01		305.20
Worker	0.09	0.09	1.08	0.00	0.23	0.01	0.24	0.01	0.01	0.02		189.61		0.01		189.84
Total	**0.25**	**1.78**	**2.17**	**0.00**	**0.33**	**0.07**	**0.40**	**0.02**	**0.07**	**0.09**		**494.64**		**0.02**		**495.04**

3.11 H. Install Electrical Service - 2014

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	1.29	10.65	5.05	0.01		0.52	0.52		0.52	0.52	0.00	1,308.71		0.11		1,311.12
Total	**1.29**	**10.65**	**5.05**	**0.01**		**0.52**	**0.52**		**0.52**	**0.52**	**0.00**	**1,308.71**		**0.11**		**1,311.12**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.16	1.69	1.09	0.00	0.10	0.06	0.16	0.01	0.06	0.07		305.03		0.01		305.20
Worker	0.09	0.09	1.08	0.00	0.23	0.01	0.24	0.01	0.01	0.02		189.61		0.01		189.84
Total	**0.25**	**1.78**	**2.17**	**0.00**	**0.33**	**0.07**	**0.40**	**0.02**	**0.07**	**0.09**		**494.64**		**0.02**		**495.04**

3.12 J. Construct Sound Attenuation Wall - 2014

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	1.73	15.74	8.16	0.02		0.63	0.63		0.63	0.63		2,141.07		0.15		2,144.30
Total	**1.73**	**15.74**	**8.16**	**0.02**		**0.63**	**0.63**		**0.63**	**0.63**		**2,141.07**		**0.15**		**2,144.30**

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	0.16	1.57	0.91	0.00	0.75	0.07	0.82	0.01	0.07	0.08		269.94		0.01		270.11
Vendor	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
Worker	0.05	0.05	0.57	0.00	0.12	0.00	0.13	0.00	0.00	0.01		101.13		0.01		101.25
Total	**0.21**	**1.62**	**1.48**	**0.00**	**0.87**	**0.07**	**0.95**	**0.01**	**0.07**	**0.09**		**371.07**		**0.02**		**371.36**

3.12 J. Construct Sound Attenuation Wall - 2014

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	1.73	15.74	8.16	0.02		0.63	0.63		0.63	0.63	0.00	2,141.07		0.15		2,144.30
Total	**1.73**	**15.74**	**8.16**	**0.02**		**0.63**	**0.63**		**0.63**	**0.63**	**0.00**	**2,141.07**		**0.15**		**2,144.30**

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	0.16	1.57	0.91	0.00	0.75	0.07	0.82	0.01	0.07	0.08		269.94		0.01		270.11
Vendor	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
Worker	0.05	0.05	0.57	0.00	0.12	0.00	0.13	0.00	0.00	0.01		101.13		0.01		101.25
Total	**0.21**	**1.62**	**1.48**	**0.00**	**0.87**	**0.07**	**0.95**	**0.01**	**0.07**	**0.09**		**371.07**		**0.02**		**371.36**

4.0 Mobile Detail

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	lb/day										lb/day					
Architectural Coating	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Hermosa Beach

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	56628	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - There is one office, 625 sqft, located on the site.

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Backhow - Increased to 120 hp.

Off-road Equipment - Adjust hours per day to 7 to account for daily usage

Off-road Equipment - Adjusted deualt to project specific data.

Off-road Equipment - Hours per day adjusted to account for actual equipment usage

Off-road Equipment - One flatbed truck used for phase.

Off-road Equipment - Added off-highway trucks to account for concrete trucks, pumper truck, and tractor-trailer trucks

Off-road Equipment - Adjusted hours per dayto account for length of phase.

Off-road Equipment - Adjusted hours per day to account for length of phase.

Off-road Equipment - Adjust hours per day to account for phase length.

Off-road Equipment - Equipment list per project design

Trips and VMT - Number of workers and total trips hauling revised per project specifications.

Demolition -

Grading - Actual acerage disturbed entered

Vehicle Trips - No operational vehicle trips during this pahse of the project.

Woodstoves - No operational area emissions during this phase of the project

Energy Use - No onsite power required during this phase of the project.

Solid Waste - Assume one ton/week of municipal waste generation and disposal.

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - The project proposes to install onsight power generation using microturbines to provide 50% of the facilities power demand.

Off-road Equipment - Add bore/drill rig for auger.

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					
2014	2.70	18.80	13.58	0.03	8.96	1.39	9.89	0.03	1.39	1.40	0.00	2,688.52	0.00	0.24	0.00	2,693.58
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	2.70	18.80	13.58	0.03	5.70	1.39	6.63	0.03	1.39	1.40	0.00	2,688.52	0.00	0.24	0.00	2,693.58
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	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
Total	**1.48**	**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**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	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
Total	**1.48**	**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

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Relocate Electrical Service - 2014

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	0.71	4.75	3.92	0.01		0.38	0.38		0.38	0.38		578.30		0.06		579.63
Total	**0.71**	**4.75**	**3.92**	**0.01**		**0.38**	**0.38**		**0.38**	**0.38**		**578.30**		**0.06**		**579.63**

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	0.01	0.10	0.06	0.00	0.12	0.00	0.12	0.00	0.00	0.00		16.79		0.00		16.80
Vendor	0.03	0.32	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.06		0.00		55.09
Worker	0.07	0.07	0.68	0.00	0.15	0.01	0.16	0.01	0.01	0.01		117.11		0.01		117.25
Total	**0.11**	**0.49**	**0.97**	**0.00**	**0.29**	**0.02**	**0.31**	**0.01**	**0.02**	**0.02**		**188.96**		**0.01**		**189.14**

3.2 A. Relocate Electrical Service - 2014

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	0.71	4.75	3.92	0.01		0.38	0.38		0.38	0.38	0.00	578.30		0.06		579.63
Total	**0.71**	**4.75**	**3.92**	**0.01**		**0.38**	**0.38**		**0.38**	**0.38**	**0.00**	**578.30**		**0.06**		**579.63**

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	0.01	0.10	0.06	0.00	0.12	0.00	0.12	0.00	0.00	0.00		16.79		0.00		16.80
Vendor	0.03	0.32	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.06		0.00		55.09
Worker	0.07	0.07	0.68	0.00	0.15	0.01	0.16	0.01	0.01	0.01		117.11		0.01		117.25
Total	**0.11**	**0.49**	**0.97**	**0.00**	**0.29**	**0.02**	**0.31**	**0.01**	**0.02**	**0.02**		**188.96**		**0.01**		**189.14**

3.3 B. Remove Buildings - 2014

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					1.34	0.00	1.34	0.00	0.00	0.00						0.00
Off-Road	0.63	3.95	2.88	0.00		0.33	0.33		0.33	0.33		411.65		0.06		412.83
Total	**0.63**	**3.95**	**2.88**	**0.00**	**1.34**	**0.33**	**1.67**	**0.00**	**0.33**	**0.33**		**411.65**		**0.06**		**412.83**

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	0.13	1.29	0.77	0.00	1.17	0.05	1.22	0.01	0.05	0.06		209.89		0.01		210.02
Vendor	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
Worker	0.05	0.06	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.69		0.01		93.80
Total	**0.18**	**1.35**	**1.31**	**0.00**	**1.29**	**0.05**	**1.35**	**0.01**	**0.05**	**0.07**		**303.58**		**0.02**		**303.82**

3.3 B. Remove Buildings - 2014

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					0.52	0.00	0.52	0.00	0.00	0.00						0.00
Off-Road	0.63	3.95	2.88	0.00		0.33	0.33		0.33	0.33	0.00	411.65		0.06		412.83
Total	**0.63**	**3.95**	**2.88**	**0.00**	**0.52**	**0.33**	**0.85**	**0.00**	**0.33**	**0.33**	**0.00**	**411.65**		**0.06**		**412.83**

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	0.13	1.29	0.77	0.00	1.17	0.05	1.22	0.01	0.05	0.06		209.89		0.01		210.02
Vendor	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
Worker	0.05	0.06	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.69		0.01		93.80
Total	**0.18**	**1.35**	**1.31**	**0.00**	**1.29**	**0.05**	**1.35**	**0.01**	**0.05**	**0.07**		**303.58**		**0.02**		**303.82**

3.4 K. Modify Intersection 6th Street / Valley Drive - 2014

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					0.01	0.00	0.01	0.00	0.00	0.00						0.00
Off-Road	2.59	16.50	11.69	0.02		1.37	1.37		1.37	1.37		1,684.54		0.23		1,689.42
Total	**2.59**	**16.50**	**11.69**	**0.02**	**0.01**	**1.37**	**1.38**	**0.00**	**1.37**	**1.37**		**1,684.54**		**0.23**		**1,689.42**

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	0.06	0.54	0.32	0.00	0.49	0.02	0.51	0.00	0.02	0.03		88.15		0.00		88.21
Vendor	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
Worker	0.05	0.06	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.69		0.01		93.80
Total	**0.11**	**0.60**	**0.86**	**0.00**	**0.61**	**0.02**	**0.64**	**0.00**	**0.02**	**0.04**		**181.84**		**0.01**		**182.01**

3.4 K. Modify Intersection 6th Street / Valley Drive - 2014

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					0.01	0.00	0.01	0.00	0.00	0.00						0.00
Off-Road	2.59	16.50	11.69	0.02		1.37	1.37		1.37	1.37	0.00	1,684.54		0.23		1,689.42
Total	**2.59**	**16.50**	**11.69**	**0.02**	**0.01**	**1.37**	**1.38**	**0.00**	**1.37**	**1.37**	**0.00**	**1,684.54**		**0.23**		**1,689.42**

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	0.06	0.54	0.32	0.00	0.49	0.02	0.51	0.00	0.02	0.03		88.15		0.00		88.21
Vendor	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
Worker	0.05	0.06	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.69		0.01		93.80
Total	**0.11**	**0.60**	**0.86**	**0.00**	**0.61**	**0.02**	**0.64**	**0.00**	**0.02**	**0.04**		**181.84**		**0.01**		**182.01**

3.5 C. Remove paving, masonry walls - 2014

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					5.35	0.00	5.35	0.00	0.00	0.00						0.00
Off-Road	1.68	13.62	10.11	0.02		0.71	0.71		0.71	0.71		1,778.72		0.15		1,781.87
Total	**1.68**	**13.62**	**10.11**	**0.02**	**5.35**	**0.71**	**6.06**	**0.00**	**0.71**	**0.71**		**1,778.72**		**0.15**		**1,781.87**

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	0.52	5.15	3.06	0.01	3.52	0.22	3.73	0.03	0.22	0.24		839.54		0.03		840.08
Vendor	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
Worker	0.04	0.04	0.41	0.00	0.09	0.00	0.10	0.00	0.00	0.01		70.26		0.00		70.35
Total	**0.56**	**5.19**	**3.47**	**0.01**	**3.61**	**0.22**	**3.83**	**0.03**	**0.22**	**0.25**		**909.80**		**0.03**		**910.43**

3.5 C. Remove paving, masonry walls - 2014

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					2.09	0.00	2.09	0.00	0.00	0.00						0.00
Off-Road	1.68	13.62	10.11	0.02		0.71	0.71		0.71	0.71	0.00	1,778.72		0.15		1,781.87
Total	**1.68**	**13.62**	**10.11**	**0.02**	**2.09**	**0.71**	**2.80**	**0.00**	**0.71**	**0.71**	**0.00**	**1,778.72**		**0.15**		**1,781.87**

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	0.52	5.15	3.06	0.01	3.52	0.22	3.73	0.03	0.22	0.24		839.54		0.03		840.08
Vendor	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
Worker	0.04	0.04	0.41	0.00	0.09	0.00	0.10	0.00	0.00	0.01		70.26		0.00		70.35
Total	**0.56**	**5.19**	**3.47**	**0.01**	**3.61**	**0.22**	**3.83**	**0.03**	**0.22**	**0.25**		**909.80**		**0.03**		**910.43**

3.6 D. Construct Fence / Retaining Walls - 2014

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	0.29	2.97	3.27	0.01		0.14	0.14		0.14	0.14		538.87		0.03		539.41
Total	**0.29**	**2.97**	**3.27**	**0.01**		**0.14**	**0.14**		**0.14**	**0.14**		**538.87**		**0.03**		**539.41**

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	0.04	0.41	0.25	0.00	0.56	0.02	0.58	0.00	0.02	0.02		67.16		0.00		67.21
Vendor	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
Worker	0.09	0.10	0.95	0.00	0.21	0.01	0.22	0.01	0.01	0.02		163.95		0.01		164.15
Total	**0.13**	**0.51**	**1.20**	**0.00**	**0.77**	**0.03**	**0.80**	**0.01**	**0.03**	**0.04**		**231.11**		**0.01**		**231.36**

3.6 D. Construct Fence / Retaining Walls - 2014

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	0.29	2.97	3.27	0.01		0.14	0.14		0.14	0.14	0.00	538.87		0.03		539.41
Total	**0.29**	**2.97**	**3.27**	**0.01**		**0.14**	**0.14**		**0.14**	**0.14**	**0.00**	**538.87**		**0.03**		**539.41**

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	0.04	0.41	0.25	0.00	0.56	0.02	0.58	0.00	0.02	0.02		67.16		0.00		67.21
Vendor	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
Worker	0.09	0.10	0.95	0.00	0.21	0.01	0.22	0.01	0.01	0.02		163.95		0.01		164.15
Total	**0.13**	**0.51**	**1.20**	**0.00**	**0.77**	**0.03**	**0.80**	**0.01**	**0.03**	**0.04**		**231.11**		**0.01**		**231.36**

3.7 E. Rough Grading - 2014

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					0.08	0.00	0.08	0.00	0.00	0.00						0.00
Off-Road	0.97	6.39	4.47	0.01		0.50	0.50		0.50	0.50		671.96		0.09		673.78
Total	**0.97**	**6.39**	**4.47**	**0.01**	**0.08**	**0.50**	**0.58**	**0.00**	**0.50**	**0.50**		**671.96**		**0.09**		**673.78**

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	0.31	3.09	1.84	0.00	2.81	0.13	2.94	0.02	0.13	0.15		503.73		0.02		504.05
Vendor	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
Worker	0.07	0.07	0.68	0.00	0.15	0.01	0.16	0.01	0.01	0.01		117.11		0.01		117.25
Total	**0.38**	**3.16**	**2.52**	**0.00**	**2.96**	**0.14**	**3.10**	**0.03**	**0.14**	**0.16**		**620.84**		**0.03**		**621.30**

3.7 E. Rough Grading - 2014

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					0.03	0.00	0.03	0.00	0.00	0.00						0.00
Off-Road	0.97	6.39	4.47	0.01		0.50	0.50		0.50	0.50	0.00	671.96		0.09		673.78
Total	**0.97**	**6.39**	**4.47**	**0.01**	**0.03**	**0.50**	**0.53**	**0.00**	**0.50**	**0.50**	**0.00**	**671.96**		**0.09**		**673.78**

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	0.31	3.09	1.84	0.00	2.81	0.13	2.94	0.02	0.13	0.15		503.73		0.02		504.05
Vendor	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
Worker	0.07	0.07	0.68	0.00	0.15	0.01	0.16	0.01	0.01	0.01		117.11		0.01		117.25
Total	**0.38**	**3.16**	**2.52**	**0.00**	**2.96**	**0.14**	**3.10**	**0.03**	**0.14**	**0.16**		**620.84**		**0.03**		**621.30**

3.8 G. Construct Well Cellar - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.04	0.41	0.25	0.00	0.19	0.02	0.21	0.00	0.02	0.02		67.16		0.00		67.21
Vendor	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
Worker	0.05	0.06	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.69		0.01		93.80
Total	**0.09**	**0.47**	**0.79**	**0.00**	**0.31**	**0.02**	**0.34**	**0.00**	**0.02**	**0.03**		**160.85**		**0.01**		**161.01**

3.8 G. Construct Well Cellar - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.04	0.41	0.25	0.00	0.19	0.02	0.21	0.00	0.02	0.02		67.16		0.00		67.21
Vendor	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
Worker	0.05	0.06	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.69		0.01		93.80
Total	**0.09**	**0.47**	**0.79**	**0.00**	**0.31**	**0.02**	**0.34**	**0.00**	**0.02**	**0.03**		**160.85**		**0.01**		**161.01**

3.9 I. Landscaping - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.01	0.10	0.06	0.00	0.05	0.00	0.05	0.00	0.00	0.00		16.79		0.00		16.80
Vendor	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
Worker	0.01	0.01	0.14	0.00	0.03	0.00	0.03	0.00	0.00	0.00		23.42		0.00		23.45
Total	**0.02**	**0.11**	**0.20**	**0.00**	**0.08**	**0.00**	**0.08**	**0.00**	**0.00**	**0.00**		**40.21**		**0.00**		**40.25**

3.9 I. Landscaping - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.01	0.10	0.06	0.00	0.05	0.00	0.05	0.00	0.00	0.00		16.79		0.00		16.80
Vendor	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
Worker	0.01	0.01	0.14	0.00	0.03	0.00	0.03	0.00	0.00	0.00		23.42		0.00		23.45
Total	**0.02**	**0.11**	**0.20**	**0.00**	**0.08**	**0.00**	**0.08**	**0.00**	**0.00**	**0.00**		**40.21**		**0.00**		**40.25**

3.10 F. Construct 6-foot Chain Link Fence - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.07	0.64	0.38	0.00	0.12	0.03	0.15	0.00	0.03	0.03		104.94		0.00		105.01
Vendor	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
Worker	0.03	0.03	0.27	0.00	0.06	0.00	0.06	0.00	0.00	0.00		46.84		0.00		46.90
Total	**0.10**	**0.67**	**0.65**	**0.00**	**0.18**	**0.03**	**0.21**	**0.00**	**0.03**	**0.03**		**151.78**		**0.00**		**151.91**

3.10 F. Construct 6-foot Chain Link Fence - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.07	0.64	0.38	0.00	0.12	0.03	0.15	0.00	0.03	0.03		104.94		0.00		105.01
Vendor	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
Worker	0.03	0.03	0.27	0.00	0.06	0.00	0.06	0.00	0.00	0.00		46.84		0.00		46.90
Total	**0.10**	**0.67**	**0.65**	**0.00**	**0.18**	**0.03**	**0.21**	**0.00**	**0.03**	**0.03**		**151.78**		**0.00**		**151.91**

3.11 H. Install Electrical Service - 2014

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	1.29	10.65	5.05	0.01		0.52	0.52		0.52	0.52		1,308.71		0.11		1,311.12
Total	**1.29**	**10.65**	**5.05**	**0.01**		**0.52**	**0.52**		**0.52**	**0.52**		**1,308.71**		**0.11**		**1,311.12**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.17	1.77	1.24	0.00	0.10	0.06	0.16	0.01	0.06	0.07		302.82		0.01		302.99
Worker	0.10	0.11	1.02	0.00	0.23	0.01	0.24	0.01	0.01	0.02		175.66		0.01		175.88
Total	**0.27**	**1.88**	**2.26**	**0.00**	**0.33**	**0.07**	**0.40**	**0.02**	**0.07**	**0.09**		**478.48**		**0.02**		**478.87**

3.11 H. Install Electrical Service - 2014

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	1.29	10.65	5.05	0.01		0.52	0.52		0.52	0.52	0.00	1,308.71		0.11		1,311.12
Total	**1.29**	**10.65**	**5.05**	**0.01**		**0.52**	**0.52**		**0.52**	**0.52**	**0.00**	**1,308.71**		**0.11**		**1,311.12**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.17	1.77	1.24	0.00	0.10	0.06	0.16	0.01	0.06	0.07		302.82		0.01		302.99
Worker	0.10	0.11	1.02	0.00	0.23	0.01	0.24	0.01	0.01	0.02		175.66		0.01		175.88
Total	**0.27**	**1.88**	**2.26**	**0.00**	**0.33**	**0.07**	**0.40**	**0.02**	**0.07**	**0.09**		**478.48**		**0.02**		**478.87**

3.12 J. Construct Sound Attenuation Wall - 2014

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	1.73	15.74	8.16	0.02		0.63	0.63		0.63	0.63		2,141.07		0.15		2,144.30
Total	**1.73**	**15.74**	**8.16**	**0.02**		**0.63**	**0.63**		**0.63**	**0.63**		**2,141.07**		**0.15**		**2,144.30**

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	0.17	1.65	0.98	0.00	0.75	0.07	0.82	0.01	0.07	0.08		268.65		0.01		268.82
Vendor	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
Worker	0.05	0.06	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.69		0.01		93.80
Total	**0.22**	**1.71**	**1.52**	**0.00**	**0.87**	**0.07**	**0.95**	**0.01**	**0.07**	**0.09**		**362.34**		**0.02**		**362.62**

3.12 J. Construct Sound Attenuation Wall - 2014

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	1.73	15.74	8.16	0.02		0.63	0.63		0.63	0.63	0.00	2,141.07		0.15		2,144.30
Total	**1.73**	**15.74**	**8.16**	**0.02**		**0.63**	**0.63**		**0.63**	**0.63**	**0.00**	**2,141.07**		**0.15**		**2,144.30**

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	0.17	1.65	0.98	0.00	0.75	0.07	0.82	0.01	0.07	0.08		268.65		0.01		268.82
Vendor	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
Worker	0.05	0.06	0.54	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.69		0.01		93.80
Total	**0.22**	**1.71**	**1.52**	**0.00**	**0.87**	**0.07**	**0.95**	**0.01**	**0.07**	**0.09**		**362.34**		**0.02**		**362.62**

4.0 Mobile Detail

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	lb/day										lb/day					
Architectural Coating	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

PHASE 2 – DRILLING AND TESTING

Hermosa Beach

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1.3	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - There is one office, 625 sqft, located on the site.

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Equipment based on engineering est.

Off-road Equipment - Adjusted for actual equipment use

Off-road Equipment - Equipment modified to reflect actual equipment usage.

Off-road Equipment - Equipment modified to include actual

Off-road Equipment - Equipment modified to include actual.

Trips and VMT - Total hauling trips based on engineering estimates.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips - Operational emissions include 1) one site operator vehicle per day, and 2) tractor-trailer oil hauling dtucks per day.
Assume that site operater trip length (C-C) is default length. Use default for tranport of oil (C-W)

Vechicle Emission Factors - Only a light duty vehicle (LDT2) and truck-trailer oil transports (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty vehicle (LDT2) and oil transport (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty truck (LDT2) and oil transports (HHD) are included in operational vehicle emissions.

Woodstoves -

Energy Use - Driling rig electrical usage is 50,000 kwh. Operations is 266 kWh.

Water And Wastewater - Indoor Water 156950. (86 gpe X 5 X 365) Use, Table C-1, Misc. Manufacturing, Gleick, P.H.; et.al.. 2003 Published by the Pacific Institute for Studies
Outdoor assume 5 gpm, eight hoursper day, 365 days per year.

Solid Waste - Based on 7.2 tons/yr, assume 10x to be conservative

Energy Mitigation -

Water Mitigation -

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					
2014	0.07	0.52	0.37	0.00	0.25	0.02	0.28	0.00	0.02	0.03	0.00	77.32	77.32	0.00	0.00	77.42
2015	0.08	0.51	0.30	0.00	0.04	0.02	0.06	0.00	0.02	0.02	0.00	69.93	69.93	0.01	0.00	70.07
Total	**0.15**	**1.03**	**0.67**	**0.00**	**0.29**	**0.04**	**0.34**	**0.00**	**0.04**	**0.05**	**0.00**	**147.25**	**147.25**	**0.01**	**0.00**	**147.49**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.07	0.52	0.37	0.00	0.25	0.02	0.28	0.00	0.02	0.03	0.00	77.32	77.32	0.00	0.00	77.42
2015	0.08	0.51	0.30	0.00	0.04	0.02	0.06	0.00	0.02	0.02	0.00	69.93	69.93	0.01	0.00	70.07
Total	**0.15**	**1.03**	**0.67**	**0.00**	**0.29**	**0.04**	**0.34**	**0.00**	**0.04**	**0.05**	**0.00**	**147.25**	**147.25**	**0.01**	**0.00**	**147.49**

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	0.27	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
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	1,976.57	1,976.57	0.09	0.03	1,988.96
Mobile	0.17	1.50	1.07	0.00	0.06	0.07	0.13	0.01	0.07	0.07	0.00	174.69	174.69	0.01	0.00	174.84
Waste						0.00	0.00		0.00	0.00	14.62	0.00	14.62	0.86	0.00	32.75
Water						0.00	0.00		0.00	0.00	0.00	3.43	3.43	0.00	0.00	3.59
Total	**0.44**	**1.50**	**1.07**	**0.00**	**0.06**	**0.07**	**0.13**	**0.01**	**0.07**	**0.07**	**14.62**	**2,154.69**	**2,169.31**	**0.96**	**0.03**	**2,200.14**

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	0.27	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
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	1,976.57	1,976.57	0.09	0.03	1,988.96
Mobile	0.17	1.50	1.07	0.00	0.06	0.07	0.13	0.01	0.07	0.07	0.00	174.69	174.69	0.01	0.00	174.84
Waste						0.00	0.00		0.00	0.00	14.62	0.00	14.62	0.86	0.00	32.75
Water						0.00	0.00		0.00	0.00	0.00	3.31	3.31	0.00	0.00	3.44
Total	**0.44**	**1.50**	**1.07**	**0.00**	**0.06**	**0.07**	**0.13**	**0.01**	**0.07**	**0.07**	**14.62**	**2,154.57**	**2,169.19**	**0.96**	**0.03**	**2,199.99**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Install Temporary Trailer - 2014

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	0.00	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
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	0.00	0.00	0.11
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.08
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.19**	**0.19**	**0.00**	**0.00**	**0.19**

3.2 A. Install Temporary Trailer - 2014

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	0.00	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
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	0.00	0.00	0.11
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.08
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.19**	**0.19**	**0.00**	**0.00**	**0.19**

3.3 B. Deliver Drilling Rig and Equipment - 2014

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	0.01	0.08	0.05	0.00		0.00	0.00		0.00	0.00	0.00	10.66	10.66	0.00	0.00	10.68
Total	**0.01**	**0.08**	**0.05**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**10.66**	**10.66**	**0.00**	**0.00**	**10.68**

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	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.88	0.00	0.00	0.88
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	1.30	0.00	0.00	1.31
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.18**	**2.18**	**0.00**	**0.00**	**2.19**

3.3 B. Deliver Drilling Rig and Equipment - 2014

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	0.01	0.08	0.05	0.00		0.00	0.00		0.00	0.00	0.00	10.66	10.66	0.00	0.00	10.68
Total	**0.01**	**0.08**	**0.05**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**10.66**	**10.66**	**0.00**	**0.00**	**10.68**

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	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.88	0.88	0.00	0.00	0.88
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.30	1.30	0.00	0.00	1.31
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.18**	**2.18**	**0.00**	**0.00**	**2.19**

3.4 C. Drill three test wells and one water injection well Remove paving, masonry walls - 2014

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	0.01	0.10	0.10	0.00		0.00	0.00		0.00	0.00	0.00	14.47	14.47	0.00	0.00	14.49
Total	**0.01**	**0.10**	**0.10**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**14.47**	**14.47**	**0.00**	**0.00**	**14.49**

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	0.02	0.18	0.11	0.00	0.24	0.01	0.24	0.00	0.01	0.01	0.00	28.87	28.87	0.00	0.00	28.89
Vendor	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
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	3.26	0.00	0.00	3.27
Total	**0.02**	**0.18**	**0.13**	**0.00**	**0.24**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**	**0.00**	**32.13**	**32.13**	**0.00**	**0.00**	**32.16**

3.4 C. Drill three test wells and one water injection well Remove paving, masonry walls - 2014

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	0.01	0.10	0.10	0.00		0.00	0.00		0.00	0.00	0.00	14.47	14.47	0.00	0.00	14.49
Total	**0.01**	**0.10**	**0.10**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**14.47**	**14.47**	**0.00**	**0.00**	**14.49**

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	0.02	0.18	0.11	0.00	0.24	0.01	0.24	0.00	0.01	0.01	0.00	28.87	28.87	0.00	0.00	28.89
Vendor	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
Worker	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.26	3.26	0.00	0.00	3.27
Total	**0.02**	**0.18**	**0.13**	**0.00**	**0.24**	**0.01**	**0.24**	**0.00**	**0.01**	**0.01**	**0.00**	**32.13**	**32.13**	**0.00**	**0.00**	**32.16**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2014

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	0.02	0.13	0.06	0.00		0.01	0.01		0.01	0.01	0.00	14.50	14.50	0.00	0.00	14.54
Total	**0.02**	**0.13**	**0.06**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**14.50**	**14.50**	**0.00**	**0.00**	**14.54**

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	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.19	0.19	0.00	0.00	0.19
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09	1.09	0.00	0.00	1.09
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	1.89	0.00	0.00	1.89
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.17**	**3.17**	**0.00**	**0.00**	**3.17**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2014

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	0.02	0.13	0.06	0.00		0.01	0.01		0.01	0.01	0.00	14.50	14.50	0.00	0.00	14.54
Total	**0.02**	**0.13**	**0.06**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**14.50**	**14.50**	**0.00**	**0.00**	**14.54**

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	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.19	0.19	0.00	0.00	0.19
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09	1.09	0.00	0.00	1.09
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	1.89	0.00	0.00	1.89
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**3.17**	**3.17**	**0.00**	**0.00**	**3.17**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2015

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	0.07	0.44	0.22	0.00		0.02	0.02		0.02	0.02	0.00	52.01	52.01	0.01	0.00	52.14
Total	**0.07**	**0.44**	**0.22**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**52.01**	**52.01**	**0.01**	**0.00**	**52.14**

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	0.00	0.00	0.00	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.69	0.69	0.00	0.00	0.69
Vendor	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92	3.92	0.00	0.00	3.92
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.65	6.65	0.00	0.00	6.66
Total	**0.00**	**0.02**	**0.06**	**0.00**	**0.03**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**11.26**	**11.26**	**0.00**	**0.00**	**11.27**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2015

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	0.07	0.44	0.22	0.00		0.02	0.02		0.02	0.02	0.00	52.01	52.01	0.01	0.00	52.14
Total	**0.07**	**0.44**	**0.22**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**52.01**	**52.01**	**0.01**	**0.00**	**52.14**

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	0.00	0.00	0.00	0.00	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.69	0.69	0.00	0.00	0.69
Vendor	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92	3.92	0.00	0.00	3.92
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.65	6.65	0.00	0.00	6.66
Total	**0.00**	**0.02**	**0.06**	**0.00**	**0.03**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**11.26**	**11.26**	**0.00**	**0.00**	**11.27**

3.6 E. Remove drill rig and associated equipment. - 2015

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	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00	0.00	4.06	4.06	0.00	0.00	4.07
Total	**0.00**	**0.03**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**4.06**	**4.06**	**0.00**	**0.00**	**4.07**

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	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	1.53	0.00	0.00	1.53
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07	1.07	0.00	0.00	1.07
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.60**	**2.60**	**0.00**	**0.00**	**2.60**

3.6 E. Remove drill rig and associated equipment. - 2015

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	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00	0.00	4.06	4.06	0.00	0.00	4.07
Total	**0.00**	**0.03**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**4.06**	**4.06**	**0.00**	**0.00**	**4.07**

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	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	1.53	0.00	0.00	1.53
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07	1.07	0.00	0.00	1.07
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.60**	**2.60**	**0.00**	**0.00**	**2.60**

4.0 Mobile Detail

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	0.17	1.50	1.07	0.00	0.06	0.07	0.13	0.01	0.07	0.07	0.00	174.69	174.69	0.01	0.00	174.84
Unmitigated	0.17	1.50	1.07	0.00	0.06	0.07	0.13	0.01	0.07	0.07	0.00	174.69	174.69	0.01	0.00	174.84
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	20.80	20.80	20.80	107,132	107,132
Total	20.80	20.80	20.80	107,132	107,132

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	100.00	0.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	1,976.57	1,976.57	0.09	0.03	1,988.96
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	1,976.57	1,976.57	0.09	0.03	1,988.96
NaturalGas Mitigated	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
NaturalGas Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

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	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	6.79536e+006					1,976.57	0.09	0.03	1,988.96
Total						**1,976.57**	**0.09**	**0.03**	**1,988.96**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	6.79536e+006					1,976.57	0.09	0.03	1,988.96
Total						**1,976.57**	**0.09**	**0.03**	**1,988.96**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	0.27	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
Unmitigated	0.27	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.07					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.20					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.27**	**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**

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	0.07					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.20					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.27**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					3.31	0.00	0.00	3.44
Unmitigated					3.43	0.00	0.00	3.59
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0.15695 / 0.876					3.43	0.00	0.00	3.59
Total						**3.43**	**0.00**	**0.00**	**3.59**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0.12556 / 0.876					3.31	0.00	0.00	3.44
Total						**3.31**	**0.00**	**0.00**	**3.44**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					14.62	0.86	0.00	32.75
Unmitigated					14.62	0.86	0.00	32.75
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	72					14.62	0.86	0.00	32.75
Total						**14.62**	**0.86**	**0.00**	**32.75**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	72					14.62	0.86	0.00	32.75
Total						**14.62**	**0.86**	**0.00**	**32.75**

9.0 Vegetation

Hermosa Beach

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1.3	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - There is one office, 625 sqft, located on the site.

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Equipment based on engineering est.

Off-road Equipment - Adjusted for actual equipment use

Off-road Equipment - Equipment modified to reflect actual equipment usage.

Off-road Equipment - Equipment modified to include actual

Off-road Equipment - Equipment modified to include actual.

Trips and VMT - Total hauling trips based on engineering estimates.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips - Operational emissions include 1) one site operator vehicle per day, and 2) tractor-trailer oil hauling dtucks per day.
Assume that site operater trip length (C-C) is default length. Use default for tranport of oil (C-W)

Vechicle Emission Factors - Only a light duty vehicle (LDT2) and truck-trailer oil transports (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty vehicle (LDT2) and oil transport (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty truck (LDT2) and oil transports (HHD) are included in operational vehicle emissions.

Woodstoves -

Energy Use - Driling rig electrical usage is 50,000 kwh. Operations is 266 kWh.

Water And Wastewater - Indoor Water 156950. (86 gpe X 5 X 365) Use, Table C-1, Misc. Manufacturing, Gleick, P.H.; et.al.. 2003 Published by the Pacific Institute for Studies
Outdoor assume 5 gpm, eight hoursper day, 365 days per year.

Solid Waste - Based on 7.2 tons/yr, assume 10x to be conservative

Energy Mitigation -

Water Mitigation -

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					
2014	2.16	18.92	14.95	0.03	17.97	0.88	18.85	0.08	0.88	0.96	0.00	3,442.09	0.00	0.15	0.00	3,445.34
2015	1.48	9.04	5.30	0.02	1.25	0.41	1.56	0.02	0.41	0.42	0.00	1,481.79	0.00	0.13	0.00	1,484.58
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	2.16	18.92	14.95	0.03	17.97	0.88	18.85	0.08	0.88	0.96	0.00	3,442.09	0.00	0.15	0.00	3,445.34
2015	1.48	9.04	5.30	0.02	1.25	0.41	1.56	0.02	0.41	0.42	0.00	1,481.79	0.00	0.13	0.00	1,484.58
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.91	8.25	5.66	0.01	0.37	0.36	0.73	0.03	0.36	0.39		1,063.54		0.04		1,064.45
Total	**2.39**	**8.25**	**5.66**	**0.01**	**0.37**	**0.36**	**0.73**	**0.03**	**0.36**	**0.39**		**1,063.54**		**0.04**	**0.00**	**1,064.45**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.91	8.25	5.66	0.01	0.37	0.36	0.73	0.03	0.36	0.39		1,063.54		0.04		1,064.45
Total	**2.39**	**8.25**	**5.66**	**0.01**	**0.37**	**0.36**	**0.73**	**0.03**	**0.36**	**0.39**		**1,063.54**		**0.04**	**0.00**	**1,064.45**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Install Temporary Trailer - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.05	0.49	0.28	0.00	0.07	0.02	0.09	0.00	0.02	0.02		84.36		0.00		84.41
Vendor	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
Worker	0.03	0.03	0.36	0.00	0.08	0.00	0.08	0.00	0.00	0.01		63.20		0.00		63.28
Total	**0.08**	**0.52**	**0.64**	**0.00**	**0.15**	**0.02**	**0.17**	**0.00**	**0.02**	**0.03**		**147.56**		**0.00**		**147.69**

3.2 A. Install Temporary Trailer - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.05	0.49	0.28	0.00	0.07	0.02	0.09	0.00	0.02	0.02		84.36		0.00		84.41
Vendor	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
Worker	0.03	0.03	0.36	0.00	0.08	0.00	0.08	0.00	0.00	0.01		63.20		0.00		63.28
Total	**0.08**	**0.52**	**0.64**	**0.00**	**0.15**	**0.02**	**0.17**	**0.00**	**0.02**	**0.03**		**147.56**		**0.00**		**147.69**

3.3 B. Deliver Drilling Rig and Equipment - 2014

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	1.52	13.73	8.63	0.02		0.58	0.58		0.58	0.58		1,959.12		0.14		1,961.96
Total	**1.52**	**13.73**	**8.63**	**0.02**		**0.58**	**0.58**		**0.58**	**0.58**		**1,959.12**		**0.14**		**1,961.96**

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	0.10	0.94	0.54	0.00	0.54	0.04	0.58	0.01	0.04	0.05		161.68		0.00		161.78
Vendor	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
Worker	0.12	0.12	1.44	0.00	0.31	0.01	0.32	0.01	0.01	0.02		252.82		0.01		253.12
Total	**0.22**	**1.06**	**1.98**	**0.00**	**0.85**	**0.05**	**0.90**	**0.02**	**0.05**	**0.07**		**414.50**		**0.01**		**414.90**

3.3 B. Deliver Drilling Rig and Equipment - 2014

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	1.52	13.73	8.63	0.02		0.58	0.58		0.58	0.58	0.00	1,959.12		0.14		1,961.96
Total	**1.52**	**13.73**	**8.63**	**0.02**		**0.58**	**0.58**		**0.58**	**0.58**	**0.00**	**1,959.12**		**0.14**		**1,961.96**

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	0.10	0.94	0.54	0.00	0.54	0.04	0.58	0.01	0.04	0.05		161.68		0.00		161.78
Vendor	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
Worker	0.12	0.12	1.44	0.00	0.31	0.01	0.32	0.01	0.01	0.02		252.82		0.01		253.12
Total	**0.22**	**1.06**	**1.98**	**0.00**	**0.85**	**0.05**	**0.90**	**0.02**	**0.05**	**0.07**		**414.50**		**0.01**		**414.90**

3.4 C. Drill three test wells and one water injection well Remove paving, masonry walls - 2014

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	0.74	6.47	6.38	0.01		0.33	0.33		0.33	0.33		1,063.47		0.07		1,064.87
Total	**0.74**	**6.47**	**6.38**	**0.01**		**0.33**	**0.33**		**0.33**	**0.33**		**1,063.47**		**0.07**		**1,064.87**

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	1.29	12.32	7.13	0.02	17.66	0.54	18.20	0.07	0.54	0.61		2,125.80		0.06		2,127.12
Vendor	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
Worker	0.12	0.12	1.44	0.00	0.31	0.01	0.32	0.01	0.01	0.02		252.82		0.01		253.12
Total	**1.41**	**12.44**	**8.57**	**0.02**	**17.97**	**0.55**	**18.52**	**0.08**	**0.55**	**0.63**		**2,378.62**		**0.07**		**2,380.24**

3.4 C. Drill three test wells and one water injection well Remove paving, masonry walls - 2014

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	0.74	6.47	6.38	0.01		0.33	0.33		0.33	0.33	0.00	1,063.47		0.07		1,064.87
Total	**0.74**	**6.47**	**6.38**	**0.01**		**0.33**	**0.33**		**0.33**	**0.33**	**0.00**	**1,063.47**		**0.07**		**1,064.87**

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	1.29	12.32	7.13	0.02	17.66	0.54	18.20	0.07	0.54	0.61		2,125.80		0.06		2,127.12
Vendor	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
Worker	0.12	0.12	1.44	0.00	0.31	0.01	0.32	0.01	0.01	0.02		252.82		0.01		253.12
Total	**1.41**	**12.44**	**8.57**	**0.02**	**17.97**	**0.55**	**18.52**	**0.08**	**0.55**	**0.63**		**2,378.62**		**0.07**		**2,380.24**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2014

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	1.47	9.19	4.35	0.01		0.42	0.42		0.42	0.42		1,102.93		0.13		1,105.70
Total	**1.47**	**9.19**	**4.35**	**0.01**		**0.42**	**0.42**		**0.42**	**0.42**		**1,102.93**		**0.13**		**1,105.70**

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	0.01	0.08	0.05	0.00	0.54	0.00	0.54	0.00	0.00	0.00		14.59		0.00		14.60
Vendor	0.04	0.46	0.30	0.00	0.03	0.02	0.04	0.00	0.02	0.02		83.19		0.00		83.24
Worker	0.07	0.07	0.86	0.00	0.18	0.01	0.19	0.01	0.01	0.01		151.69		0.01		151.87
Total	**0.12**	**0.61**	**1.21**	**0.00**	**0.75**	**0.03**	**0.77**	**0.01**	**0.03**	**0.03**		**249.47**		**0.01**		**249.71**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2014

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	1.47	9.19	4.35	0.01		0.42	0.42		0.42	0.42	0.00	1,102.93		0.13		1,105.70
Total	**1.47**	**9.19**	**4.35**	**0.01**		**0.42**	**0.42**		**0.42**	**0.42**	**0.00**	**1,102.93**		**0.13**		**1,105.70**

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	0.01	0.08	0.05	0.00	0.54	0.00	0.54	0.00	0.00	0.00		14.59		0.00		14.60
Vendor	0.04	0.46	0.30	0.00	0.03	0.02	0.04	0.00	0.02	0.02		83.19		0.00		83.24
Worker	0.07	0.07	0.86	0.00	0.18	0.01	0.19	0.01	0.01	0.01		151.69		0.01		151.87
Total	**0.12**	**0.61**	**1.21**	**0.00**	**0.75**	**0.03**	**0.77**	**0.01**	**0.03**	**0.03**		**249.47**		**0.01**		**249.71**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2015

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	1.36	8.48	4.19	0.01		0.39	0.39		0.39	0.39		1,102.93		0.12		1,105.50
Total	**1.36**	**8.48**	**4.19**	**0.01**		**0.39**	**0.39**		**0.39**	**0.39**		**1,102.93**		**0.12**		**1,105.50**

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	0.01	0.08	0.04	0.00	0.54	0.00	0.54	0.00	0.00	0.00		14.63		0.00		14.64
Vendor	0.04	0.42	0.27	0.00	0.03	0.01	0.04	0.00	0.01	0.02		83.40		0.00		83.44
Worker	0.07	0.07	0.79	0.00	0.18	0.01	0.19	0.01	0.01	0.01		148.65		0.01		148.82
Total	**0.12**	**0.57**	**1.10**	**0.00**	**0.75**	**0.02**	**0.77**	**0.01**	**0.02**	**0.03**		**246.68**		**0.01**		**246.90**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2015

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	1.36	8.48	4.19	0.01		0.39	0.39		0.39	0.39	0.00	1,102.93		0.12		1,105.50
Total	**1.36**	**8.48**	**4.19**	**0.01**		**0.39**	**0.39**		**0.39**	**0.39**	**0.00**	**1,102.93**		**0.12**		**1,105.50**

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	0.01	0.08	0.04	0.00	0.54	0.00	0.54	0.00	0.00	0.00		14.63		0.00		14.64
Vendor	0.04	0.42	0.27	0.00	0.03	0.01	0.04	0.00	0.01	0.02		83.40		0.00		83.44
Worker	0.07	0.07	0.79	0.00	0.18	0.01	0.19	0.01	0.01	0.01		148.65		0.01		148.82
Total	**0.12**	**0.57**	**1.10**	**0.00**	**0.75**	**0.02**	**0.77**	**0.01**	**0.02**	**0.03**		**246.68**		**0.01**		**246.90**

3.6 E. Remove drill rig and associated equipment. - 2015

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	0.74	6.61	2.17	0.01		0.23	0.23		0.23	0.23		895.64		0.07		897.03
Total	**0.74**	**6.61**	**2.17**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**		**895.64**		**0.07**		**897.03**

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	0.18	1.74	1.01	0.00	0.94	0.07	1.02	0.01	0.07	0.09		338.40		0.01		338.59
Vendor	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
Worker	0.12	0.11	1.32	0.00	0.31	0.01	0.32	0.01	0.01	0.02		247.74		0.01		248.03
Total	**0.30**	**1.85**	**2.33**	**0.00**	**1.25**	**0.08**	**1.34**	**0.02**	**0.08**	**0.11**		**586.14**		**0.02**		**586.62**

3.6 E. Remove drill rig and associated equipment. - 2015

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	0.74	6.61	2.17	0.01		0.23	0.23		0.23	0.23	0.00	895.64		0.07		897.03
Total	**0.74**	**6.61**	**2.17**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**895.64**		**0.07**		**897.03**

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	0.18	1.74	1.01	0.00	0.94	0.07	1.02	0.01	0.07	0.09		338.40		0.01		338.59
Vendor	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
Worker	0.12	0.11	1.32	0.00	0.31	0.01	0.32	0.01	0.01	0.02		247.74		0.01		248.03
Total	**0.30**	**1.85**	**2.33**	**0.00**	**1.25**	**0.08**	**1.34**	**0.02**	**0.08**	**0.11**		**586.14**		**0.02**		**586.62**

4.0 Mobile Detail

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	0.91	8.25	5.66	0.01	0.37	0.36	0.73	0.03	0.36	0.39		1,063.54		0.04		1,064.45
Unmitigated	0.91	8.25	5.66	0.01	0.37	0.36	0.73	0.03	0.36	0.39		1,063.54		0.04		1,064.45
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	20.80	20.80	20.80	107,132	107,132
Total	20.80	20.80	20.80	107,132	107,132

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	100.00	0.00

5.0 Energy Detail

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	lb/day										lb/day					
Architectural Coating	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Hermosa Beach

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1.3	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - There is one office, 625 sqft, located on the site.

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Equipment based on engineering est.

Off-road Equipment - Adjusted for actual equipment use

Off-road Equipment - Equipment modified to reflect actual equipment usage.

Off-road Equipment - Equipment modified to include actual

Off-road Equipment - Equipment modified to include actual.

Trips and VMT - Total hauling trips based on engineering estimates.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips - Operational emissions include 1) one site operator vehicle per day, and 2) tractor-trailer oil hauling dtucks per day.
Assume that site operater trip length (C-C) is default length. Use default for tranport of oil (C-W)

Vechicle Emission Factors - Only a light duty vehicle (LDT2) and truck-trailer oil transports (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty vehicle (LDT2) and oil transport (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty truck (LDT2) and oil transports (HHD) are included in operational vehicle emissions.

Woodstoves -

Energy Use - Driling rig electrical usage is 50,000 kwh. Operations is 266 kWh.

Water And Wastewater - Indoor Water 156950. (86 gpe X 5 X 365) Use, Table C-1, Misc. Manufacturing, Gleick, P.H.; et.al.. 2003 Published by the Pacific Institute for Studies
Outdoor assume 5 gpm, eight hoursper day, 365 days per year.

Solid Waste - Based on 7.2 tons/yr, assume 10x to be conservative

Energy Mitigation -

Water Mitigation -

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					
2014	2.20	19.58	15.46	0.03	17.97	0.89	18.85	0.08	0.89	0.97	0.00	3,413.34	0.00	0.15	0.00	3,416.58
2015	1.49	9.07	5.30	0.02	1.25	0.41	1.56	0.02	0.41	0.42	0.00	1,461.88	0.00	0.13	0.00	1,464.66
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	2.20	19.58	15.46	0.03	17.97	0.89	18.85	0.08	0.89	0.97	0.00	3,413.34	0.00	0.15	0.00	3,416.58
2015	1.49	9.07	5.30	0.02	1.25	0.41	1.56	0.02	0.41	0.42	0.00	1,461.88	0.00	0.13	0.00	1,464.66
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.95	8.71	6.03	0.01	0.37	0.37	0.74	0.03	0.37	0.40		1,052.52		0.04		1,053.46
Total	**2.43**	**8.71**	**6.03**	**0.01**	**0.37**	**0.37**	**0.74**	**0.03**	**0.37**	**0.40**		**1,052.52**		**0.04**	**0.00**	**1,053.46**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.95	8.71	6.03	0.01	0.37	0.37	0.74	0.03	0.37	0.40		1,052.52		0.04		1,053.46
Total	**2.43**	**8.71**	**6.03**	**0.01**	**0.37**	**0.37**	**0.74**	**0.03**	**0.37**	**0.40**		**1,052.52**		**0.04**	**0.00**	**1,053.46**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Install Temporary Trailer - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.05	0.51	0.31	0.00	0.07	0.02	0.09	0.00	0.02	0.02		83.95		0.00		84.01
Vendor	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
Worker	0.03	0.04	0.34	0.00	0.08	0.00	0.08	0.00	0.00	0.01		58.55		0.00		58.63
Total	**0.08**	**0.55**	**0.65**	**0.00**	**0.15**	**0.02**	**0.17**	**0.00**	**0.02**	**0.03**		**142.50**		**0.00**		**142.64**

3.2 A. Install Temporary Trailer - 2014

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.05	0.51	0.31	0.00	0.07	0.02	0.09	0.00	0.02	0.02		83.95		0.00		84.01
Vendor	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
Worker	0.03	0.04	0.34	0.00	0.08	0.00	0.08	0.00	0.00	0.01		58.55		0.00		58.63
Total	**0.08**	**0.55**	**0.65**	**0.00**	**0.15**	**0.02**	**0.17**	**0.00**	**0.02**	**0.03**		**142.50**		**0.00**		**142.64**

3.3 B. Deliver Drilling Rig and Equipment - 2014

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	1.52	13.73	8.63	0.02		0.58	0.58		0.58	0.58		1,959.12		0.14		1,961.96
Total	**1.52**	**13.73**	**8.63**	**0.02**		**0.58**	**0.58**		**0.58**	**0.58**		**1,959.12**		**0.14**		**1,961.96**

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	0.10	0.99	0.59	0.00	0.54	0.04	0.58	0.01	0.04	0.05		160.91		0.00		161.01
Vendor	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
Worker	0.14	0.14	1.36	0.00	0.31	0.01	0.32	0.01	0.01	0.02		234.22		0.01		234.51
Total	**0.24**	**1.13**	**1.95**	**0.00**	**0.85**	**0.05**	**0.90**	**0.02**	**0.05**	**0.07**		**395.13**		**0.01**		**395.52**

3.3 B. Deliver Drilling Rig and Equipment - 2014

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	1.52	13.73	8.63	0.02		0.58	0.58		0.58	0.58	0.00	1,959.12		0.14		1,961.96
Total	**1.52**	**13.73**	**8.63**	**0.02**		**0.58**	**0.58**		**0.58**	**0.58**	**0.00**	**1,959.12**		**0.14**		**1,961.96**

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	0.10	0.99	0.59	0.00	0.54	0.04	0.58	0.01	0.04	0.05		160.91		0.00		161.01
Vendor	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
Worker	0.14	0.14	1.36	0.00	0.31	0.01	0.32	0.01	0.01	0.02		234.22		0.01		234.51
Total	**0.24**	**1.13**	**1.95**	**0.00**	**0.85**	**0.05**	**0.90**	**0.02**	**0.05**	**0.07**		**395.13**		**0.01**		**395.52**

3.4 C. Drill three test wells and one water injection well Remove paving, masonry walls - 2014

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	0.74	6.47	6.38	0.01		0.33	0.33		0.33	0.33		1,063.47		0.07		1,064.87
Total	**0.74**	**6.47**	**6.38**	**0.01**		**0.33**	**0.33**		**0.33**	**0.33**		**1,063.47**		**0.07**		**1,064.87**

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	1.32	12.97	7.72	0.02	17.66	0.54	18.21	0.07	0.54	0.62		2,115.65		0.06		2,117.00
Vendor	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
Worker	0.14	0.14	1.36	0.00	0.31	0.01	0.32	0.01	0.01	0.02		234.22		0.01		234.51
Total	**1.46**	**13.11**	**9.08**	**0.02**	**17.97**	**0.55**	**18.53**	**0.08**	**0.55**	**0.64**		**2,349.87**		**0.07**		**2,351.51**

3.4 C. Drill three test wells and one water injection well Remove paving, masonry walls - 2014

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	0.74	6.47	6.38	0.01		0.33	0.33		0.33	0.33	0.00	1,063.47		0.07		1,064.87
Total	**0.74**	**6.47**	**6.38**	**0.01**		**0.33**	**0.33**		**0.33**	**0.33**	**0.00**	**1,063.47**		**0.07**		**1,064.87**

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	1.32	12.97	7.72	0.02	17.66	0.54	18.21	0.07	0.54	0.62		2,115.65		0.06		2,117.00
Vendor	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
Worker	0.14	0.14	1.36	0.00	0.31	0.01	0.32	0.01	0.01	0.02		234.22		0.01		234.51
Total	**1.46**	**13.11**	**9.08**	**0.02**	**17.97**	**0.55**	**18.53**	**0.08**	**0.55**	**0.64**		**2,349.87**		**0.07**		**2,351.51**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2014

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	1.47	9.19	4.35	0.01		0.42	0.42		0.42	0.42		1,102.93		0.13		1,105.70
Total	**1.47**	**9.19**	**4.35**	**0.01**		**0.42**	**0.42**		**0.42**	**0.42**		**1,102.93**		**0.13**		**1,105.70**

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	0.01	0.09	0.05	0.00	0.54	0.00	0.54	0.00	0.00	0.00		14.52		0.00		14.53
Vendor	0.05	0.48	0.34	0.00	0.03	0.02	0.04	0.00	0.02	0.02		82.59		0.00		82.63
Worker	0.08	0.08	0.81	0.00	0.18	0.01	0.19	0.01	0.01	0.01		140.53		0.01		140.70
Total	**0.14**	**0.65**	**1.20**	**0.00**	**0.75**	**0.03**	**0.77**	**0.01**	**0.03**	**0.03**		**237.64**		**0.01**		**237.86**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2014

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	1.47	9.19	4.35	0.01		0.42	0.42		0.42	0.42	0.00	1,102.93		0.13		1,105.70
Total	**1.47**	**9.19**	**4.35**	**0.01**		**0.42**	**0.42**		**0.42**	**0.42**	**0.00**	**1,102.93**		**0.13**		**1,105.70**

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	0.01	0.09	0.05	0.00	0.54	0.00	0.54	0.00	0.00	0.00		14.52		0.00		14.53
Vendor	0.05	0.48	0.34	0.00	0.03	0.02	0.04	0.00	0.02	0.02		82.59		0.00		82.63
Worker	0.08	0.08	0.81	0.00	0.18	0.01	0.19	0.01	0.01	0.01		140.53		0.01		140.70
Total	**0.14**	**0.65**	**1.20**	**0.00**	**0.75**	**0.03**	**0.77**	**0.01**	**0.03**	**0.03**		**237.64**		**0.01**		**237.86**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2015

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	1.36	8.48	4.19	0.01		0.39	0.39		0.39	0.39		1,102.93		0.12		1,105.50
Total	**1.36**	**8.48**	**4.19**	**0.01**		**0.39**	**0.39**		**0.39**	**0.39**		**1,102.93**		**0.12**		**1,105.50**

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	0.01	0.08	0.05	0.00	0.54	0.00	0.54	0.00	0.00	0.00		14.56		0.00		14.57
Vendor	0.04	0.44	0.31	0.00	0.03	0.01	0.04	0.00	0.01	0.02		82.77		0.00		82.82
Worker	0.08	0.08	0.75	0.00	0.18	0.01	0.19	0.01	0.01	0.01		137.70		0.01		137.86
Total	**0.13**	**0.60**	**1.11**	**0.00**	**0.75**	**0.02**	**0.77**	**0.01**	**0.02**	**0.03**		**235.03**		**0.01**		**235.25**

3.5 D. Install Temporary oil, water, and gas handling equipment. - 2015

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	1.36	8.48	4.19	0.01		0.39	0.39		0.39	0.39	0.00	1,102.93		0.12		1,105.50
Total	**1.36**	**8.48**	**4.19**	**0.01**		**0.39**	**0.39**		**0.39**	**0.39**	**0.00**	**1,102.93**		**0.12**		**1,105.50**

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	0.01	0.08	0.05	0.00	0.54	0.00	0.54	0.00	0.00	0.00		14.56		0.00		14.57
Vendor	0.04	0.44	0.31	0.00	0.03	0.01	0.04	0.00	0.01	0.02		82.77		0.00		82.82
Worker	0.08	0.08	0.75	0.00	0.18	0.01	0.19	0.01	0.01	0.01		137.70		0.01		137.86
Total	**0.13**	**0.60**	**1.11**	**0.00**	**0.75**	**0.02**	**0.77**	**0.01**	**0.02**	**0.03**		**235.03**		**0.01**		**235.25**

3.6 E. Remove drill rig and associated equipment. - 2015

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	0.74	6.61	2.17	0.01		0.23	0.23		0.23	0.23		895.64		0.07		897.03
Total	**0.74**	**6.61**	**2.17**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**		**895.64**		**0.07**		**897.03**

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	0.19	1.83	1.10	0.00	0.94	0.08	1.02	0.01	0.08	0.09		336.74		0.01		336.93
Vendor	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
Worker	0.13	0.13	1.25	0.00	0.31	0.01	0.32	0.01	0.01	0.02		229.49		0.01		229.77
Total	**0.32**	**1.96**	**2.35**	**0.00**	**1.25**	**0.09**	**1.34**	**0.02**	**0.09**	**0.11**		**566.23**		**0.02**		**566.70**

3.6 E. Remove drill rig and associated equipment. - 2015

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	0.74	6.61	2.17	0.01		0.23	0.23		0.23	0.23	0.00	895.64		0.07		897.03
Total	**0.74**	**6.61**	**2.17**	**0.01**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**895.64**		**0.07**		**897.03**

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	0.19	1.83	1.10	0.00	0.94	0.08	1.02	0.01	0.08	0.09		336.74		0.01		336.93
Vendor	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
Worker	0.13	0.13	1.25	0.00	0.31	0.01	0.32	0.01	0.01	0.02		229.49		0.01		229.77
Total	**0.32**	**1.96**	**2.35**	**0.00**	**1.25**	**0.09**	**1.34**	**0.02**	**0.09**	**0.11**		**566.23**		**0.02**		**566.70**

4.0 Mobile Detail

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	0.95	8.71	6.03	0.01	0.37	0.37	0.74	0.03	0.37	0.40		1,052.52		0.04		1,053.46
Unmitigated	0.95	8.71	6.03	0.01	0.37	0.37	0.74	0.03	0.37	0.40		1,052.52		0.04		1,053.46
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	20.80	20.80	20.80	107,132	107,132
Total	20.80	20.80	20.80	107,132	107,132

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	100.00	0.00

5.0 Energy Detail

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	lb/day										lb/day					
Architectural Coating	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

PHASE 3 – FINAL DESIGN AND CONSTRUCTION

Hermosa Beach

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1.3	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - User defined unit is acres

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Entered actual equipment.

Off-road Equipment - Enter actual equipment.

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual eqipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Trips and VMT - Hauling of soils from remediation based on trucking to Buttonwill, CA.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips - Operational emissions include 1) one site operator vehicle per day, and 2) 5 tractor-trailer oil hauling dtucks per day. Assume that site operater trip length (C-C) is default length. Use default for tranport of oil (C-W)

Vechicle Emission Factors - Only a light duty vehicle (LDT2) and truck-trailer oil transports (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty vehicle (LDT2) and oil transport (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty truck (LDT2) and oil transports (HHD) are included in operational vehicle emissions.

Energy Use - Based on 2 MW electrical demand

Water And Wastewater - Water use: miscellaneous repair service facility. 255.8 gall/day/employee. Outdoor water use. large residential lot, 147,788 gallons per yer Table B-7. Waste Not, Want Not: The Potential for Urban Water Conservation in California.

Solid Waste - Reference www.calrecycle.ca.gov/wastechar/DispRate.htm, group 3, mining. 1.8 tons/employee/yr. To be conservative, this value was multiplied by a factor of 10 to account for truck drivers onsite and additional waste disposal from facility operations.

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - The project proposes to install onsight power generation using microturbines to provide 50% of the facilities power demand.

Water Mitigation -

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					
2015	0.43	2.97	2.27	0.01	2.23	0.17	2.40	0.01	0.17	0.18	0.00	468.68	468.68	0.03	0.00	469.33
2016	0.38	2.24	2.03	0.00	0.05	0.13	0.18	0.00	0.13	0.14	0.00	329.93	329.93	0.03	0.00	330.57
Total	**0.81**	**5.21**	**4.30**	**0.01**	**2.28**	**0.30**	**2.58**	**0.01**	**0.30**	**0.32**	**0.00**	**798.61**	**798.61**	**0.06**	**0.00**	**799.90**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.43	2.97	2.27	0.01	2.23	0.17	2.40	0.01	0.17	0.18	0.00	468.68	468.68	0.03	0.00	469.33
2016	0.38	2.24	2.03	0.00	0.05	0.13	0.18	0.00	0.13	0.14	0.00	329.93	329.93	0.03	0.00	330.57
Total	**0.81**	**5.21**	**4.30**	**0.01**	**2.28**	**0.30**	**2.58**	**0.01**	**0.30**	**0.32**	**0.00**	**798.61**	**798.61**	**0.06**	**0.00**	**799.90**

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	0.27	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
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	5,089.67	5,089.67	0.23	0.09	5,121.57
Mobile	0.01	0.01	0.12	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	18.45	18.45	0.00	0.00	18.47
Waste						0.00	0.00		0.00	0.00	14.62	0.00	14.62	0.86	0.00	32.75
Water						0.00	0.00		0.00	0.00	0.00	4.25	4.25	0.01	0.00	4.60
Total	**0.28**	**0.01**	**0.12**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**14.62**	**5,112.37**	**5,126.99**	**1.10**	**0.09**	**5,177.39**

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	0.27	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
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	2,544.54	2,544.54	0.12	0.04	2,560.49
Mobile	0.01	0.01	0.12	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	18.45	18.45	0.00	0.00	18.47
Waste						0.00	0.00		0.00	0.00	14.62	0.00	14.62	0.86	0.00	32.75
Water						0.00	0.00		0.00	0.00	0.00	4.16	4.16	0.01	0.00	4.49
Total	**0.28**	**0.01**	**0.12**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**14.62**	**2,567.15**	**2,581.77**	**0.99**	**0.04**	**2,616.20**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Remove temporary oil, water, and gas production equipment - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**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**

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	0.00	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
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.01	0.00	0.00	1.01
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.64	0.00	0.00	0.64
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.65**	**1.65**	**0.00**	**0.00**	**1.65**

3.2 A. Remove temporary oil, water, and gas production equipment - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**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**

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	0.00	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
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.01	0.00	0.00	1.01
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.64	0.00	0.00	0.64
Total	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.65**	**1.65**	**0.00**	**0.00**	**1.65**

3.3 B. Remove 32-foot noise attenuation wall and install 10 to12-foot noise attenuation wall - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00	0.00	6.09	6.09	0.00	0.00	6.10
Total	**0.01**	**0.05**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.09**	**6.09**	**0.00**	**0.00**	**6.10**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.25
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.43
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.68**	**0.68**	**0.00**	**0.00**	**0.68**

3.3 B. Remove 32-foot noise attenuation wall and install 10 to12-foot noise attenuation wall - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.01	0.05	0.02	0.00		0.00	0.00		0.00	0.00	0.00	6.09	6.09	0.00	0.00	6.10
Total	**0.01**	**0.05**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**6.09**	**6.09**	**0.00**	**0.00**	**6.10**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.25
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.43	0.00	0.00	0.43
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.68**	**0.68**	**0.00**	**0.00**	**0.68**

3.4 C. Remove four existing mature trees along Valley Drive - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	1.74	1.74	0.00	0.00	1.74
Total	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.74**	**1.74**	**0.00**	**0.00**	**1.74**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.15	0.00	0.00	0.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.13
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.08
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.36**	**0.36**	**0.00**	**0.00**	**0.36**

3.4 C. Remove four existing mature trees along Valley Drive - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	1.74	1.74	0.00	0.00	1.74
Total	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.74**	**1.74**	**0.00**	**0.00**	**1.74**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.15	0.00	0.00	0.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.13
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08	0.00	0.00	0.08
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.36**	**0.36**	**0.00**	**0.00**	**0.36**

3.5 D. Implement Remedial Action Plan - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.22	0.20	0.00		0.01	0.01		0.01	0.01	0.00	28.24	28.24	0.00	0.00	28.30
Total	**0.03**	**0.22**	**0.20**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**28.24**	**28.24**	**0.00**	**0.00**	**28.30**

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	0.10	1.00	0.54	0.00	2.18	0.05	2.23	0.01	0.05	0.06	0.00	194.58	194.58	0.00	0.00	194.67
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.70	1.70	0.00	0.00	1.71
Total	**0.10**	**1.00**	**0.55**	**0.00**	**2.18**	**0.05**	**2.23**	**0.01**	**0.05**	**0.06**	**0.00**	**196.28**	**196.28**	**0.00**	**0.00**	**196.38**

3.5 D. Implement Remedial Action Plan - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.22	0.20	0.00		0.01	0.01		0.01	0.01	0.00	28.24	28.24	0.00	0.00	28.30
Total	**0.03**	**0.22**	**0.20**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**28.24**	**28.24**	**0.00**	**0.00**	**28.30**

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	0.10	1.00	0.54	0.00	2.18	0.05	2.23	0.01	0.05	0.06	0.00	194.58	194.58	0.00	0.00	194.67
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.70	1.70	0.00	0.00	1.71
Total	**0.10**	**1.00**	**0.55**	**0.00**	**2.18**	**0.05**	**2.23**	**0.01**	**0.05**	**0.06**	**0.00**	**196.28**	**196.28**	**0.00**	**0.00**	**196.38**

3.6 E. Construct retaining walls along portions of eastern and southern property boundary - 2015

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	0.00	0.04	0.04	0.00		0.00	0.00		0.00	0.00	0.00	5.84	5.84	0.00	0.00	5.84
Total	**0.00**	**0.04**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**5.84**	**5.84**	**0.00**	**0.00**	**5.84**

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	0.00	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
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.01	0.00	0.00	1.01
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13	2.13	0.00	0.00	2.13
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.14**	**3.14**	**0.00**	**0.00**	**3.14**

3.6 E. Construct retaining walls along portions of eastern and southern property boundary - 2015

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	0.00	0.04	0.04	0.00		0.00	0.00		0.00	0.00	0.00	5.84	5.84	0.00	0.00	5.84
Total	**0.00**	**0.04**	**0.04**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**5.84**	**5.84**	**0.00**	**0.00**	**5.84**

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	0.00	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
Vendor	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.01	1.01	0.00	0.00	1.01
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13	2.13	0.00	0.00	2.13
Total	**0.00**	**0.01**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.14**	**3.14**	**0.00**	**0.00**	**3.14**

3.7 F. Final grading (balanced) - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	2.03	2.03	0.00	0.00	2.04
Total	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.03**	**2.03**	**0.00**	**0.00**	**2.04**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.10
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.10**	**0.10**	**0.00**	**0.00**	**0.10**

3.7 F. Final grading (balanced) - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.02	0.01	0.00		0.00	0.00		0.00	0.00	0.00	2.03	2.03	0.00	0.00	2.04
Total	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.03**	**2.03**	**0.00**	**0.00**	**2.04**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.10	0.00	0.00	0.10
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.10**	**0.10**	**0.00**	**0.00**	**0.10**

3.8 G. Construct extension of first well cellar and all of second well cellar - 2015

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	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.81	2.81	0.00	0.00	2.82
Total	**0.00**	**0.02**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**2.81**	**2.81**	**0.00**	**0.00**	**2.82**

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	0.00	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
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	1.89	0.00	0.00	1.89
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	1.20	0.00	0.00	1.20
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.09**	**3.09**	**0.00**	**0.00**	**3.09**

3.8 G. Construct extension of first well cellar and all of second well cellar - 2015

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	0.00	0.02	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.81	2.81	0.00	0.00	2.82
Total	**0.00**	**0.02**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**2.81**	**2.81**	**0.00**	**0.00**	**2.82**

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	0.00	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
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	1.89	0.00	0.00	1.89
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	1.20	0.00	0.00	1.20
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.09**	**3.09**	**0.00**	**0.00**	**3.09**

3.9 H. Construct 16-foot split-faced block perimeter wall - 2015

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	0.01	0.05	0.05	0.00		0.00	0.00		0.00	0.00	0.00	8.12	8.12	0.00	0.00	8.13
Total	**0.01**	**0.05**	**0.05**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**8.12**	**8.12**	**0.00**	**0.00**	**8.13**

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	0.00	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
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.51	2.51	0.00	0.00	2.52
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.26	4.26	0.00	0.00	4.27
Total	**0.00**	**0.01**	**0.04**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**6.77**	**6.77**	**0.00**	**0.00**	**6.79**

3.9 H. Construct 16-foot split-faced block perimeter wall - 2015

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	0.01	0.05	0.05	0.00		0.00	0.00		0.00	0.00	0.00	8.12	8.12	0.00	0.00	8.13
Total	**0.01**	**0.05**	**0.05**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**8.12**	**8.12**	**0.00**	**0.00**	**8.13**

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	0.00	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
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.51	2.51	0.00	0.00	2.52
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.26	4.26	0.00	0.00	4.27
Total	**0.00**	**0.01**	**0.04**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**6.77**	**6.77**	**0.00**	**0.00**	**6.79**

3.10 J. Construct or install on-site facilities: - 2015

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	0.24	1.34	1.09	0.00		0.09	0.09		0.09	0.09	0.00	158.18	158.18	0.02	0.00	158.59
Total	**0.24**	**1.34**	**1.09**	**0.00**		**0.09**	**0.09**		**0.09**	**0.09**	**0.00**	**158.18**	**158.18**	**0.02**	**0.00**	**158.59**

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	0.00	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
Vendor	0.02	0.16	0.12	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	29.36	29.36	0.00	0.00	29.38
Worker	0.01	0.01	0.08	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.61	13.61	0.00	0.00	13.63
Total	**0.03**	**0.17**	**0.20**	**0.00**	**0.03**	**0.01**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**42.97**	**42.97**	**0.00**	**0.00**	**43.01**

3.10 J. Construct or install on-site facilities: - 2015

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	0.24	1.34	1.09	0.00		0.09	0.09		0.09	0.09	0.00	158.18	158.18	0.02	0.00	158.59
Total	**0.24**	**1.34**	**1.09**	**0.00**		**0.09**	**0.09**		**0.09**	**0.09**	**0.00**	**158.18**	**158.18**	**0.02**	**0.00**	**158.59**

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	0.00	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
Vendor	0.02	0.16	0.12	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	29.36	29.36	0.00	0.00	29.38
Worker	0.01	0.01	0.08	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	13.61	13.61	0.00	0.00	13.63
Total	**0.03**	**0.17**	**0.20**	**0.00**	**0.03**	**0.01**	**0.04**	**0.00**	**0.01**	**0.01**	**0.00**	**42.97**	**42.97**	**0.00**	**0.00**	**43.01**

3.10 J. Construct or install on-site facilities: - 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	0.32	1.82	1.57	0.00		0.12	0.12		0.12	0.12	0.00	231.86	231.86	0.03	0.00	232.41
Total	**0.32**	**1.82**	**1.57**	**0.00**		**0.12**	**0.12**		**0.12**	**0.12**	**0.00**	**231.86**	**231.86**	**0.03**	**0.00**	**232.41**

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	0.00	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
Vendor	0.02	0.22	0.16	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	43.13	43.13	0.00	0.00	43.15
Worker	0.01	0.01	0.11	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	19.66	19.66	0.00	0.00	19.69
Total	**0.03**	**0.23**	**0.27**	**0.00**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.01**	**0.00**	**62.79**	**62.79**	**0.00**	**0.00**	**62.84**

3.10 J. Construct or install on-site facilities: - 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	0.32	1.82	1.57	0.00		0.12	0.12		0.12	0.12	0.00	231.86	231.86	0.03	0.00	232.41
Total	**0.32**	**1.82**	**1.57**	**0.00**		**0.12**	**0.12**		**0.12**	**0.12**	**0.00**	**231.86**	**231.86**	**0.03**	**0.00**	**232.41**

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	0.00	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
Vendor	0.02	0.22	0.16	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	43.13	43.13	0.00	0.00	43.15
Worker	0.01	0.01	0.11	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	19.66	19.66	0.00	0.00	19.69
Total	**0.03**	**0.23**	**0.27**	**0.00**	**0.04**	**0.01**	**0.05**	**0.00**	**0.01**	**0.01**	**0.00**	**62.79**	**62.79**	**0.00**	**0.00**	**62.84**

3.11 I. Remove 10 to12-foot noise attenuation wall - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.41	0.41	0.00	0.00	0.41
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.41**	**0.41**	**0.00**	**0.00**	**0.41**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.13
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.00	0.00	0.05
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.18**	**0.18**	**0.00**	**0.00**	**0.18**

3.11 I. Remove 10 to12-foot noise attenuation wall - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.41	0.41	0.00	0.00	0.41
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.41**	**0.41**	**0.00**	**0.00**	**0.41**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.13
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.05	0.00	0.00	0.05
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.18**	**0.18**	**0.00**	**0.00**	**0.18**

3.12 K. Construct Street Improvements - 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	0.01	0.04	0.02	0.00		0.00	0.00		0.00	0.00	0.00	4.27	4.27	0.00	0.00	4.28
Total	**0.01**	**0.04**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**4.27**	**4.27**	**0.00**	**0.00**	**4.28**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.00	0.00	0.53
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.13
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.66**	**0.66**	**0.00**	**0.00**	**0.66**

3.12 K. Construct Street Improvements - 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	0.01	0.04	0.02	0.00		0.00	0.00		0.00	0.00	0.00	4.27	4.27	0.00	0.00	4.28
Total	**0.01**	**0.04**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**4.27**	**4.27**	**0.00**	**0.00**	**4.28**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.00	0.00	0.53
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.13
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.66**	**0.66**	**0.00**	**0.00**	**0.66**

3.13 L. Install landscaping - 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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.38
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.32
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.70**	**0.70**	**0.00**	**0.00**	**0.70**

3.13 L. Install landscaping - 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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.38
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.32	0.00	0.00	0.32
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.70**	**0.70**	**0.00**	**0.00**	**0.70**

3.14 M. Start-up and commissioning of oil and gas production equipment - 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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.50
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.00	0.00	0.53
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.03**	**1.03**	**0.00**	**0.00**	**1.03**

3.14 M. Start-up and commissioning of oil and gas production equipment - 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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.50
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.53	0.00	0.00	0.53
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.03**	**1.03**	**0.00**	**0.00**	**1.03**

3.15 N. Install 32-foot sound attenuation wall - 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	0.01	0.10	0.09	0.00		0.00	0.00		0.00	0.00	0.00	17.52	17.52	0.00	0.00	17.54
Total	**0.01**	**0.10**	**0.09**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**17.52**	**17.52**	**0.00**	**0.00**	**17.54**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.94	0.00	0.00	0.95
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63	0.00	0.00	0.63
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.57**	**1.57**	**0.00**	**0.00**	**1.58**

3.15 N. Install 32-foot sound attenuation wall - 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	0.01	0.10	0.09	0.00		0.00	0.00		0.00	0.00	0.00	17.52	17.52	0.00	0.00	17.54
Total	**0.01**	**0.10**	**0.09**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**17.52**	**17.52**	**0.00**	**0.00**	**17.54**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.94	0.00	0.00	0.95
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63	0.00	0.00	0.63
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.57**	**1.57**	**0.00**	**0.00**	**1.58**

3.16 O. Set conductor - 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	0.00	0.04	0.06	0.00		0.00	0.00		0.00	0.00	0.00	8.38	8.38	0.00	0.00	8.39
Total	**0.00**	**0.04**	**0.06**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**8.38**	**8.38**	**0.00**	**0.00**	**8.39**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.38
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.79	0.00	0.00	0.79
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.17**	**1.17**	**0.00**	**0.00**	**1.17**

3.16 O. Set conductor - 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	0.00	0.04	0.06	0.00		0.00	0.00		0.00	0.00	0.00	8.38	8.38	0.00	0.00	8.39
Total	**0.00**	**0.04**	**0.06**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**8.38**	**8.38**	**0.00**	**0.00**	**8.39**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.38	0.00	0.00	0.38
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.79	0.00	0.00	0.79
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.17**	**1.17**	**0.00**	**0.00**	**1.17**

4.0 Mobile Detail

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	0.01	0.01	0.12	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	18.45	18.45	0.00	0.00	18.47
Unmitigated	0.01	0.01	0.12	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	18.45	18.45	0.00	0.00	18.47
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	8.06	8.06	8.06	41,514	41,514
Total	8.06	8.06	8.06	41,514	41,514

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	100.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable 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						0.00	0.00		0.00	0.00	0.00	2,544.54	2,544.54	0.12	0.04	2,560.49
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	5,089.67	5,089.67	0.23	0.09	5,121.57
NaturalGas Mitigated	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
NaturalGas Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

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	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	1.74981e+007					5,089.67	0.23	0.09	5,121.57
Total						**5,089.67**	**0.23**	**0.09**	**5,121.57**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	8.74803e+006					2,544.54	0.12	0.04	2,560.49
Total						**2,544.54**	**0.12**	**0.04**	**2,560.49**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	0.27	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
Unmitigated	0.27	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.07					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.20					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.27**	**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**

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	0.07					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.20					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.27**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Toilet

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					4.16	0.01	0.00	4.49
Unmitigated					4.25	0.01	0.00	4.60
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0.373468 / 0.876					4.25	0.01	0.00	4.60
Total						**4.25**	**0.01**	**0.00**	**4.60**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0.348819 / 0.876					4.16	0.01	0.00	4.49
Total						**4.16**	**0.01**	**0.00**	**4.49**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					14.62	0.86	0.00	32.75
Unmitigated					14.62	0.86	0.00	32.75
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	72					14.62	0.86	0.00	32.75
Total						**14.62**	**0.86**	**0.00**	**32.75**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	72					14.62	0.86	0.00	32.75
Total						**14.62**	**0.86**	**0.00**	**32.75**

9.0 Vegetation

Hermosa Beach

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1.3	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - User defined unit is acres

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Entered actual equipment.

Off-road Equipment - Enter actual equipment.

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual eqipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Trips and VMT - Hauling of soils from remediation based on trucking to Buttonwill, CA.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips - Operational emissions include 1) one site operator vehicle per day, and 2) 5 tractor-trailer oil hauling dtucks per day. Assume that site operater trip length (C-C) is default length. Use default for tranport of oil (C-W)

Vechicle Emission Factors - Only a light duty vehicle (LDT2) and truck-trailer oil transports (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty vehicle (LDT2) and oil transport (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty truck (LDT2) and oil transports (HHD) are included in operational vehicle emissions.

Energy Use - Based on 2 MW electrical demand

Water And Wastewater - Water use: miscellaneous repair service facility. 255.8 gall/day/employee. Outdoor water use. large residential lot, 147,788 gallons per yer Table B-7. Waste Not, Want Not: The Potential for Urban Water Conservation in California.

Solid Waste - Reference www.calrecycle.ca.gov/wastechar/DispRate.htm, group 3, mining. 1.8 tons/employee/yr. To be conservative, this value was multiplied by a factor of 10 to account for truck drivers onsite and additional waste disposal from facility operations.

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - The project proposes to install onsight power generation using microturbines to provide 50% of the facilities power demand.

Water Mitigation -

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					
2015	8.44	61.07	44.08	0.12	122.59	3.10	125.69	0.38	3.10	3.48	0.00	12,383.80	0.00	0.74	0.00	12,399.40
2016	6.61	38.32	34.22	0.07	0.84	2.34	3.18	0.04	2.34	2.39	0.00	6,097.23	0.00	0.58	0.00	6,109.48
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.44	61.07	44.08	0.12	122.54	3.10	125.64	0.37	3.10	3.47	0.00	12,383.80	0.00	0.74	0.00	12,399.40
2016	6.61	38.32	34.22	0.07	0.84	2.34	3.18	0.04	2.34	2.39	0.00	6,097.23	0.00	0.58	0.00	6,109.48
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.06	0.05	0.67	0.00	0.14	0.00	0.14	0.00	0.00	0.01		117.72		0.01		117.83
Total	**1.54**	**0.05**	**0.67**	**0.00**	**0.14**	**0.00**	**0.14**	**0.00**	**0.00**	**0.01**		**117.72**		**0.01**	**0.00**	**117.83**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.06	0.05	0.67	0.00	0.14	0.00	0.14	0.00	0.00	0.01		117.72		0.01		117.83
Total	**1.54**	**0.05**	**0.67**	**0.00**	**0.14**	**0.00**	**0.14**	**0.00**	**0.00**	**0.01**		**117.72**		**0.01**	**0.00**	**117.83**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Remove temporary oil, water, and gas production equipment - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**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**

3.2 A. Remove temporary oil, water, and gas production equipment - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.12	0.72	0.00	0.07	0.04	0.11	0.01	0.04	0.04		222.39		0.01		222.50
Worker	0.07	0.07	0.79	0.00	0.18	0.01	0.19	0.01	0.01	0.01		148.65		0.01		148.82
Total	**0.18**	**1.19**	**1.51**	**0.00**	**0.25**	**0.05**	**0.30**	**0.02**	**0.05**	**0.05**		**371.04**		**0.02**		**371.32**

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**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**

3.2 A. Remove temporary oil, water, and gas production equipment - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.12	0.72	0.00	0.07	0.04	0.11	0.01	0.04	0.04		222.39		0.01		222.50
Worker	0.07	0.07	0.79	0.00	0.18	0.01	0.19	0.01	0.01	0.01		148.65		0.01		148.82
Total	**0.18**	**1.19**	**1.51**	**0.00**	**0.25**	**0.05**	**0.30**	**0.02**	**0.05**	**0.05**		**371.04**		**0.02**		**371.32**

3.3 B. Remove 32-foot noise attenuation wall and install 10 to12-foot noise attenuation wall - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	1.12	9.34	4.81	0.01		0.38	0.38		0.38	0.38		1,343.26		0.10		1,345.38
Total	**1.12**	**9.34**	**4.81**	**0.01**	**0.00**	**0.38**	**0.38**	**0.00**	**0.38**	**0.38**		**1,343.26**		**0.10**		**1,345.38**

3.3 B. Remove 32-foot noise attenuation wall and install 10 to12-foot noise attenuation wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.28	0.18	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.60		0.00		55.63
Worker	0.05	0.04	0.53	0.00	0.12	0.00	0.13	0.00	0.00	0.01		99.10		0.01		99.21
Total	**0.08**	**0.32**	**0.71**	**0.00**	**0.14**	**0.01**	**0.16**	**0.00**	**0.01**	**0.02**		**154.70**		**0.01**		**154.84**

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	1.12	9.34	4.81	0.01		0.38	0.38		0.38	0.38	0.00	1,343.26		0.10		1,345.38
Total	**1.12**	**9.34**	**4.81**	**0.01**	**0.00**	**0.38**	**0.38**	**0.00**	**0.38**	**0.38**	**0.00**	**1,343.26**		**0.10**		**1,345.38**

3.3 B. Remove 32-foot noise attenuation wall and install 10 to12-foot noise attenuation wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.28	0.18	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.60		0.00		55.63
Worker	0.05	0.04	0.53	0.00	0.12	0.00	0.13	0.00	0.00	0.01		99.10		0.01		99.21
Total	**0.08**	**0.32**	**0.71**	**0.00**	**0.14**	**0.01**	**0.16**	**0.00**	**0.01**	**0.02**		**154.70**		**0.01**		**154.84**

3.4 C. Remove four existing mature trees along Valley Drive - 2015

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					0.07	0.00	0.07	0.00	0.00	0.00						0.00
Off-Road	0.85	6.20	4.53	0.01		0.35	0.35		0.35	0.35		766.06		0.08		767.68
Total	**0.85**	**6.20**	**4.53**	**0.01**	**0.07**	**0.35**	**0.42**	**0.00**	**0.35**	**0.35**		**766.06**		**0.08**		**767.68**

3.4 C. Remove four existing mature trees along Valley Drive - 2015

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	0.04	0.35	0.20	0.00	0.10	0.01	0.11	0.00	0.01	0.02		67.68		0.00		67.72
Vendor	0.03	0.28	0.18	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.60		0.00		55.63
Worker	0.02	0.02	0.20	0.00	0.05	0.00	0.05	0.00	0.00	0.00		37.16		0.00		37.20
Total	**0.09**	**0.65**	**0.58**	**0.00**	**0.17**	**0.02**	**0.19**	**0.00**	**0.02**	**0.03**		**160.44**		**0.00**		**160.55**

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					0.03	0.00	0.03	0.00	0.00	0.00						0.00
Off-Road	0.85	6.20	4.53	0.01		0.35	0.35		0.35	0.35	0.00	766.06		0.08		767.68
Total	**0.85**	**6.20**	**4.53**	**0.01**	**0.03**	**0.35**	**0.38**	**0.00**	**0.35**	**0.35**	**0.00**	**766.06**		**0.08**		**767.68**

3.4 C. Remove four existing mature trees along Valley Drive - 2015

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	0.04	0.35	0.20	0.00	0.10	0.01	0.11	0.00	0.01	0.02		67.68		0.00		67.72
Vendor	0.03	0.28	0.18	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.60		0.00		55.63
Worker	0.02	0.02	0.20	0.00	0.05	0.00	0.05	0.00	0.00	0.00		37.16		0.00		37.20
Total	**0.09**	**0.65**	**0.58**	**0.00**	**0.17**	**0.02**	**0.19**	**0.00**	**0.02**	**0.03**		**160.44**		**0.00**		**160.55**

3.5 D. Implement Remedial Action Plan - 2015

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					0.09	0.00	0.09	0.01	0.00	0.01						0.00
Off-Road	1.58	10.86	9.76	0.02		0.70	0.70		0.70	0.70		1,557.06		0.14		1,560.04
Total	**1.58**	**10.86**	**9.76**	**0.02**	**0.09**	**0.70**	**0.79**	**0.01**	**0.70**	**0.71**		**1,557.06**		**0.14**		**1,560.04**

3.5 D. Implement Remedial Action Plan - 2015

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	5.14	50.16	26.75	0.10	122.38	2.40	124.78	0.37	2.40	2.77		10,727.64		0.25		10,732.85
Vendor	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
Worker	0.05	0.04	0.53	0.00	0.12	0.00	0.13	0.00	0.00	0.01		99.10		0.01		99.21
Total	**5.19**	**50.20**	**27.28**	**0.10**	**122.50**	**2.40**	**124.91**	**0.37**	**2.40**	**2.78**		**10,826.74**		**0.26**		**10,832.06**

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					0.03	0.00	0.03	0.00	0.00	0.00						0.00
Off-Road	1.58	10.86	9.76	0.02		0.70	0.70		0.70	0.70	0.00	1,557.06		0.14		1,560.04
Total	**1.58**	**10.86**	**9.76**	**0.02**	**0.03**	**0.70**	**0.73**	**0.00**	**0.70**	**0.70**	**0.00**	**1,557.06**		**0.14**		**1,560.04**

3.5 D. Implement Remedial Action Plan - 2015

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	5.14	50.16	26.75	0.10	122.38	2.40	124.78	0.37	2.40	2.77		10,727.64		0.25		10,732.85
Vendor	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
Worker	0.05	0.04	0.53	0.00	0.12	0.00	0.13	0.00	0.00	0.01		99.10		0.01		99.21
Total	**5.19**	**50.20**	**27.28**	**0.10**	**122.50**	**2.40**	**124.91**	**0.37**	**2.40**	**2.78**		**10,826.74**		**0.26**		**10,832.06**

3.6 E. Construct retaining walls along portions of eastern and southern property boundary - 2015

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	0.44	3.53	3.85	0.01		0.17	0.17		0.17	0.17		643.64		0.04		644.46
Total	**0.44**	**3.53**	**3.85**	**0.01**		**0.17**	**0.17**		**0.17**	**0.17**		**643.64**		**0.04**		**644.46**

3.6 E. Construct retaining walls along portions of eastern and southern property boundary - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.56	0.36	0.00	0.04	0.02	0.06	0.00	0.02	0.02		111.19		0.00		111.25
Worker	0.12	0.11	1.32	0.00	0.31	0.01	0.32	0.01	0.01	0.02		247.74		0.01		248.03
Total	**0.17**	**0.67**	**1.68**	**0.00**	**0.35**	**0.03**	**0.38**	**0.01**	**0.03**	**0.04**		**358.93**		**0.01**		**359.28**

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	0.44	3.53	3.85	0.01		0.17	0.17		0.17	0.17	0.00	643.64		0.04		644.46
Total	**0.44**	**3.53**	**3.85**	**0.01**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**643.64**		**0.04**		**644.46**

3.6 E. Construct retaining walls along portions of eastern and southern property boundary - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.56	0.36	0.00	0.04	0.02	0.06	0.00	0.02	0.02		111.19		0.00		111.25
Worker	0.12	0.11	1.32	0.00	0.31	0.01	0.32	0.01	0.01	0.02		247.74		0.01		248.03
Total	**0.17**	**0.67**	**1.68**	**0.00**	**0.35**	**0.03**	**0.38**	**0.01**	**0.03**	**0.04**		**358.93**		**0.01**		**359.28**

3.7 F. Final grading (balanced) - 2015

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					0.46	0.00	0.46	0.00	0.00	0.00						0.00
Off-Road	1.76	12.25	9.25	0.02		0.79	0.79		0.79	0.79		1,495.07		0.16		1,498.37
Total	**1.76**	**12.25**	**9.25**	**0.02**	**0.46**	**0.79**	**1.25**	**0.00**	**0.79**	**0.79**		**1,495.07**		**0.16**		**1,498.37**

3.7 F. Final grading (balanced) - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.03	0.03	0.40	0.00	0.09	0.00	0.10	0.00	0.00	0.01		74.32		0.00		74.41
Total	**0.03**	**0.03**	**0.40**	**0.00**	**0.09**	**0.00**	**0.10**	**0.00**	**0.00**	**0.01**		**74.32**		**0.00**		**74.41**

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					0.18	0.00	0.18	0.00	0.00	0.00						0.00
Off-Road	1.76	12.25	9.25	0.02		0.79	0.79		0.79	0.79	0.00	1,495.07		0.16		1,498.37
Total	**1.76**	**12.25**	**9.25**	**0.02**	**0.18**	**0.79**	**0.97**	**0.00**	**0.79**	**0.79**	**0.00**	**1,495.07**		**0.16**		**1,498.37**

3.7 F. Final grading (balanced) - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.03	0.03	0.40	0.00	0.09	0.00	0.10	0.00	0.00	0.01		74.32		0.00		74.41
Total	**0.03**	**0.03**	**0.40**	**0.00**	**0.09**	**0.00**	**0.10**	**0.00**	**0.00**	**0.01**		**74.32**		**0.00**		**74.41**

3.8 G. Construct extension of first well cellar and all of second well cellar - 2015

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	0.46	3.09	2.78	0.00		0.23	0.23		0.23	0.23		413.07		0.04		413.94
Total	**0.46**	**3.09**	**2.78**	**0.00**		**0.23**	**0.23**		**0.23**	**0.23**		**413.07**		**0.04**		**413.94**

3.8 G. Construct extension of first well cellar and all of second well cellar - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.13	1.40	0.90	0.00	0.09	0.05	0.14	0.01	0.05	0.06		277.99		0.01		278.13
Worker	0.09	0.08	0.99	0.00	0.23	0.01	0.24	0.01	0.01	0.02		185.81		0.01		186.02
Total	**0.22**	**1.48**	**1.89**	**0.00**	**0.32**	**0.06**	**0.38**	**0.02**	**0.06**	**0.08**		**463.80**		**0.02**		**464.15**

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	0.46	3.09	2.78	0.00		0.23	0.23		0.23	0.23	0.00	413.07		0.04		413.94
Total	**0.46**	**3.09**	**2.78**	**0.00**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**413.07**		**0.04**		**413.94**

3.8 G. Construct extension of first well cellar and all of second well cellar - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.13	1.40	0.90	0.00	0.09	0.05	0.14	0.01	0.05	0.06		277.99		0.01		278.13
Worker	0.09	0.08	0.99	0.00	0.23	0.01	0.24	0.01	0.01	0.02		185.81		0.01		186.02
Total	**0.22**	**1.48**	**1.89**	**0.00**	**0.32**	**0.06**	**0.38**	**0.02**	**0.06**	**0.08**		**463.80**		**0.02**		**464.15**

3.9 H. Construct 16-foot split-faced block perimeter wall - 2015

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	0.38	2.72	2.64	0.00		0.15	0.15		0.15	0.15		447.62		0.03		448.35
Total	**0.38**	**2.72**	**2.64**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**		**447.62**		**0.03**		**448.35**

3.9 H. Construct 16-foot split-faced block perimeter wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.07	0.70	0.45	0.00	0.05	0.02	0.07	0.00	0.02	0.03		138.99		0.00		139.06
Worker	0.12	0.11	1.32	0.00	0.31	0.01	0.32	0.01	0.01	0.02		247.74		0.01		248.03
Total	**0.19**	**0.81**	**1.77**	**0.00**	**0.36**	**0.03**	**0.39**	**0.01**	**0.03**	**0.05**		**386.73**		**0.01**		**387.09**

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	0.38	2.72	2.64	0.00		0.15	0.15		0.15	0.15	0.00	447.62		0.03		448.35
Total	**0.38**	**2.72**	**2.64**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**447.62**		**0.03**		**448.35**

3.9 H. Construct 16-foot split-faced block perimeter wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.07	0.70	0.45	0.00	0.05	0.02	0.07	0.00	0.02	0.03		138.99		0.00		139.06
Worker	0.12	0.11	1.32	0.00	0.31	0.01	0.32	0.01	0.01	0.02		247.74		0.01		248.03
Total	**0.19**	**0.81**	**1.77**	**0.00**	**0.36**	**0.03**	**0.39**	**0.01**	**0.03**	**0.05**		**386.73**		**0.01**		**387.09**

3.10 J. Construct or install on-site facilities: - 2015

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	6.56	36.79	29.81	0.05		2.43	2.43		2.43	2.43		4,778.53		0.59		4,790.89
Total	**6.56**	**36.79**	**29.81**	**0.05**		**2.43**	**2.43**		**2.43**	**2.43**		**4,778.53**		**0.59**		**4,790.89**

3.10 J. Construct or install on-site facilities: - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.43	4.47	2.87	0.01	0.30	0.16	0.45	0.02	0.16	0.18		889.56		0.02		890.00
Worker	0.20	0.19	2.32	0.00	0.54	0.02	0.56	0.02	0.02	0.04		433.55		0.02		434.05
Total	**0.63**	**4.66**	**5.19**	**0.01**	**0.84**	**0.18**	**1.01**	**0.04**	**0.18**	**0.22**		**1,323.11**		**0.04**		**1,324.05**

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	6.56	36.79	29.81	0.05		2.43	2.43		2.43	2.43	0.00	4,778.53		0.59		4,790.89
Total	**6.56**	**36.79**	**29.81**	**0.05**		**2.43**	**2.43**		**2.43**	**2.43**	**0.00**	**4,778.53**		**0.59**		**4,790.89**

3.10 J. Construct or install on-site facilities: - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.43	4.47	2.87	0.01	0.30	0.16	0.45	0.02	0.16	0.18		889.56		0.02		890.00
Worker	0.20	0.19	2.32	0.00	0.54	0.02	0.56	0.02	0.02	0.04		433.55		0.02		434.05
Total	**0.63**	**4.66**	**5.19**	**0.01**	**0.84**	**0.18**	**1.01**	**0.04**	**0.18**	**0.22**		**1,323.11**		**0.04**		**1,324.05**

3.10 J. Construct or install on-site facilities: - 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	6.03	34.00	29.42	0.05		2.18	2.18		2.18	2.18		4,778.52		0.54		4,789.90
Total	**6.03**	**34.00**	**29.42**	**0.05**		**2.18**	**2.18**		**2.18**	**2.18**		**4,778.52**		**0.54**		**4,789.90**

3.10 J. Construct or install on-site facilities: - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.39	4.15	2.64	0.01	0.30	0.14	0.44	0.02	0.14	0.17		891.45		0.02		891.85
Worker	0.19	0.18	2.15	0.00	0.54	0.02	0.56	0.02	0.02	0.04		427.26		0.02		427.72
Total	**0.58**	**4.33**	**4.79**	**0.01**	**0.84**	**0.16**	**1.00**	**0.04**	**0.16**	**0.21**		**1,318.71**		**0.04**		**1,319.57**

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	6.03	34.00	29.42	0.05		2.18	2.18		2.18	2.18	0.00	4,778.52		0.54		4,789.90
Total	**6.03**	**34.00**	**29.42**	**0.05**		**2.18**	**2.18**		**2.18**	**2.18**	**0.00**	**4,778.52**		**0.54**		**4,789.90**

3.10 J. Construct or install on-site facilities: - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.39	4.15	2.64	0.01	0.30	0.14	0.44	0.02	0.14	0.17		891.45		0.02		891.85
Worker	0.19	0.18	2.15	0.00	0.54	0.02	0.56	0.02	0.02	0.04		427.26		0.02		427.72
Total	**0.58**	**4.33**	**4.79**	**0.01**	**0.84**	**0.16**	**1.00**	**0.04**	**0.16**	**0.21**		**1,318.71**		**0.04**		**1,319.57**

3.11 I. Remove 10 to12-foot noise attenuation wall - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.38	2.72	2.64	0.00		0.15	0.15		0.15	0.15		447.62		0.03		448.35
Total	**0.38**	**2.72**	**2.64**	**0.00**	**0.00**	**0.15**	**0.15**	**0.00**	**0.15**	**0.15**		**447.62**		**0.03**		**448.35**

3.11 I. Remove 10 to12-foot noise attenuation wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.07	0.70	0.45	0.00	0.05	0.02	0.07	0.00	0.02	0.03		138.99		0.00		139.06
Worker	0.03	0.03	0.33	0.00	0.08	0.00	0.08	0.00	0.00	0.01		61.94		0.00		62.01
Total	**0.10**	**0.73**	**0.78**	**0.00**	**0.13**	**0.02**	**0.15**	**0.00**	**0.02**	**0.04**		**200.93**		**0.00**		**201.07**

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.38	2.72	2.64	0.00		0.15	0.15		0.15	0.15	0.00	447.62		0.03		448.35
Total	**0.38**	**2.72**	**2.64**	**0.00**	**0.00**	**0.15**	**0.15**	**0.00**	**0.15**	**0.15**	**0.00**	**447.62**		**0.03**		**448.35**

3.11 I. Remove 10 to12-foot noise attenuation wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.07	0.70	0.45	0.00	0.05	0.02	0.07	0.00	0.02	0.03		138.99		0.00		139.06
Worker	0.03	0.03	0.33	0.00	0.08	0.00	0.08	0.00	0.00	0.01		61.94		0.00		62.01
Total	**0.10**	**0.73**	**0.78**	**0.00**	**0.13**	**0.02**	**0.15**	**0.00**	**0.02**	**0.04**		**200.93**		**0.00**		**201.07**

3.12 K. Construct Street Improvements - 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	3.34	23.92	13.55	0.03		1.35	1.35		1.35	1.35		3,138.75		0.30		3,145.07
Total	**3.34**	**23.92**	**13.55**	**0.03**		**1.35**	**1.35**		**1.35**	**1.35**		**3,138.75**		**0.30**		**3,145.07**

3.12 K. Construct Street Improvements - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.17	1.81	1.16	0.00	0.13	0.06	0.19	0.01	0.06	0.07		390.01		0.01		390.19
Worker	0.04	0.04	0.49	0.00	0.12	0.00	0.13	0.00	0.00	0.01		97.66		0.01		97.77
Total	**0.21**	**1.85**	**1.65**	**0.00**	**0.25**	**0.06**	**0.32**	**0.01**	**0.06**	**0.08**		**487.67**		**0.02**		**487.96**

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	3.34	23.92	13.55	0.03		1.35	1.35		1.35	1.35	0.00	3,138.75		0.30		3,145.07
Total	**3.34**	**23.92**	**13.55**	**0.03**		**1.35**	**1.35**		**1.35**	**1.35**	**0.00**	**3,138.75**		**0.30**		**3,145.07**

3.12 K. Construct Street Improvements - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.17	1.81	1.16	0.00	0.13	0.06	0.19	0.01	0.06	0.07		390.01		0.01		390.19
Worker	0.04	0.04	0.49	0.00	0.12	0.00	0.13	0.00	0.00	0.01		97.66		0.01		97.77
Total	**0.21**	**1.85**	**1.65**	**0.00**	**0.25**	**0.06**	**0.32**	**0.01**	**0.06**	**0.08**		**487.67**		**0.02**		**487.96**

3.13 L. Install landscaping - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.13 L. Install landscaping - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.04	0.39	0.25	0.00	0.08	0.01	0.09	0.00	0.01	0.02		83.57		0.00		83.61
Worker	0.03	0.03	0.37	0.00	0.27	0.00	0.27	0.00	0.00	0.01		73.24		0.00		73.32
Total	**0.07**	**0.42**	**0.62**	**0.00**	**0.35**	**0.01**	**0.36**	**0.00**	**0.01**	**0.03**		**156.81**		**0.00**		**156.93**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.13 L. Install landscaping - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.04	0.39	0.25	0.00	0.08	0.01	0.09	0.00	0.01	0.02		83.57		0.00		83.61
Worker	0.03	0.03	0.37	0.00	0.27	0.00	0.27	0.00	0.00	0.01		73.24		0.00		73.32
Total	**0.07**	**0.42**	**0.62**	**0.00**	**0.35**	**0.01**	**0.36**	**0.00**	**0.01**	**0.03**		**156.81**		**0.00**		**156.93**

3.14 M. Start-up and commissioning of oil and gas production equipment - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.14 M. Start-up and commissioning of oil and gas production equipment - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.26	0.17	0.00	0.04	0.01	0.04	0.00	0.01	0.01		55.72		0.00		55.74
Worker	0.03	0.03	0.31	0.00	0.15	0.00	0.15	0.00	0.00	0.01		61.04		0.00		61.10
Total	**0.05**	**0.29**	**0.48**	**0.00**	**0.19**	**0.01**	**0.19**	**0.00**	**0.01**	**0.02**		**116.76**		**0.00**		**116.84**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.14 M. Start-up and commissioning of oil and gas production equipment - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.26	0.17	0.00	0.04	0.01	0.04	0.00	0.01	0.01		55.72		0.00		55.74
Worker	0.03	0.03	0.31	0.00	0.15	0.00	0.15	0.00	0.00	0.01		61.04		0.00		61.10
Total	**0.05**	**0.29**	**0.48**	**0.00**	**0.19**	**0.01**	**0.19**	**0.00**	**0.01**	**0.02**		**116.76**		**0.00**		**116.84**

3.15 N. Install 32-foot sound attenuation wall - 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	1.61	13.71	12.21	0.03		0.54	0.54		0.54	0.54		2,574.97		0.15		2,578.02
Total	**1.61**	**13.71**	**12.21**	**0.03**		**0.54**	**0.54**		**0.54**	**0.54**		**2,574.97**		**0.15**		**2,578.02**

3.15 N. Install 32-foot sound attenuation wall - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.06	0.65	0.41	0.00	0.13	0.02	0.15	0.00	0.02	0.03		139.29		0.00		139.35
Worker	0.04	0.04	0.49	0.00	0.36	0.00	0.36	0.00	0.00	0.01		97.66		0.01		97.77
Total	**0.10**	**0.69**	**0.90**	**0.00**	**0.49**	**0.02**	**0.51**	**0.00**	**0.02**	**0.04**		**236.95**		**0.01**		**237.12**

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	1.61	13.71	12.21	0.03		0.54	0.54		0.54	0.54	0.00	2,574.97		0.15		2,578.02
Total	**1.61**	**13.71**	**12.21**	**0.03**		**0.54**	**0.54**		**0.54**	**0.54**	**0.00**	**2,574.97**		**0.15**		**2,578.02**

3.15 N. Install 32-foot sound attenuation wall - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.06	0.65	0.41	0.00	0.13	0.02	0.15	0.00	0.02	0.03		139.29		0.00		139.35
Worker	0.04	0.04	0.49	0.00	0.36	0.00	0.36	0.00	0.00	0.01		97.66		0.01		97.77
Total	**0.10**	**0.69**	**0.90**	**0.00**	**0.49**	**0.02**	**0.51**	**0.00**	**0.02**	**0.04**		**236.95**		**0.01**		**237.12**

3.16 O. Set conductor - 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	0.28	2.64	3.73	0.01		0.10	0.10		0.10	0.10		615.85		0.02		616.38
Total	**0.28**	**2.64**	**3.73**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**		**615.85**		**0.02**		**616.38**

3.16 O. Set conductor - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.01	0.13	0.08	0.00	0.03	0.00	0.03	0.00	0.00	0.01		27.86		0.00		27.87
Worker	0.03	0.03	0.31	0.00	0.22	0.00	0.23	0.00	0.00	0.01		61.04		0.00		61.10
Total	**0.04**	**0.16**	**0.39**	**0.00**	**0.25**	**0.00**	**0.26**	**0.00**	**0.00**	**0.02**		**88.90**		**0.00**		**88.97**

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	0.28	2.64	3.73	0.01		0.10	0.10		0.10	0.10	0.00	615.85		0.02		616.38
Total	**0.28**	**2.64**	**3.73**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**615.85**		**0.02**		**616.38**

3.16 O. Set conductor - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.01	0.13	0.08	0.00	0.03	0.00	0.03	0.00	0.00	0.01		27.86		0.00		27.87
Worker	0.03	0.03	0.31	0.00	0.22	0.00	0.23	0.00	0.00	0.01		61.04		0.00		61.10
Total	**0.04**	**0.16**	**0.39**	**0.00**	**0.25**	**0.00**	**0.26**	**0.00**	**0.00**	**0.02**		**88.90**		**0.00**		**88.97**

4.0 Mobile Detail

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	0.06	0.05	0.67	0.00	0.14	0.00	0.14	0.00	0.00	0.01		117.72		0.01		117.83
Unmitigated	0.06	0.05	0.67	0.00	0.14	0.00	0.14	0.00	0.00	0.01		117.72		0.01		117.83
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	8.06	8.06	8.06	41,514	41,514
Total	8.06	8.06	8.06	41,514	41,514

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	100.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	lb/day										lb/day					
Architectural Coating	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Toilet

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Hermosa Beach

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1.3	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - User defined unit is acres

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Entered actual equipment.

Off-road Equipment - Enter actual equipment.

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual eqipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Off-road Equipment - Entered actual equipment

Trips and VMT - Hauling of soils from remediation based on trucking to Buttonwill, CA.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips - Operational emissions include 1) one site operator vehicle per day, and 2) 5 tractor-trailer oil hauling dtucks per day. Assume that site operater trip length (C-C) is default length. Use default for tranport of oil (C-W)

Vechicle Emission Factors - Only a light duty vehicle (LDT2) and truck-trailer oil transports (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty vehicle (LDT2) and oil transport (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty truck (LDT2) and oil transports (HHD) are included in operational vehicle emissions.

Energy Use - Based on 2 MW electrical demand

Water And Wastewater - Water use: miscellaneous repair service facility. 255.8 gall/day/employee. Outdoor water use. large residential lot, 147,788 gallons per yer Table B-7. Waste Not, Want Not: The Potential for Urban Water Conservation in California.

Solid Waste - Reference www.calrecycle.ca.gov/wastechar/DispRate.htm, group 3, mining. 1.8 tons/employee/yr. To be conservative, this value was multiplied by a factor of 10 to account for truck drivers onsite and additional waste disposal from facility operations.

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - The project proposes to install onsight power generation using microturbines to provide 50% of the facilities power demand.

Water Mitigation -

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					
2015	8.50	64.38	44.43	0.12	122.59	3.10	125.69	0.38	3.10	3.48	0.00	12,368.61	0.00	0.74	0.00	12,384.20
2016	6.65	38.50	34.50	0.06	0.84	2.35	3.18	0.04	2.35	2.39	0.00	6,058.95	0.00	0.58	0.00	6,071.19
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	8.50	64.38	44.43	0.12	122.54	3.10	125.64	0.37	3.10	3.48	0.00	12,368.61	0.00	0.74	0.00	12,384.20
2016	6.65	38.50	34.50	0.06	0.84	2.35	3.18	0.04	2.35	2.39	0.00	6,058.95	0.00	0.58	0.00	6,071.19
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.07	0.06	0.63	0.00	0.14	0.00	0.14	0.00	0.00	0.01		109.25		0.01		109.36
Total	**1.55**	**0.06**	**0.63**	**0.00**	**0.14**	**0.00**	**0.14**	**0.00**	**0.00**	**0.01**		**109.25**		**0.01**	**0.00**	**109.36**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.07	0.06	0.63	0.00	0.14	0.00	0.14	0.00	0.00	0.01		109.25		0.01		109.36
Total	**1.55**	**0.06**	**0.63**	**0.00**	**0.14**	**0.00**	**0.14**	**0.00**	**0.00**	**0.01**		**109.25**		**0.01**	**0.00**	**109.36**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Remove temporary oil, water, and gas production equipment - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**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**

3.2 A. Remove temporary oil, water, and gas production equipment - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.16	0.82	0.00	0.07	0.04	0.11	0.01	0.04	0.05		220.73		0.01		220.85
Worker	0.08	0.08	0.75	0.00	0.18	0.01	0.19	0.01	0.01	0.01		137.70		0.01		137.86
Total	**0.19**	**1.24**	**1.57**	**0.00**	**0.25**	**0.05**	**0.30**	**0.02**	**0.05**	**0.06**		**358.43**		**0.02**		**358.71**

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**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**

3.2 A. Remove temporary oil, water, and gas production equipment - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.16	0.82	0.00	0.07	0.04	0.11	0.01	0.04	0.05		220.73		0.01		220.85
Worker	0.08	0.08	0.75	0.00	0.18	0.01	0.19	0.01	0.01	0.01		137.70		0.01		137.86
Total	**0.19**	**1.24**	**1.57**	**0.00**	**0.25**	**0.05**	**0.30**	**0.02**	**0.05**	**0.06**		**358.43**		**0.02**		**358.71**

3.3 B. Remove 32-foot noise attenuation wall and install 10 to12-foot noise attenuation wall - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	1.12	9.34	4.81	0.01		0.38	0.38		0.38	0.38		1,343.26		0.10		1,345.38
Total	**1.12**	**9.34**	**4.81**	**0.01**	**0.00**	**0.38**	**0.38**	**0.00**	**0.38**	**0.38**		**1,343.26**		**0.10**		**1,345.38**

3.3 B. Remove 32-foot noise attenuation wall and install 10 to12-foot noise attenuation wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.29	0.21	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.18		0.00		55.21
Worker	0.05	0.05	0.50	0.00	0.12	0.00	0.13	0.00	0.00	0.01		91.80		0.01		91.91
Total	**0.08**	**0.34**	**0.71**	**0.00**	**0.14**	**0.01**	**0.16**	**0.00**	**0.01**	**0.02**		**146.98**		**0.01**		**147.12**

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	1.12	9.34	4.81	0.01		0.38	0.38		0.38	0.38	0.00	1,343.26		0.10		1,345.38
Total	**1.12**	**9.34**	**4.81**	**0.01**	**0.00**	**0.38**	**0.38**	**0.00**	**0.38**	**0.38**	**0.00**	**1,343.26**		**0.10**		**1,345.38**

3.3 B. Remove 32-foot noise attenuation wall and install 10 to12-foot noise attenuation wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.29	0.21	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.18		0.00		55.21
Worker	0.05	0.05	0.50	0.00	0.12	0.00	0.13	0.00	0.00	0.01		91.80		0.01		91.91
Total	**0.08**	**0.34**	**0.71**	**0.00**	**0.14**	**0.01**	**0.16**	**0.00**	**0.01**	**0.02**		**146.98**		**0.01**		**147.12**

3.4 C. Remove four existing mature trees along Valley Drive - 2015

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					0.07	0.00	0.07	0.00	0.00	0.00						0.00
Off-Road	0.85	6.20	4.53	0.01		0.35	0.35		0.35	0.35		766.06		0.08		767.68
Total	**0.85**	**6.20**	**4.53**	**0.01**	**0.07**	**0.35**	**0.42**	**0.00**	**0.35**	**0.35**		**766.06**		**0.08**		**767.68**

3.4 C. Remove four existing mature trees along Valley Drive - 2015

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	0.04	0.37	0.22	0.00	0.10	0.02	0.11	0.00	0.02	0.02		67.35		0.00		67.39
Vendor	0.03	0.29	0.21	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.18		0.00		55.21
Worker	0.02	0.02	0.19	0.00	0.05	0.00	0.05	0.00	0.00	0.00		34.42		0.00		34.46
Total	**0.09**	**0.68**	**0.62**	**0.00**	**0.17**	**0.03**	**0.19**	**0.00**	**0.03**	**0.03**		**156.95**		**0.00**		**157.06**

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					0.03	0.00	0.03	0.00	0.00	0.00						0.00
Off-Road	0.85	6.20	4.53	0.01		0.35	0.35		0.35	0.35	0.00	766.06		0.08		767.68
Total	**0.85**	**6.20**	**4.53**	**0.01**	**0.03**	**0.35**	**0.38**	**0.00**	**0.35**	**0.35**	**0.00**	**766.06**		**0.08**		**767.68**

3.4 C. Remove four existing mature trees along Valley Drive - 2015

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	0.04	0.37	0.22	0.00	0.10	0.02	0.11	0.00	0.02	0.02		67.35		0.00		67.39
Vendor	0.03	0.29	0.21	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.18		0.00		55.21
Worker	0.02	0.02	0.19	0.00	0.05	0.00	0.05	0.00	0.00	0.00		34.42		0.00		34.46
Total	**0.09**	**0.68**	**0.62**	**0.00**	**0.17**	**0.03**	**0.19**	**0.00**	**0.03**	**0.03**		**156.95**		**0.00**		**157.06**

3.5 D. Implement Remedial Action Plan - 2015

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					0.09	0.00	0.09	0.01	0.00	0.01						0.00
Off-Road	1.58	10.86	9.76	0.02		0.70	0.70		0.70	0.70		1,557.06		0.14		1,560.04
Total	**1.58**	**10.86**	**9.76**	**0.02**	**0.09**	**0.70**	**0.79**	**0.01**	**0.70**	**0.71**		**1,557.06**		**0.14**		**1,560.04**

3.5 D. Implement Remedial Action Plan - 2015

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	5.16	53.47	27.05	0.10	122.38	2.40	124.78	0.37	2.40	2.77		10,719.76		0.25		10,724.97
Vendor	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
Worker	0.05	0.05	0.50	0.00	0.12	0.00	0.13	0.00	0.00	0.01		91.80		0.01		91.91
Total	**5.21**	**53.52**	**27.55**	**0.10**	**122.50**	**2.40**	**124.91**	**0.37**	**2.40**	**2.78**		**10,811.56**		**0.26**		**10,816.88**

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					0.03	0.00	0.03	0.00	0.00	0.00						0.00
Off-Road	1.58	10.86	9.76	0.02		0.70	0.70		0.70	0.70	0.00	1,557.06		0.14		1,560.04
Total	**1.58**	**10.86**	**9.76**	**0.02**	**0.03**	**0.70**	**0.73**	**0.00**	**0.70**	**0.70**	**0.00**	**1,557.06**		**0.14**		**1,560.04**

3.5 D. Implement Remedial Action Plan - 2015

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	5.16	53.47	27.05	0.10	122.38	2.40	124.78	0.37	2.40	2.77		10,719.76		0.25		10,724.97
Vendor	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
Worker	0.05	0.05	0.50	0.00	0.12	0.00	0.13	0.00	0.00	0.01		91.80		0.01		91.91
Total	**5.21**	**53.52**	**27.55**	**0.10**	**122.50**	**2.40**	**124.91**	**0.37**	**2.40**	**2.78**		**10,811.56**		**0.26**		**10,816.88**

3.6 E. Construct retaining walls along portions of eastern and southern property boundary - 2015

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	0.44	3.53	3.85	0.01		0.17	0.17		0.17	0.17		643.64		0.04		644.46
Total	**0.44**	**3.53**	**3.85**	**0.01**		**0.17**	**0.17**		**0.17**	**0.17**		**643.64**		**0.04**		**644.46**

3.6 E. Construct retaining walls along portions of eastern and southern property boundary - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.06	0.58	0.41	0.00	0.04	0.02	0.06	0.00	0.02	0.02		110.36		0.00		110.42
Worker	0.13	0.13	1.25	0.00	0.31	0.01	0.32	0.01	0.01	0.02		229.49		0.01		229.77
Total	**0.19**	**0.71**	**1.66**	**0.00**	**0.35**	**0.03**	**0.38**	**0.01**	**0.03**	**0.04**		**339.85**		**0.01**		**340.19**

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	0.44	3.53	3.85	0.01		0.17	0.17		0.17	0.17	0.00	643.64		0.04		644.46
Total	**0.44**	**3.53**	**3.85**	**0.01**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**643.64**		**0.04**		**644.46**

3.6 E. Construct retaining walls along portions of eastern and southern property boundary - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.06	0.58	0.41	0.00	0.04	0.02	0.06	0.00	0.02	0.02		110.36		0.00		110.42
Worker	0.13	0.13	1.25	0.00	0.31	0.01	0.32	0.01	0.01	0.02		229.49		0.01		229.77
Total	**0.19**	**0.71**	**1.66**	**0.00**	**0.35**	**0.03**	**0.38**	**0.01**	**0.03**	**0.04**		**339.85**		**0.01**		**340.19**

3.7 F. Final grading (balanced) - 2015

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					0.46	0.00	0.46	0.00	0.00	0.00						0.00
Off-Road	1.76	12.25	9.25	0.02		0.79	0.79		0.79	0.79		1,495.07		0.16		1,498.37
Total	**1.76**	**12.25**	**9.25**	**0.02**	**0.46**	**0.79**	**1.25**	**0.00**	**0.79**	**0.79**		**1,495.07**		**0.16**		**1,498.37**

3.7 F. Final grading (balanced) - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.04	0.04	0.37	0.00	0.09	0.00	0.10	0.00	0.00	0.01		68.85		0.00		68.93
Total	**0.04**	**0.04**	**0.37**	**0.00**	**0.09**	**0.00**	**0.10**	**0.00**	**0.00**	**0.01**		**68.85**		**0.00**		**68.93**

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					0.18	0.00	0.18	0.00	0.00	0.00						0.00
Off-Road	1.76	12.25	9.25	0.02		0.79	0.79		0.79	0.79	0.00	1,495.07		0.16		1,498.37
Total	**1.76**	**12.25**	**9.25**	**0.02**	**0.18**	**0.79**	**0.97**	**0.00**	**0.79**	**0.79**	**0.00**	**1,495.07**		**0.16**		**1,498.37**

3.7 F. Final grading (balanced) - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.04	0.04	0.37	0.00	0.09	0.00	0.10	0.00	0.00	0.01		68.85		0.00		68.93
Total	**0.04**	**0.04**	**0.37**	**0.00**	**0.09**	**0.00**	**0.10**	**0.00**	**0.00**	**0.01**		**68.85**		**0.00**		**68.93**

3.8 G. Construct extension of first well cellar and all of second well cellar - 2015

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	0.46	3.09	2.78	0.00		0.23	0.23		0.23	0.23		413.07		0.04		413.94
Total	**0.46**	**3.09**	**2.78**	**0.00**		**0.23**	**0.23**		**0.23**	**0.23**		**413.07**		**0.04**		**413.94**

3.8 G. Construct extension of first well cellar and all of second well cellar - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.14	1.45	1.03	0.00	0.09	0.05	0.14	0.01	0.05	0.06		275.91		0.01		276.06
Worker	0.09	0.10	0.93	0.00	0.23	0.01	0.24	0.01	0.01	0.02		172.12		0.01		172.32
Total	**0.23**	**1.55**	**1.96**	**0.00**	**0.32**	**0.06**	**0.38**	**0.02**	**0.06**	**0.08**		**448.03**		**0.02**		**448.38**

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	0.46	3.09	2.78	0.00		0.23	0.23		0.23	0.23	0.00	413.07		0.04		413.94
Total	**0.46**	**3.09**	**2.78**	**0.00**		**0.23**	**0.23**		**0.23**	**0.23**	**0.00**	**413.07**		**0.04**		**413.94**

3.8 G. Construct extension of first well cellar and all of second well cellar - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.14	1.45	1.03	0.00	0.09	0.05	0.14	0.01	0.05	0.06		275.91		0.01		276.06
Worker	0.09	0.10	0.93	0.00	0.23	0.01	0.24	0.01	0.01	0.02		172.12		0.01		172.32
Total	**0.23**	**1.55**	**1.96**	**0.00**	**0.32**	**0.06**	**0.38**	**0.02**	**0.06**	**0.08**		**448.03**		**0.02**		**448.38**

3.9 H. Construct 16-foot split-faced block perimeter wall - 2015

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	0.38	2.72	2.64	0.00		0.15	0.15		0.15	0.15		447.62		0.03		448.35
Total	**0.38**	**2.72**	**2.64**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**		**447.62**		**0.03**		**448.35**

3.9 H. Construct 16-foot split-faced block perimeter wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.07	0.73	0.51	0.00	0.05	0.02	0.07	0.00	0.02	0.03		137.96		0.00		138.03
Worker	0.13	0.13	1.25	0.00	0.31	0.01	0.32	0.01	0.01	0.02		229.49		0.01		229.77
Total	**0.20**	**0.86**	**1.76**	**0.00**	**0.36**	**0.03**	**0.39**	**0.01**	**0.03**	**0.05**		**367.45**		**0.01**		**367.80**

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	0.38	2.72	2.64	0.00		0.15	0.15		0.15	0.15	0.00	447.62		0.03		448.35
Total	**0.38**	**2.72**	**2.64**	**0.00**		**0.15**	**0.15**		**0.15**	**0.15**	**0.00**	**447.62**		**0.03**		**448.35**

3.9 H. Construct 16-foot split-faced block perimeter wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.07	0.73	0.51	0.00	0.05	0.02	0.07	0.00	0.02	0.03		137.96		0.00		138.03
Worker	0.13	0.13	1.25	0.00	0.31	0.01	0.32	0.01	0.01	0.02		229.49		0.01		229.77
Total	**0.20**	**0.86**	**1.76**	**0.00**	**0.36**	**0.03**	**0.39**	**0.01**	**0.03**	**0.05**		**367.45**		**0.01**		**367.80**

3.10 J. Construct or install on-site facilities: - 2015

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	6.56	36.79	29.81	0.05		2.43	2.43		2.43	2.43		4,778.53		0.59		4,790.89
Total	**6.56**	**36.79**	**29.81**	**0.05**		**2.43**	**2.43**		**2.43**	**2.43**		**4,778.53**		**0.59**		**4,790.89**

3.10 J. Construct or install on-site facilities: - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.45	4.65	3.30	0.01	0.30	0.16	0.46	0.02	0.16	0.18		882.92		0.02		883.38
Worker	0.22	0.23	2.18	0.00	0.54	0.02	0.56	0.02	0.02	0.04		401.62		0.02		402.09
Total	**0.67**	**4.88**	**5.48**	**0.01**	**0.84**	**0.18**	**1.02**	**0.04**	**0.18**	**0.22**		**1,284.54**		**0.04**		**1,285.47**

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	6.56	36.79	29.81	0.05		2.43	2.43		2.43	2.43	0.00	4,778.53		0.59		4,790.89
Total	**6.56**	**36.79**	**29.81**	**0.05**		**2.43**	**2.43**		**2.43**	**2.43**	**0.00**	**4,778.53**		**0.59**		**4,790.89**

3.10 J. Construct or install on-site facilities: - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.45	4.65	3.30	0.01	0.30	0.16	0.46	0.02	0.16	0.18		882.92		0.02		883.38
Worker	0.22	0.23	2.18	0.00	0.54	0.02	0.56	0.02	0.02	0.04		401.62		0.02		402.09
Total	**0.67**	**4.88**	**5.48**	**0.01**	**0.84**	**0.18**	**1.02**	**0.04**	**0.18**	**0.22**		**1,284.54**		**0.04**		**1,285.47**

3.10 J. Construct or install on-site facilities: - 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	6.03	34.00	29.42	0.05		2.18	2.18		2.18	2.18		4,778.52		0.54		4,789.90
Total	**6.03**	**34.00**	**29.42**	**0.05**		**2.18**	**2.18**		**2.18**	**2.18**		**4,778.52**		**0.54**		**4,789.90**

3.10 J. Construct or install on-site facilities: - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.41	4.30	3.06	0.01	0.30	0.14	0.44	0.02	0.14	0.17		884.63		0.02		885.05
Worker	0.21	0.21	2.02	0.00	0.54	0.02	0.56	0.02	0.02	0.04		395.79		0.02		396.24
Total	**0.62**	**4.51**	**5.08**	**0.01**	**0.84**	**0.16**	**1.00**	**0.04**	**0.16**	**0.21**		**1,280.42**		**0.04**		**1,281.29**

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	6.03	34.00	29.42	0.05		2.18	2.18		2.18	2.18	0.00	4,778.52		0.54		4,789.90
Total	**6.03**	**34.00**	**29.42**	**0.05**		**2.18**	**2.18**		**2.18**	**2.18**	**0.00**	**4,778.52**		**0.54**		**4,789.90**

3.10 J. Construct or install on-site facilities: - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.41	4.30	3.06	0.01	0.30	0.14	0.44	0.02	0.14	0.17		884.63		0.02		885.05
Worker	0.21	0.21	2.02	0.00	0.54	0.02	0.56	0.02	0.02	0.04		395.79		0.02		396.24
Total	**0.62**	**4.51**	**5.08**	**0.01**	**0.84**	**0.16**	**1.00**	**0.04**	**0.16**	**0.21**		**1,280.42**		**0.04**		**1,281.29**

3.11 I. Remove 10 to12-foot noise attenuation wall - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.38	2.72	2.64	0.00		0.15	0.15		0.15	0.15		447.62		0.03		448.35
Total	**0.38**	**2.72**	**2.64**	**0.00**	**0.00**	**0.15**	**0.15**	**0.00**	**0.15**	**0.15**		**447.62**		**0.03**		**448.35**

3.11 I. Remove 10 to12-foot noise attenuation wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.07	0.73	0.51	0.00	0.05	0.02	0.07	0.00	0.02	0.03		137.96		0.00		138.03
Worker	0.03	0.03	0.31	0.00	0.08	0.00	0.08	0.00	0.00	0.01		57.37		0.00		57.44
Total	**0.10**	**0.76**	**0.82**	**0.00**	**0.13**	**0.02**	**0.15**	**0.00**	**0.02**	**0.04**		**195.33**		**0.00**		**195.47**

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					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.38	2.72	2.64	0.00		0.15	0.15		0.15	0.15	0.00	447.62		0.03		448.35
Total	**0.38**	**2.72**	**2.64**	**0.00**	**0.00**	**0.15**	**0.15**	**0.00**	**0.15**	**0.15**	**0.00**	**447.62**		**0.03**		**448.35**

3.11 I. Remove 10 to12-foot noise attenuation wall - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.07	0.73	0.51	0.00	0.05	0.02	0.07	0.00	0.02	0.03		137.96		0.00		138.03
Worker	0.03	0.03	0.31	0.00	0.08	0.00	0.08	0.00	0.00	0.01		57.37		0.00		57.44
Total	**0.10**	**0.76**	**0.82**	**0.00**	**0.13**	**0.02**	**0.15**	**0.00**	**0.02**	**0.04**		**195.33**		**0.00**		**195.47**

3.12 K. Construct Street Improvements - 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	3.34	23.92	13.55	0.03		1.35	1.35		1.35	1.35		3,138.75		0.30		3,145.07
Total	**3.34**	**23.92**	**13.55**	**0.03**		**1.35**	**1.35**		**1.35**	**1.35**		**3,138.75**		**0.30**		**3,145.07**

3.12 K. Construct Street Improvements - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.18	1.88	1.34	0.00	0.13	0.06	0.19	0.01	0.06	0.07		387.02		0.01		387.21
Worker	0.05	0.05	0.46	0.00	0.12	0.00	0.13	0.00	0.00	0.01		90.47		0.00		90.57
Total	**0.23**	**1.93**	**1.80**	**0.00**	**0.25**	**0.06**	**0.32**	**0.01**	**0.06**	**0.08**		**477.49**		**0.01**		**477.78**

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	3.34	23.92	13.55	0.03		1.35	1.35		1.35	1.35	0.00	3,138.75		0.30		3,145.07
Total	**3.34**	**23.92**	**13.55**	**0.03**		**1.35**	**1.35**		**1.35**	**1.35**	**0.00**	**3,138.75**		**0.30**		**3,145.07**

3.12 K. Construct Street Improvements - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.18	1.88	1.34	0.00	0.13	0.06	0.19	0.01	0.06	0.07		387.02		0.01		387.21
Worker	0.05	0.05	0.46	0.00	0.12	0.00	0.13	0.00	0.00	0.01		90.47		0.00		90.57
Total	**0.23**	**1.93**	**1.80**	**0.00**	**0.25**	**0.06**	**0.32**	**0.01**	**0.06**	**0.08**		**477.49**		**0.01**		**477.78**

3.13 L. Install landscaping - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.13 L. Install landscaping - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.04	0.40	0.29	0.00	0.08	0.01	0.09	0.00	0.01	0.02		82.93		0.00		82.97
Worker	0.04	0.04	0.35	0.00	0.27	0.00	0.27	0.00	0.00	0.01		67.85		0.00		67.93
Total	**0.08**	**0.44**	**0.64**	**0.00**	**0.35**	**0.01**	**0.36**	**0.00**	**0.01**	**0.03**		**150.78**		**0.00**		**150.90**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.13 L. Install landscaping - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.04	0.40	0.29	0.00	0.08	0.01	0.09	0.00	0.01	0.02		82.93		0.00		82.97
Worker	0.04	0.04	0.35	0.00	0.27	0.00	0.27	0.00	0.00	0.01		67.85		0.00		67.93
Total	**0.08**	**0.44**	**0.64**	**0.00**	**0.35**	**0.01**	**0.36**	**0.00**	**0.01**	**0.03**		**150.78**		**0.00**		**150.90**

3.14 M. Start-up and commissioning of oil and gas production equipment - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.14 M. Start-up and commissioning of oil and gas production equipment - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.27	0.19	0.00	0.04	0.01	0.04	0.00	0.01	0.01		55.29		0.00		55.32
Worker	0.03	0.03	0.29	0.00	0.15	0.00	0.15	0.00	0.00	0.01		56.54		0.00		56.61
Total	**0.06**	**0.30**	**0.48**	**0.00**	**0.19**	**0.01**	**0.19**	**0.00**	**0.01**	**0.02**		**111.83**		**0.00**		**111.93**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.14 M. Start-up and commissioning of oil and gas production equipment - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.27	0.19	0.00	0.04	0.01	0.04	0.00	0.01	0.01		55.29		0.00		55.32
Worker	0.03	0.03	0.29	0.00	0.15	0.00	0.15	0.00	0.00	0.01		56.54		0.00		56.61
Total	**0.06**	**0.30**	**0.48**	**0.00**	**0.19**	**0.01**	**0.19**	**0.00**	**0.01**	**0.02**		**111.83**		**0.00**		**111.93**

3.15 N. Install 32-foot sound attenuation wall - 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	1.61	13.71	12.21	0.03		0.54	0.54		0.54	0.54		2,574.97		0.15		2,578.02
Total	**1.61**	**13.71**	**12.21**	**0.03**		**0.54**	**0.54**		**0.54**	**0.54**		**2,574.97**		**0.15**		**2,578.02**

3.15 N. Install 32-foot sound attenuation wall - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.06	0.67	0.48	0.00	0.13	0.02	0.16	0.00	0.02	0.03		138.22		0.00		138.29
Worker	0.05	0.05	0.46	0.00	0.36	0.00	0.36	0.00	0.00	0.01		90.47		0.00		90.57
Total	**0.11**	**0.72**	**0.94**	**0.00**	**0.49**	**0.02**	**0.52**	**0.00**	**0.02**	**0.04**		**228.69**		**0.00**		**228.86**

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	1.61	13.71	12.21	0.03		0.54	0.54		0.54	0.54	0.00	2,574.97		0.15		2,578.02
Total	**1.61**	**13.71**	**12.21**	**0.03**		**0.54**	**0.54**		**0.54**	**0.54**	**0.00**	**2,574.97**		**0.15**		**2,578.02**

3.15 N. Install 32-foot sound attenuation wall - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.06	0.67	0.48	0.00	0.13	0.02	0.16	0.00	0.02	0.03		138.22		0.00		138.29
Worker	0.05	0.05	0.46	0.00	0.36	0.00	0.36	0.00	0.00	0.01		90.47		0.00		90.57
Total	**0.11**	**0.72**	**0.94**	**0.00**	**0.49**	**0.02**	**0.52**	**0.00**	**0.02**	**0.04**		**228.69**		**0.00**		**228.86**

3.16 O. Set conductor - 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	0.28	2.64	3.73	0.01		0.10	0.10		0.10	0.10		615.85		0.02		616.38
Total	**0.28**	**2.64**	**3.73**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**		**615.85**		**0.02**		**616.38**

3.16 O. Set conductor - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.01	0.13	0.10	0.00	0.03	0.00	0.03	0.00	0.00	0.01		27.64		0.00		27.66
Worker	0.03	0.03	0.29	0.00	0.22	0.00	0.23	0.00	0.00	0.01		56.54		0.00		56.61
Total	**0.04**	**0.16**	**0.39**	**0.00**	**0.25**	**0.00**	**0.26**	**0.00**	**0.00**	**0.02**		**84.18**		**0.00**		**84.27**

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	0.28	2.64	3.73	0.01		0.10	0.10		0.10	0.10	0.00	615.85		0.02		616.38
Total	**0.28**	**2.64**	**3.73**	**0.01**		**0.10**	**0.10**		**0.10**	**0.10**	**0.00**	**615.85**		**0.02**		**616.38**

3.16 O. Set conductor - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.01	0.13	0.10	0.00	0.03	0.00	0.03	0.00	0.00	0.01		27.64		0.00		27.66
Worker	0.03	0.03	0.29	0.00	0.22	0.00	0.23	0.00	0.00	0.01		56.54		0.00		56.61
Total	**0.04**	**0.16**	**0.39**	**0.00**	**0.25**	**0.00**	**0.26**	**0.00**	**0.00**	**0.02**		**84.18**		**0.00**		**84.27**

4.0 Mobile Detail

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	0.07	0.06	0.63	0.00	0.14	0.00	0.14	0.00	0.00	0.01		109.25		0.01		109.36
Unmitigated	0.07	0.06	0.63	0.00	0.14	0.00	0.14	0.00	0.00	0.01		109.25		0.01		109.36
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	8.06	8.06	8.06	41,514	41,514
Total	8.06	8.06	8.06	41,514	41,514

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	100.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	lb/day										lb/day					
Architectural Coating	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Toilet

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Hermosa Beach

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	4.4	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - Pipeline length is 19,000 feet. Disturbed surface assume 10 ft width X 19,000 feet = 190,000 sq ft

Construction Phase - All three of the listed phases occur at the same time.

Off-road Equipment -

Off-road Equipment - Equipment per construction schedule.

Off-road Equipment - Off highway 300 hp trucks includes water truck, flatbed trucks.

Off-road Equipment - Off highway trucks includes sideboom trucks, 150 hp

Trips and VMT - Total hauling trips based on engineering estimates, 840 trips for concrete trucks.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips -

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Energy Use -

Water And Wastewater -

Solid Waste -

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

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					
2015	0.12	0.79	0.59	0.00	0.67	0.06	0.73	0.00	0.06	0.06	0.00	99.78	99.78	0.01	0.00	99.97
2016	0.04	0.24	0.19	0.00	0.23	0.02	0.24	0.00	0.02	0.02	0.00	33.25	33.25	0.00	0.00	33.30
Total	**0.16**	**1.03**	**0.78**	**0.00**	**0.90**	**0.08**	**0.97**	**0.00**	**0.08**	**0.08**	**0.00**	**133.03**	**133.03**	**0.01**	**0.00**	**133.27**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.12	0.79	0.59	0.00	0.67	0.06	0.72	0.00	0.06	0.06	0.00	99.78	99.78	0.01	0.00	99.97
2016	0.04	0.24	0.19	0.00	0.22	0.02	0.24	0.00	0.02	0.02	0.00	33.25	33.25	0.00	0.00	33.30
Total	**0.16**	**1.03**	**0.78**	**0.00**	**0.89**	**0.08**	**0.96**	**0.00**	**0.08**	**0.08**	**0.00**	**133.03**	**133.03**	**0.01**	**0.00**	**133.27**

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	0.91	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
Energy	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
Mobile	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
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.91**	**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**

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	0.91	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
Energy	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
Mobile	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
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.91**	**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

3.1 Mitigation Measures Construction

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Trenching - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.32	0.24	0.00		0.03	0.03		0.03	0.03	0.00	32.08	32.08	0.00	0.00	32.17
Total	**0.05**	**0.32**	**0.24**	**0.00**	**0.00**	**0.03**	**0.03**	**0.00**	**0.03**	**0.03**	**0.00**	**32.08**	**32.08**	**0.00**	**0.00**	**32.17**

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	0.02	0.17	0.11	0.00	0.65	0.01	0.66	0.00	0.01	0.01	0.00	30.16	30.16	0.00	0.00	30.17
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24	2.24	0.00	0.00	2.24
Total	**0.02**	**0.17**	**0.12**	**0.00**	**0.65**	**0.01**	**0.66**	**0.00**	**0.01**	**0.01**	**0.00**	**32.40**	**32.40**	**0.00**	**0.00**	**32.41**

3.2 A. Trenching - 2015

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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.05	0.32	0.24	0.00		0.03	0.03		0.03	0.03	0.00	32.08	32.08	0.00	0.00	32.17
Total	**0.05**	**0.32**	**0.24**	**0.00**	**0.00**	**0.03**	**0.03**	**0.00**	**0.03**	**0.03**	**0.00**	**32.08**	**32.08**	**0.00**	**0.00**	**32.17**

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	0.02	0.17	0.11	0.00	0.65	0.01	0.66	0.00	0.01	0.01	0.00	30.16	30.16	0.00	0.00	30.17
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24	2.24	0.00	0.00	2.24
Total	**0.02**	**0.17**	**0.12**	**0.00**	**0.65**	**0.01**	**0.66**	**0.00**	**0.01**	**0.01**	**0.00**	**32.40**	**32.40**	**0.00**	**0.00**	**32.41**

3.2 A. Trenching - 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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.10	0.08	0.00		0.01	0.01		0.01	0.01	0.00	10.69	10.69	0.00	0.00	10.72
Total	**0.02**	**0.10**	**0.08**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**10.69**	**10.69**	**0.00**	**0.00**	**10.72**

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	0.01	0.05	0.03	0.00	0.22	0.00	0.22	0.00	0.00	0.00	0.00	10.06	10.06	0.00	0.00	10.07
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.00	0.00	0.74
Total	**0.01**	**0.05**	**0.03**	**0.00**	**0.22**	**0.00**	**0.22**	**0.00**	**0.00**	**0.00**	**0.00**	**10.80**	**10.80**	**0.00**	**0.00**	**10.81**

3.2 A. Trenching - 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					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.02	0.10	0.08	0.00		0.01	0.01		0.01	0.01	0.00	10.69	10.69	0.00	0.00	10.72
Total	**0.02**	**0.10**	**0.08**	**0.00**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**10.69**	**10.69**	**0.00**	**0.00**	**10.72**

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	0.01	0.05	0.03	0.00	0.22	0.00	0.22	0.00	0.00	0.00	0.00	10.06	10.06	0.00	0.00	10.07
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.00	0.00	0.74
Total	**0.01**	**0.05**	**0.03**	**0.00**	**0.22**	**0.00**	**0.22**	**0.00**	**0.00**	**0.00**	**0.00**	**10.80**	**10.80**	**0.00**	**0.00**	**10.81**

3.3 B. Pipeline Installation - 2015

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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.51	1.51	0.00	0.00	1.51
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24	2.24	0.00	0.00	2.24
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.75**	**3.75**	**0.00**	**0.00**	**3.75**

3.3 B. Pipeline Installation - 2015

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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.51	1.51	0.00	0.00	1.51
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24	2.24	0.00	0.00	2.24
Total	**0.00**	**0.01**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.75**	**3.75**	**0.00**	**0.00**	**3.75**

3.3 B. Pipeline Installation - 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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.50
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.00	0.00	0.74
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.24**	**1.24**	**0.00**	**0.00**	**1.24**

3.3 B. Pipeline Installation - 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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.50
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.00	0.00	0.74
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.24**	**1.24**	**0.00**	**0.00**	**1.24**

3.4 C. Trench cover and Asphalt - 2015

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	0.04	0.24	0.16	0.00		0.02	0.02		0.02	0.02	0.00	20.27	20.27	0.00	0.00	20.34
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.04**	**0.24**	**0.16**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**20.27**	**20.27**	**0.00**	**0.00**	**20.34**

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	0.00	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
Vendor	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.05	9.05	0.00	0.00	9.06
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24	2.24	0.00	0.00	2.24
Total	**0.00**	**0.05**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.29**	**11.29**	**0.00**	**0.00**	**11.30**

3.4 C. Trench cover and Asphalt - 2015

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	0.04	0.24	0.16	0.00		0.02	0.02		0.02	0.02	0.00	20.27	20.27	0.00	0.00	20.34
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.04**	**0.24**	**0.16**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**20.27**	**20.27**	**0.00**	**0.00**	**20.34**

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	0.00	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
Vendor	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.05	9.05	0.00	0.00	9.06
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24	2.24	0.00	0.00	2.24
Total	**0.00**	**0.05**	**0.05**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.29**	**11.29**	**0.00**	**0.00**	**11.30**

3.4 C. Trench cover and Asphalt - 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	0.01	0.08	0.05	0.00		0.01	0.01		0.01	0.01	0.00	6.76	6.76	0.00	0.00	6.78
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.08**	**0.05**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**6.76**	**6.76**	**0.00**	**0.00**	**6.78**

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	0.00	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
Vendor	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.02	3.02	0.00	0.00	3.02
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.00	0.00	0.74
Total	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.76**	**3.76**	**0.00**	**0.00**	**3.76**

3.4 C. Trench cover and Asphalt - 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	0.01	0.08	0.05	0.00		0.01	0.01		0.01	0.01	0.00	6.76	6.76	0.00	0.00	6.78
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.01**	**0.08**	**0.05**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**6.76**	**6.76**	**0.00**	**0.00**	**6.78**

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	0.00	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
Vendor	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.02	3.02	0.00	0.00	3.02
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	0.74	0.00	0.00	0.74
Total	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.76**	**3.76**	**0.00**	**0.00**	**3.76**

4.0 Mobile Detail

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	0.00	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
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	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
NaturalGas Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

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	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	0.91	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
Unmitigated	0.91	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.22					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.69					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.91**	**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**

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	0.22					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.69					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.91**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Toilet

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

9.0 Vegetation

Hermosa Beach

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	4.4	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - Pipeline length is 19,000 feet. Disturbed surface assume 10 ft width X 19,000 feet = 190,000 sq ft

Construction Phase - All three of the listed phases occur at the same time.

Off-road Equipment -

Off-road Equipment - Equipment per construction schedule.

Off-road Equipment - Off highway 300 hp trucks includes water truck, flatbed trucks.

Off-road Equipment - Off highway trucks includes sideboom trucks, 150 hp

Trips and VMT - Total hauling trips based on engineering estimates, 840 trips for concrete trucks.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips -

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Energy Use -

Water And Wastewater -

Solid Waste -

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

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					
2015	3.88	26.42	19.43	0.04	24.99	1.85	26.84	0.06	1.85	1.91	0.00	3,683.86	0.00	0.32	0.00	3,690.58
2016	3.61	24.47	18.83	0.04	24.99	1.69	26.68	0.06	1.69	1.75	0.00	3,682.20	0.00	0.30	0.00	3,688.45
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	3.88	26.42	19.43	0.04	24.95	1.85	26.80	0.06	1.85	1.91	0.00	3,683.86	0.00	0.32	0.00	3,690.58
2016	3.61	24.47	18.83	0.04	24.95	1.69	26.64	0.06	1.69	1.75	0.00	3,682.20	0.00	0.30	0.00	3,688.45
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	5.01	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	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
Total	**5.01**	**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**

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	5.01	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	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
Total	**5.01**	**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

3.1 Mitigation Measures Construction

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Trenching - 2015

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					0.07	0.00	0.07	0.00	0.00	0.00						0.00
Off-Road	1.65	10.58	8.12	0.01		0.85	0.85		0.85	0.85		1,179.13		0.15		1,182.25
Total	**1.65**	**10.58**	**8.12**	**0.01**	**0.07**	**0.85**	**0.92**	**0.00**	**0.85**	**0.85**		**1,179.13**		**0.15**		**1,182.25**

3.2 A. Trenching - 2015

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	0.60	5.71	3.31	0.01	24.47	0.24	24.71	0.04	0.24	0.28		1,110.38		0.03		1,110.99
Vendor	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
Worker	0.04	0.04	0.46	0.00	0.11	0.00	0.11	0.00	0.00	0.01		86.71		0.00		86.81
Total	**0.64**	**5.75**	**3.77**	**0.01**	**24.58**	**0.24**	**24.82**	**0.04**	**0.24**	**0.29**		**1,197.09**		**0.03**		**1,197.80**

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					0.03	0.00	0.03	0.00	0.00	0.00						0.00
Off-Road	1.65	10.58	8.12	0.01		0.85	0.85		0.85	0.85	0.00	1,179.13		0.15		1,182.25
Total	**1.65**	**10.58**	**8.12**	**0.01**	**0.03**	**0.85**	**0.88**	**0.00**	**0.85**	**0.85**	**0.00**	**1,179.13**		**0.15**		**1,182.25**

3.2 A. Trenching - 2015

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	0.60	5.71	3.31	0.01	24.47	0.24	24.71	0.04	0.24	0.28		1,110.38		0.03		1,110.99
Vendor	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
Worker	0.04	0.04	0.46	0.00	0.11	0.00	0.11	0.00	0.00	0.01		86.71		0.00		86.81
Total	**0.64**	**5.75**	**3.77**	**0.01**	**24.58**	**0.24**	**24.82**	**0.04**	**0.24**	**0.29**		**1,197.09**		**0.03**		**1,197.80**

3.2 A. Trenching - 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					0.07	0.00	0.07	0.00	0.00	0.00						0.00
Off-Road	1.53	9.82	8.06	0.01		0.76	0.76		0.76	0.76		1,179.13		0.14		1,182.01
Total	**1.53**	**9.82**	**8.06**	**0.01**	**0.07**	**0.76**	**0.83**	**0.00**	**0.76**	**0.76**		**1,179.13**		**0.14**		**1,182.01**

3.2 A. Trenching - 2016

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	0.54	5.16	3.01	0.01	24.47	0.22	24.69	0.04	0.22	0.26		1,111.67		0.03		1,112.22
Vendor	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
Worker	0.04	0.04	0.43	0.00	0.11	0.00	0.11	0.00	0.00	0.01		85.45		0.00		85.54
Total	**0.58**	**5.20**	**3.44**	**0.01**	**24.58**	**0.22**	**24.80**	**0.04**	**0.22**	**0.27**		**1,197.12**		**0.03**		**1,197.76**

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					0.03	0.00	0.03	0.00	0.00	0.00						0.00
Off-Road	1.53	9.82	8.06	0.01		0.76	0.76		0.76	0.76	0.00	1,179.13		0.14		1,182.01
Total	**1.53**	**9.82**	**8.06**	**0.01**	**0.03**	**0.76**	**0.79**	**0.00**	**0.76**	**0.76**	**0.00**	**1,179.13**		**0.14**		**1,182.01**

3.2 A. Trenching - 2016

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	0.54	5.16	3.01	0.01	24.47	0.22	24.69	0.04	0.22	0.26		1,111.67		0.03		1,112.22
Vendor	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
Worker	0.04	0.04	0.43	0.00	0.11	0.00	0.11	0.00	0.00	0.01		85.45		0.00		85.54
Total	**0.58**	**5.20**	**3.44**	**0.01**	**24.58**	**0.22**	**24.80**	**0.04**	**0.22**	**0.27**		**1,197.12**		**0.03**		**1,197.76**

3.3 B. Pipeline Installation - 2015

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.3 B. Pipeline Installation - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.28	0.18	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.60		0.00		55.63
Worker	0.04	0.04	0.46	0.00	0.11	0.00	0.11	0.00	0.00	0.01		86.71		0.00		86.81
Total	**0.07**	**0.32**	**0.64**	**0.00**	**0.13**	**0.01**	**0.14**	**0.00**	**0.01**	**0.02**		**142.31**		**0.00**		**142.44**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.3 B. Pipeline Installation - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.28	0.18	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.60		0.00		55.63
Worker	0.04	0.04	0.46	0.00	0.11	0.00	0.11	0.00	0.00	0.01		86.71		0.00		86.81
Total	**0.07**	**0.32**	**0.64**	**0.00**	**0.13**	**0.01**	**0.14**	**0.00**	**0.01**	**0.02**		**142.31**		**0.00**		**142.44**

3.3 B. Pipeline Installation - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.3 B. Pipeline Installation - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.26	0.17	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.72		0.00		55.74
Worker	0.04	0.04	0.43	0.00	0.11	0.00	0.11	0.00	0.00	0.01		85.45		0.00		85.54
Total	**0.06**	**0.30**	**0.60**	**0.00**	**0.13**	**0.01**	**0.14**	**0.00**	**0.01**	**0.02**		**141.17**		**0.00**		**141.28**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.3 B. Pipeline Installation - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.26	0.17	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.72		0.00		55.74
Worker	0.04	0.04	0.43	0.00	0.11	0.00	0.11	0.00	0.00	0.01		85.45		0.00		85.54
Total	**0.06**	**0.30**	**0.60**	**0.00**	**0.13**	**0.01**	**0.14**	**0.00**	**0.01**	**0.02**		**141.17**		**0.00**		**141.28**

3.4 C. Trench cover and Asphalt - 2015

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	1.33	8.05	5.35	0.01		0.68	0.68		0.68	0.68		745.03		0.12		747.54
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**1.33**	**8.05**	**5.35**	**0.01**		**0.68**	**0.68**		**0.68**	**0.68**		**745.03**		**0.12**		**747.54**

3.4 C. Trench cover and Asphalt - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.16	1.68	1.08	0.00	0.11	0.06	0.17	0.01	0.06	0.07		333.58		0.01		333.75
Worker	0.04	0.04	0.46	0.00	0.11	0.00	0.11	0.00	0.00	0.01		86.71		0.00		86.81
Total	**0.20**	**1.72**	**1.54**	**0.00**	**0.22**	**0.06**	**0.28**	**0.01**	**0.06**	**0.08**		**420.29**		**0.01**		**420.56**

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	1.33	8.05	5.35	0.01		0.68	0.68		0.68	0.68	0.00	745.03		0.12		747.54
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**1.33**	**8.05**	**5.35**	**0.01**		**0.68**	**0.68**		**0.68**	**0.68**	**0.00**	**745.03**		**0.12**		**747.54**

3.4 C. Trench cover and Asphalt - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.16	1.68	1.08	0.00	0.11	0.06	0.17	0.01	0.06	0.07		333.58		0.01		333.75
Worker	0.04	0.04	0.46	0.00	0.11	0.00	0.11	0.00	0.00	0.01		86.71		0.00		86.81
Total	**0.20**	**1.72**	**1.54**	**0.00**	**0.22**	**0.06**	**0.28**	**0.01**	**0.06**	**0.08**		**420.29**		**0.01**		**420.56**

3.4 C. Trench cover and Asphalt - 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	1.25	7.57	5.31	0.01		0.64	0.64		0.64	0.64		745.03		0.11		747.40
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**1.25**	**7.57**	**5.31**	**0.01**		**0.64**	**0.64**		**0.64**	**0.64**		**745.03**		**0.11**		**747.40**

3.4 C. Trench cover and Asphalt - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.15	1.55	0.99	0.00	0.11	0.05	0.17	0.01	0.05	0.06		334.29		0.01		334.45
Worker	0.04	0.04	0.43	0.00	0.11	0.00	0.11	0.00	0.00	0.01		85.45		0.00		85.54
Total	**0.19**	**1.59**	**1.42**	**0.00**	**0.22**	**0.05**	**0.28**	**0.01**	**0.05**	**0.07**		**419.74**		**0.01**		**419.99**

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	1.25	7.57	5.31	0.01		0.64	0.64		0.64	0.64	0.00	745.03		0.11		747.40
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**1.25**	**7.57**	**5.31**	**0.01**		**0.64**	**0.64**		**0.64**	**0.64**	**0.00**	**745.03**		**0.11**		**747.40**

3.4 C. Trench cover and Asphalt - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.15	1.55	0.99	0.00	0.11	0.05	0.17	0.01	0.05	0.06		334.29		0.01		334.45
Worker	0.04	0.04	0.43	0.00	0.11	0.00	0.11	0.00	0.00	0.01		85.45		0.00		85.54
Total	**0.19**	**1.59**	**1.42**	**0.00**	**0.22**	**0.05**	**0.28**	**0.01**	**0.05**	**0.07**		**419.74**		**0.01**		**419.99**

4.0 Mobile Detail

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	5.01	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	5.01	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	1.22					0.00	0.00		0.00	0.00						0.00
Consumer Products	3.79					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**5.01**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	lb/day										lb/day					
Architectural Coating	1.22					0.00	0.00		0.00	0.00						0.00
Consumer Products	3.79					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**5.01**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Toilet

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Hermosa Beach

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	4.4	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - Pipeline length is 19,000 feet. Disturbed surface assume 10 ft width X 19,000 feet = 190,000 sq ft

Construction Phase - All three of the listed phases occur at the same time.

Off-road Equipment -

Off-road Equipment - Equipment per construction schedule.

Off-road Equipment - Off highway 300 hp trucks includes water truck, flatbed trucks.

Off-road Equipment - Off highway trucks includes sideboom trucks, 150 hp

Trips and VMT - Total hauling trips based on engineering estimates, 840 trips for concrete trucks.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips -

Vechicle Emission Factors -

Vechicle Emission Factors -

Vechicle Emission Factors -

Energy Use -

Water And Wastewater -

Solid Waste -

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

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					
2015	3.92	26.80	19.83	0.04	24.99	1.86	26.85	0.06	1.86	1.92	0.00	3,656.35	0.00	0.32	0.00	3,663.08
2016	3.64	24.79	19.23	0.04	24.99	1.70	26.69	0.06	1.70	1.76	0.00	3,654.75	0.00	0.30	0.00	3,661.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	3.92	26.80	19.83	0.04	24.95	1.86	26.80	0.06	1.86	1.92	0.00	3,656.35	0.00	0.32	0.00	3,663.08
2016	3.64	24.79	19.23	0.04	24.95	1.70	26.64	0.06	1.70	1.76	0.00	3,654.75	0.00	0.30	0.00	3,661.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	5.01	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	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
Total	**5.01**	**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**

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	5.01	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	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
Total	**5.01**	**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

3.1 Mitigation Measures Construction

Use DPF for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Trenching - 2015

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					0.07	0.00	0.07	0.00	0.00	0.00						0.00
Off-Road	1.65	10.58	8.12	0.01		0.85	0.85		0.85	0.85		1,179.13		0.15		1,182.25
Total	**1.65**	**10.58**	**8.12**	**0.01**	**0.07**	**0.85**	**0.92**	**0.00**	**0.85**	**0.85**		**1,179.13**		**0.15**		**1,182.25**

3.2 A. Trenching - 2015

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	0.61	5.99	3.62	0.01	24.47	0.25	24.71	0.04	0.25	0.28		1,104.93		0.03		1,105.56
Vendor	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
Worker	0.04	0.05	0.44	0.00	0.11	0.00	0.11	0.00	0.00	0.01		80.32		0.00		80.42
Total	**0.65**	**6.04**	**4.06**	**0.01**	**24.58**	**0.25**	**24.82**	**0.04**	**0.25**	**0.29**		**1,185.25**		**0.03**		**1,185.98**

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					0.03	0.00	0.03	0.00	0.00	0.00						0.00
Off-Road	1.65	10.58	8.12	0.01		0.85	0.85		0.85	0.85	0.00	1,179.13		0.15		1,182.25
Total	**1.65**	**10.58**	**8.12**	**0.01**	**0.03**	**0.85**	**0.88**	**0.00**	**0.85**	**0.85**	**0.00**	**1,179.13**		**0.15**		**1,182.25**

3.2 A. Trenching - 2015

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	0.61	5.99	3.62	0.01	24.47	0.25	24.71	0.04	0.25	0.28		1,104.93		0.03		1,105.56
Vendor	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
Worker	0.04	0.05	0.44	0.00	0.11	0.00	0.11	0.00	0.00	0.01		80.32		0.00		80.42
Total	**0.65**	**6.04**	**4.06**	**0.01**	**24.58**	**0.25**	**24.82**	**0.04**	**0.25**	**0.29**		**1,185.25**		**0.03**		**1,185.98**

3.2 A. Trenching - 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					0.07	0.00	0.07	0.00	0.00	0.00						0.00
Off-Road	1.53	9.82	8.06	0.01		0.76	0.76		0.76	0.76		1,179.13		0.14		1,182.01
Total	**1.53**	**9.82**	**8.06**	**0.01**	**0.07**	**0.76**	**0.83**	**0.00**	**0.76**	**0.76**		**1,179.13**		**0.14**		**1,182.01**

3.2 A. Trenching - 2016

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	0.55	5.40	3.31	0.01	24.47	0.22	24.69	0.04	0.22	0.26		1,106.08		0.03		1,106.64
Vendor	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
Worker	0.04	0.04	0.40	0.00	0.11	0.00	0.11	0.00	0.00	0.01		79.16		0.00		79.25
Total	**0.59**	**5.44**	**3.71**	**0.01**	**24.58**	**0.22**	**24.80**	**0.04**	**0.22**	**0.27**		**1,185.24**		**0.03**		**1,185.89**

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					0.03	0.00	0.03	0.00	0.00	0.00						0.00
Off-Road	1.53	9.82	8.06	0.01		0.76	0.76		0.76	0.76	0.00	1,179.13		0.14		1,182.01
Total	**1.53**	**9.82**	**8.06**	**0.01**	**0.03**	**0.76**	**0.79**	**0.00**	**0.76**	**0.76**	**0.00**	**1,179.13**		**0.14**		**1,182.01**

3.2 A. Trenching - 2016

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	0.55	5.40	3.31	0.01	24.47	0.22	24.69	0.04	0.22	0.26		1,106.08		0.03		1,106.64
Vendor	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
Worker	0.04	0.04	0.40	0.00	0.11	0.00	0.11	0.00	0.00	0.01		79.16		0.00		79.25
Total	**0.59**	**5.44**	**3.71**	**0.01**	**24.58**	**0.22**	**24.80**	**0.04**	**0.22**	**0.27**		**1,185.24**		**0.03**		**1,185.89**

3.3 B. Pipeline Installation - 2015

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.3 B. Pipeline Installation - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.29	0.21	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.18		0.00		55.21
Worker	0.04	0.05	0.44	0.00	0.11	0.00	0.11	0.00	0.00	0.01		80.32		0.00		80.42
Total	**0.07**	**0.34**	**0.65**	**0.00**	**0.13**	**0.01**	**0.14**	**0.00**	**0.01**	**0.02**		**135.50**		**0.00**		**135.63**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.3 B. Pipeline Installation - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.29	0.21	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.18		0.00		55.21
Worker	0.04	0.05	0.44	0.00	0.11	0.00	0.11	0.00	0.00	0.01		80.32		0.00		80.42
Total	**0.07**	**0.34**	**0.65**	**0.00**	**0.13**	**0.01**	**0.14**	**0.00**	**0.01**	**0.02**		**135.50**		**0.00**		**135.63**

3.3 B. Pipeline Installation - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

3.3 B. Pipeline Installation - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.27	0.19	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.29		0.00		55.32
Worker	0.04	0.04	0.40	0.00	0.11	0.00	0.11	0.00	0.00	0.01		79.16		0.00		79.25
Total	**0.07**	**0.31**	**0.59**	**0.00**	**0.13**	**0.01**	**0.14**	**0.00**	**0.01**	**0.02**		**134.45**		**0.00**		**134.57**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

3.3 B. Pipeline Installation - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.03	0.27	0.19	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.29		0.00		55.32
Worker	0.04	0.04	0.40	0.00	0.11	0.00	0.11	0.00	0.00	0.01		79.16		0.00		79.25
Total	**0.07**	**0.31**	**0.59**	**0.00**	**0.13**	**0.01**	**0.14**	**0.00**	**0.01**	**0.02**		**134.45**		**0.00**		**134.57**

3.4 C. Trench cover and Asphalt - 2015

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	1.33	8.05	5.35	0.01		0.68	0.68		0.68	0.68		745.03		0.12		747.54
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**1.33**	**8.05**	**5.35**	**0.01**		**0.68**	**0.68**		**0.68**	**0.68**		**745.03**		**0.12**		**747.54**

3.4 C. Trench cover and Asphalt - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.17	1.74	1.24	0.00	0.11	0.06	0.17	0.01	0.06	0.07		331.09		0.01		331.27
Worker	0.04	0.05	0.44	0.00	0.11	0.00	0.11	0.00	0.00	0.01		80.32		0.00		80.42
Total	**0.21**	**1.79**	**1.68**	**0.00**	**0.22**	**0.06**	**0.28**	**0.01**	**0.06**	**0.08**		**411.41**		**0.01**		**411.69**

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	1.33	8.05	5.35	0.01		0.68	0.68		0.68	0.68	0.00	745.03		0.12		747.54
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**1.33**	**8.05**	**5.35**	**0.01**		**0.68**	**0.68**		**0.68**	**0.68**	**0.00**	**745.03**		**0.12**		**747.54**

3.4 C. Trench cover and Asphalt - 2015

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.17	1.74	1.24	0.00	0.11	0.06	0.17	0.01	0.06	0.07		331.09		0.01		331.27
Worker	0.04	0.05	0.44	0.00	0.11	0.00	0.11	0.00	0.00	0.01		80.32		0.00		80.42
Total	**0.21**	**1.79**	**1.68**	**0.00**	**0.22**	**0.06**	**0.28**	**0.01**	**0.06**	**0.08**		**411.41**		**0.01**		**411.69**

3.4 C. Trench cover and Asphalt - 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	1.25	7.57	5.31	0.01		0.64	0.64		0.64	0.64		745.03		0.11		747.40
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**1.25**	**7.57**	**5.31**	**0.01**		**0.64**	**0.64**		**0.64**	**0.64**		**745.03**		**0.11**		**747.40**

3.4 C. Trench cover and Asphalt - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.15	1.61	1.15	0.00	0.11	0.05	0.17	0.01	0.05	0.06		331.74		0.01		331.89
Worker	0.04	0.04	0.40	0.00	0.11	0.00	0.11	0.00	0.00	0.01		79.16		0.00		79.25
Total	**0.19**	**1.65**	**1.55**	**0.00**	**0.22**	**0.05**	**0.28**	**0.01**	**0.05**	**0.07**		**410.90**		**0.01**		**411.14**

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	1.25	7.57	5.31	0.01		0.64	0.64		0.64	0.64	0.00	745.03		0.11		747.40
Paving	0.00					0.00	0.00		0.00	0.00						0.00
Total	**1.25**	**7.57**	**5.31**	**0.01**		**0.64**	**0.64**		**0.64**	**0.64**	**0.00**	**745.03**		**0.11**		**747.40**

3.4 C. Trench cover and Asphalt - 2016

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.15	1.61	1.15	0.00	0.11	0.05	0.17	0.01	0.05	0.06		331.74		0.01		331.89
Worker	0.04	0.04	0.40	0.00	0.11	0.00	0.11	0.00	0.00	0.01		79.16		0.00		79.25
Total	**0.19**	**1.65**	**1.55**	**0.00**	**0.22**	**0.05**	**0.28**	**0.01**	**0.05**	**0.07**		**410.90**		**0.01**		**411.14**

4.0 Mobile Detail

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	5.01	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	5.01	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	1.22					0.00	0.00		0.00	0.00						0.00
Consumer Products	3.79					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**5.01**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	lb/day										lb/day					
Architectural Coating	1.22					0.00	0.00		0.00	0.00						0.00
Consumer Products	3.79					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**5.01**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Toilet

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

PHASE 4 – DEVELOPMENT AND OPERATIONS

Hermosa Beach

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1.3	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - There is one office, 625 sqft, located on the site.

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Equipment based on actual

Off-road Equipment - Drill rig is all electric.

Off-road Equipment - Equipment based on actual

Off-road Equipment - Equipment based on actual

Off-road Equipment - No offraod equipment in this phase

Off-road Equipment - Equipment based on actual. Diesel workover rig included in other industrial equipment.

Trips and VMT - Total hauling trips based on engineering estimates.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips - Operational emissions include 1) one site operator vehicle per day, and 2) 5 tractor-trailer oil hauling trucks per day.
Assume that site operater trip length (C-C) is default length. Use default for tranport of oil (C-W)

Vechicle Emission Factors - Only a light duty vehicle (LDT2) and truck-trailer oil transports (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty vehicle (LDT2) and oil transport (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty truck (LDT2) and oil transports (HHD) are included in operational vehicle emissions.

Energy Use - Driling rig electrical usage is 50,000 kwh over the entire property of 1.3 acre for 30 days. Other electrical is 1000 kwh for the year. Total electrical is 7,892,308

Water And Wastewater - Water use: miscellaneous repair service facility. 255.8 gall/day/employee. Outdoor water use. large residential lot, 147,788 gallons per yer Table B-7. Waste Not, Want Not: The Potential for Urban Water Conservation in California.

Solid Waste - Reference www.calrecycle.ca.gov/wastechar/DispRate.htm, group 3, mining. 1.8 tons/employee/yr. To be conservative, this value was multiplied by a factor of 10 to account for truck drivers onsite and additional waste disposal from facility operations.

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - The project proposes to install onsight power generation using microturbines to provide 50% of the facilities power demand.

Water Mitigation -

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	0.23	1.68	1.27	0.00	0.10	0.06	0.17	0.01	0.06	0.07	0.00	341.80	341.80	0.02	0.00	342.17
2017	0.26	1.85	1.48	0.00	0.13	0.07	0.20	0.01	0.07	0.08	0.00	416.34	416.34	0.02	0.00	416.75
2018	0.17	1.19	1.00	0.00	0.09	0.05	0.13	0.00	0.04	0.05	0.00	293.18	293.18	0.01	0.00	293.45
Total	**0.66**	**4.72**	**3.75**	**0.00**	**0.32**	**0.18**	**0.50**	**0.02**	**0.17**	**0.20**	**0.00**	**1,051.32**	**1,051.32**	**0.05**	**0.00**	**1,052.37**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.23	1.68	1.27	0.00	0.10	0.06	0.17	0.01	0.06	0.07	0.00	341.80	341.80	0.02	0.00	342.17
2017	0.26	1.85	1.48	0.00	0.13	0.07	0.20	0.01	0.07	0.08	0.00	416.34	416.34	0.02	0.00	416.75
2018	0.17	1.19	1.00	0.00	0.09	0.05	0.13	0.00	0.04	0.05	0.00	293.18	293.18	0.01	0.00	293.45
Total	**0.66**	**4.72**	**3.75**	**0.00**	**0.32**	**0.18**	**0.50**	**0.02**	**0.17**	**0.20**	**0.00**	**1,051.32**	**1,051.32**	**0.05**	**0.00**	**1,052.37**

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	0.27	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
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	5,089.67	5,089.67	0.23	0.09	5,121.57
Mobile	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	10.50	10.50	0.00	0.00	10.51
Waste						0.00	0.00		0.00	0.00	14.62	0.00	14.62	0.86	0.00	32.75
Water						0.00	0.00		0.00	0.00	0.00	29.73	29.73	0.01	0.00	30.24
Total	**0.28**	**0.01**	**0.06**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**14.62**	**5,129.90**	**5,144.52**	**1.10**	**0.09**	**5,195.07**

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	0.27	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
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	2,544.54	2,544.54	0.12	0.04	2,560.49
Mobile	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	10.50	10.50	0.00	0.00	10.51
Waste						0.00	0.00		0.00	0.00	14.62	0.00	14.62	0.86	0.00	32.75
Water						0.00	0.00		0.00	0.00	0.00	29.63	29.63	0.01	0.00	30.12
Total	**0.28**	**0.01**	**0.06**	**0.00**	**0.01**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**14.62**	**2,584.67**	**2,599.29**	**0.99**	**0.04**	**2,633.87**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Deliver and set up drill rig - 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	0.00	0.04	0.02	0.00		0.00	0.00		0.00	0.00	0.00	5.08	5.08	0.00	0.00	5.08
Total	**0.00**	**0.04**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**5.08**	**5.08**	**0.00**	**0.00**	**5.08**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.50
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	1.05	0.00	0.00	1.05
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.55**	**1.55**	**0.00**	**0.00**	**1.55**

3.2 A. Deliver and set up drill rig - 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	0.00	0.04	0.02	0.00		0.00	0.00		0.00	0.00	0.00	5.08	5.08	0.00	0.00	5.08
Total	**0.00**	**0.04**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**5.08**	**5.08**	**0.00**	**0.00**	**5.08**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.50
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	1.05	0.00	0.00	1.05
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.55**	**1.55**	**0.00**	**0.00**	**1.55**

3.3 B. Drill remaining wells - 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	0.03	0.18	0.20	0.00		0.01	0.01		0.01	0.01	0.00	30.04	30.04	0.00	0.00	30.09
Total	**0.03**	**0.18**	**0.20**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**30.04**	**30.04**	**0.00**	**0.00**	**30.09**

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	0.00	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
Vendor	0.02	0.21	0.15	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	41.01	41.01	0.00	0.00	41.03
Worker	0.02	0.02	0.17	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	31.08	31.08	0.00	0.00	31.12
Total	**0.04**	**0.23**	**0.32**	**0.00**	**0.05**	**0.01**	**0.06**	**0.00**	**0.01**	**0.01**	**0.00**	**72.09**	**72.09**	**0.00**	**0.00**	**72.15**

3.3 B. Drill remaining wells - 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	0.03	0.18	0.20	0.00		0.01	0.01		0.01	0.01	0.00	30.04	30.04	0.00	0.00	30.09
Total	**0.03**	**0.18**	**0.20**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**30.04**	**30.04**	**0.00**	**0.00**	**30.09**

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	0.00	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
Vendor	0.02	0.21	0.15	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	41.01	41.01	0.00	0.00	41.03
Worker	0.02	0.02	0.17	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	31.08	31.08	0.00	0.00	31.12
Total	**0.04**	**0.23**	**0.32**	**0.00**	**0.05**	**0.01**	**0.06**	**0.00**	**0.01**	**0.01**	**0.00**	**72.09**	**72.09**	**0.00**	**0.00**	**72.15**

3.3 B. Drill remaining wells - 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	0.03	0.19	0.24	0.00		0.01	0.01		0.01	0.01	0.00	37.04	37.04	0.00	0.00	37.10
Total	**0.03**	**0.19**	**0.24**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**37.04**	**37.04**	**0.00**	**0.00**	**37.10**

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	0.00	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
Vendor	0.02	0.24	0.17	0.00	0.02	0.01	0.02	0.00	0.01	0.01	0.00	50.67	50.67	0.00	0.00	50.69
Worker	0.02	0.02	0.20	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	37.56	37.56	0.00	0.00	37.60
Total	**0.04**	**0.26**	**0.37**	**0.00**	**0.07**	**0.01**	**0.07**	**0.00**	**0.01**	**0.01**	**0.00**	**88.23**	**88.23**	**0.00**	**0.00**	**88.29**

3.3 B. Drill remaining wells - 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	0.03	0.19	0.24	0.00		0.01	0.01		0.01	0.01	0.00	37.04	37.04	0.00	0.00	37.10
Total	**0.03**	**0.19**	**0.24**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**37.04**	**37.04**	**0.00**	**0.00**	**37.10**

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	0.00	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
Vendor	0.02	0.24	0.17	0.00	0.02	0.01	0.02	0.00	0.01	0.01	0.00	50.67	50.67	0.00	0.00	50.69
Worker	0.02	0.02	0.20	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.00	37.56	37.56	0.00	0.00	37.60
Total	**0.04**	**0.26**	**0.37**	**0.00**	**0.07**	**0.01**	**0.07**	**0.00**	**0.01**	**0.01**	**0.00**	**88.23**	**88.23**	**0.00**	**0.00**	**88.29**

3.3 B. Drill remaining wells - 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	0.02	0.11	0.16	0.00		0.01	0.01		0.01	0.01	0.00	25.27	25.27	0.00	0.00	25.30
Total	**0.02**	**0.11**	**0.16**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**25.27**	**25.27**	**0.00**	**0.00**	**25.30**

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	0.00	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
Vendor	0.01	0.15	0.11	0.00	0.01	0.01	0.02	0.00	0.00	0.00	0.00	34.63	34.63	0.00	0.00	34.64
Worker	0.01	0.01	0.12	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	25.12	25.12	0.00	0.00	25.14
Total	**0.02**	**0.16**	**0.23**	**0.00**	**0.04**	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**59.75**	**59.75**	**0.00**	**0.00**	**59.78**

3.3 B. Drill remaining wells - 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	0.02	0.11	0.16	0.00		0.01	0.01		0.01	0.01	0.00	25.27	25.27	0.00	0.00	25.30
Total	**0.02**	**0.11**	**0.16**	**0.00**		**0.01**	**0.01**		**0.01**	**0.01**	**0.00**	**25.27**	**25.27**	**0.00**	**0.00**	**25.30**

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	0.00	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
Vendor	0.01	0.15	0.11	0.00	0.01	0.01	0.02	0.00	0.00	0.00	0.00	34.63	34.63	0.00	0.00	34.64
Worker	0.01	0.01	0.12	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	25.12	25.12	0.00	0.00	25.14
Total	**0.02**	**0.16**	**0.23**	**0.00**	**0.04**	**0.01**	**0.06**	**0.00**	**0.00**	**0.00**	**0.00**	**59.75**	**59.75**	**0.00**	**0.00**	**59.78**

3.4 E. Routine Maintenance - 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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.02	0.17	0.12	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	32.99	32.99	0.00	0.00	33.00
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.11	6.11	0.00	0.00	6.12
Total	**0.02**	**0.17**	**0.15**	**0.00**	**0.02**	**0.01**	**0.03**	**0.00**	**0.01**	**0.01**	**0.00**	**39.10**	**39.10**	**0.00**	**0.00**	**39.12**

3.4 E. Routine Maintenance - 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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.02	0.17	0.12	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	32.99	32.99	0.00	0.00	33.00
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	6.11	6.11	0.00	0.00	6.12
Total	**0.02**	**0.17**	**0.15**	**0.00**	**0.02**	**0.01**	**0.03**	**0.00**	**0.01**	**0.01**	**0.00**	**39.10**	**39.10**	**0.00**	**0.00**	**39.12**

3.4 E. Routine Maintenance - 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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.02	0.20	0.14	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	41.46	41.46	0.00	0.00	41.48
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	7.51	7.51	0.00	0.00	7.52
Total	**0.02**	**0.20**	**0.18**	**0.00**	**0.02**	**0.01**	**0.03**	**0.00**	**0.01**	**0.01**	**0.00**	**48.97**	**48.97**	**0.00**	**0.00**	**49.00**

3.4 E. Routine Maintenance - 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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.02	0.20	0.14	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	41.46	41.46	0.00	0.00	41.48
Worker	0.00	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	7.51	7.51	0.00	0.00	7.52
Total	**0.02**	**0.20**	**0.18**	**0.00**	**0.02**	**0.01**	**0.03**	**0.00**	**0.01**	**0.01**	**0.00**	**48.97**	**48.97**	**0.00**	**0.00**	**49.00**

3.4 E. Routine Maintenance - 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	0.00	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
Total	**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**

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	0.00	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
Vendor	0.01	0.13	0.09	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	28.90	28.90	0.00	0.00	28.91
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.12	5.12	0.00	0.00	5.13
Total	**0.01**	**0.13**	**0.12**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**34.02**	**34.02**	**0.00**	**0.00**	**34.04**

3.4 E. Routine Maintenance - 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	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
Total	**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**

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	0.00	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
Vendor	0.01	0.13	0.09	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	28.90	28.90	0.00	0.00	28.91
Worker	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.12	5.12	0.00	0.00	5.13
Total	**0.01**	**0.13**	**0.12**	**0.00**	**0.02**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**34.02**	**34.02**	**0.00**	**0.00**	**34.04**

3.5 F. Conduct Major Maintenance - 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	0.12	0.94	0.40	0.00		0.03	0.03		0.03	0.03	0.00	155.07	155.07	0.01	0.00	155.27
Total	**0.12**	**0.94**	**0.40**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**155.07**	**155.07**	**0.01**	**0.00**	**155.27**

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	0.00	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
Vendor	0.01	0.12	0.09	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	23.58	23.58	0.00	0.00	23.59
Worker	0.01	0.01	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	15.29	15.29	0.00	0.00	15.31
Total	**0.02**	**0.13**	**0.18**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**38.87**	**38.87**	**0.00**	**0.00**	**38.90**

3.5 F. Conduct Major Maintenance - 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	0.12	0.94	0.40	0.00		0.03	0.03		0.03	0.03	0.00	155.07	155.07	0.01	0.00	155.27
Total	**0.12**	**0.94**	**0.40**	**0.00**		**0.03**	**0.03**		**0.03**	**0.03**	**0.00**	**155.07**	**155.07**	**0.01**	**0.00**	**155.27**

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	0.00	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
Vendor	0.01	0.12	0.09	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	23.58	23.58	0.00	0.00	23.59
Worker	0.01	0.01	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	15.29	15.29	0.00	0.00	15.31
Total	**0.02**	**0.13**	**0.18**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**38.87**	**38.87**	**0.00**	**0.00**	**38.90**

3.5 F. Conduct Major Maintenance - 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	0.14	1.05	0.49	0.00		0.04	0.04		0.04	0.04	0.00	193.83	193.83	0.01	0.00	194.07
Total	**0.14**	**1.05**	**0.49**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**193.83**	**193.83**	**0.01**	**0.00**	**194.07**

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	0.00	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
Vendor	0.01	0.14	0.10	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	29.53	29.53	0.00	0.00	29.54
Worker	0.01	0.01	0.10	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	18.73	18.73	0.00	0.00	18.75
Total	**0.02**	**0.15**	**0.20**	**0.00**	**0.04**	**0.00**	**0.04**	**0.00**	**0.00**	**0.01**	**0.00**	**48.26**	**48.26**	**0.00**	**0.00**	**48.29**

3.5 F. Conduct Major Maintenance - 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	0.14	1.05	0.49	0.00		0.04	0.04		0.04	0.04	0.00	193.83	193.83	0.01	0.00	194.07
Total	**0.14**	**1.05**	**0.49**	**0.00**		**0.04**	**0.04**		**0.04**	**0.04**	**0.00**	**193.83**	**193.83**	**0.01**	**0.00**	**194.07**

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	0.00	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
Vendor	0.01	0.14	0.10	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	29.53	29.53	0.00	0.00	29.54
Worker	0.01	0.01	0.10	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	18.73	18.73	0.00	0.00	18.75
Total	**0.02**	**0.15**	**0.20**	**0.00**	**0.04**	**0.00**	**0.04**	**0.00**	**0.00**	**0.01**	**0.00**	**48.26**	**48.26**	**0.00**	**0.00**	**48.29**

3.5 F. Conduct Major Maintenance - 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	0.09	0.64	0.33	0.00		0.02	0.02		0.02	0.02	0.00	131.96	131.96	0.01	0.00	132.11
Total	**0.09**	**0.64**	**0.33**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**131.96**	**131.96**	**0.01**	**0.00**	**132.11**

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	0.00	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
Vendor	0.01	0.09	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	20.14	20.14	0.00	0.00	20.15
Worker	0.01	0.01	0.06	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	12.50	12.50	0.00	0.00	12.51
Total	**0.02**	**0.10**	**0.12**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**32.64**	**32.64**	**0.00**	**0.00**	**32.66**

3.5 F. Conduct Major Maintenance - 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	0.09	0.64	0.33	0.00		0.02	0.02		0.02	0.02	0.00	131.96	131.96	0.01	0.00	132.11
Total	**0.09**	**0.64**	**0.33**	**0.00**		**0.02**	**0.02**		**0.02**	**0.02**	**0.00**	**131.96**	**131.96**	**0.01**	**0.00**	**132.11**

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	0.00	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
Vendor	0.01	0.09	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	20.14	20.14	0.00	0.00	20.15
Worker	0.01	0.01	0.06	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	12.50	12.50	0.00	0.00	12.51
Total	**0.02**	**0.10**	**0.12**	**0.00**	**0.03**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**32.64**	**32.64**	**0.00**	**0.00**	**32.66**

3.6 C. Remove Oil Rig - 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	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	2.03	2.03	0.00	0.00	2.03
Total	**0.00**	**0.01**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**2.03**	**2.03**	**0.00**	**0.00**	**2.03**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.25
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.50
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**	**0.00**	**0.00**	**0.75**

3.6 C. Remove Oil Rig - 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	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	2.03	2.03	0.00	0.00	2.03
Total	**0.00**	**0.01**	**0.01**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**2.03**	**2.03**	**0.00**	**0.00**	**2.03**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.25
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.50
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**	**0.00**	**0.00**	**0.75**

3.7 D. Remove 32 ft sound attenuation wall - 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	0.00	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	6.09	6.09	0.00	0.00	6.10
Total	**0.00**	**0.03**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**6.09**	**6.09**	**0.00**	**0.00**	**6.10**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.25
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.40	0.00	0.00	0.40
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.65**	**0.65**	**0.00**	**0.00**	**0.65**

3.7 D. Remove 32 ft sound attenuation wall - 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	0.00	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	6.09	6.09	0.00	0.00	6.10
Total	**0.00**	**0.03**	**0.02**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**6.09**	**6.09**	**0.00**	**0.00**	**6.10**

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	0.00	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
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.00	0.25
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.40	0.00	0.00	0.40
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.65**	**0.65**	**0.00**	**0.00**	**0.65**

4.0 Mobile Detail

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	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	10.50	10.50	0.00	0.00	10.51
Unmitigated	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	10.50	10.50	0.00	0.00	10.51
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	4.03	4.03	4.03	22,004	22,004
Total	4.03	4.03	4.03	22,004	22,004

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable 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						0.00	0.00		0.00	0.00	0.00	2,544.54	2,544.54	0.12	0.04	2,560.49
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	5,089.67	5,089.67	0.23	0.09	5,121.57
NaturalGas Mitigated	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
NaturalGas Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

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	tons/yr										MT/yr					
User Defined Industrial	0	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
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	1.74981e+007					5,089.67	0.23	0.09	5,121.57
Total						**5,089.67**	**0.23**	**0.09**	**5,121.57**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	8.74803e+006					2,544.54	0.12	0.04	2,560.49
Total						**2,544.54**	**0.12**	**0.04**	**2,560.49**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	0.27	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
Unmitigated	0.27	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.07					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.20					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.27**	**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**

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	0.07					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.20					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**0.27**	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Toilet

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					29.63	0.01	0.00	30.12
Unmitigated					29.73	0.01	0.00	30.24
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0.373468 / 8.76					29.73	0.01	0.00	30.24
Total						**29.73**	**0.01**	**0.00**	**30.24**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0.348819 / 8.76					29.63	0.01	0.00	30.12
Total						**29.63**	**0.01**	**0.00**	**30.12**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					14.62	0.86	0.00	32.75
Unmitigated					14.62	0.86	0.00	32.75
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	72					14.62	0.86	0.00	32.75
Total						**14.62**	**0.86**	**0.00**	**32.75**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	72					14.62	0.86	0.00	32.75
Total						**14.62**	**0.86**	**0.00**	**32.75**

9.0 Vegetation

Hermosa Beach

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1.3	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - There is one office, 625 sqft, located on the site.

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Equipment based on actual

Off-road Equipment - Drill rig is all electric.

Off-road Equipment - Equipment based on actual

Off-road Equipment - Equipment based on actual

Off-road Equipment - No offraod equipment in this phase

Off-road Equipment - Equipment based on actual. Diesel workover rig included in other industrial equipment.

Trips and VMT - Total hauling trips based on engineering estimates.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips - Operational emissions include 1) one site operator vehicle per day, and 2) 5 tractor-trailer oil hauling trucks per day.
Assume that site operater trip length (C-C) is default length. Use default for tranport of oil (C-W)

Vechicle Emission Factors - Only a light duty vehicle (LDT2) and truck-trailer oil transports (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty vehicle (LDT2) and oil transport (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty truck (LDT2) and oil transports (HHD) are included in operational vehicle emissions.

Energy Use - Driling rig electrical usage is 50,000 kwh over the entire property of 1.3 acre for 30 days. Other electrical is 1000 kwh for the year. Total electrical is 7,892,308

Water And Wastewater - Water use: miscellaneous repair service facility. 255.8 gall/day/employee. Outdoor water use. large residential lot, 147,788 gallons per yer Table B-7. Waste Not, Want Not: The Potential for Urban Water Conservation in California.

Solid Waste - Reference www.calrecycle.ca.gov/wastechar/DispRate.htm, group 3, mining. 1.8 tons/employee/yr. To be conservative, this value was multiplied by a factor of 10 to account for truck drivers onsite and additional waste disposal from facility operations.

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - The project proposes to install onsight power generation using microturbines to provide 50% of the facilities power demand.

Water Mitigation -

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	1.88	14.20	9.93	0.03	0.85	0.54	1.39	0.04	0.54	0.58	0.00	3,139.59	0.00	0.16	0.00	3,142.96
2017	1.77	12.78	9.49	0.03	0.85	0.48	1.34	0.04	0.48	0.53	0.00	3,131.98	0.00	0.15	0.00	3,135.13
2018	1.67	11.52	9.11	0.03	0.85	0.43	1.29	0.01	0.42	0.44	0.00	3,124.57	0.00	0.14	0.00	3,127.52
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.88	14.20	9.93	0.03	0.85	0.54	1.39	0.04	0.54	0.58	0.00	3,139.59	0.00	0.16	0.00	3,142.96
2017	1.77	12.78	9.49	0.03	0.85	0.48	1.34	0.04	0.48	0.53	0.00	3,131.98	0.00	0.15	0.00	3,135.13
2018	1.67	11.52	9.11	0.03	0.85	0.43	1.29	0.01	0.42	0.44	0.00	3,124.57	0.00	0.14	0.00	3,127.52
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.03	0.08	0.32	0.00	0.07	0.00	0.08	0.00	0.00	0.01		66.41		0.00		66.46
Total	**1.51**	**0.08**	**0.32**	**0.00**	**0.07**	**0.00**	**0.08**	**0.00**	**0.00**	**0.01**		**66.41**		**0.00**	**0.00**	**66.46**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.03	0.08	0.32	0.00	0.07	0.00	0.08	0.00	0.00	0.01		66.41		0.00		66.46
Total	**1.51**	**0.08**	**0.32**	**0.00**	**0.07**	**0.00**	**0.08**	**0.00**	**0.00**	**0.01**		**66.41**		**0.00**	**0.00**	**66.46**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Deliver and set up drill rig - 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	0.88	7.22	3.43	0.01		0.27	0.27		0.27	0.27		1,119.45		0.08		1,121.11
Total	**0.88**	**7.22**	**3.43**	**0.01**		**0.27**	**0.27**		**0.27**	**0.27**		**1,119.45**		**0.08**		**1,121.11**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.52	0.33	0.00	0.04	0.02	0.06	0.00	0.02	0.02		111.43		0.00		111.48
Worker	0.11	0.10	1.23	0.00	0.31	0.01	0.32	0.01	0.01	0.02		244.15		0.01		244.41
Total	**0.16**	**0.62**	**1.56**	**0.00**	**0.35**	**0.03**	**0.38**	**0.01**	**0.03**	**0.04**		**355.58**		**0.01**		**355.89**

3.2 A. Deliver and set up drill rig - 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	0.88	7.22	3.43	0.01		0.27	0.27		0.27	0.27	0.00	1,119.45		0.08		1,121.11
Total	**0.88**	**7.22**	**3.43**	**0.01**		**0.27**	**0.27**		**0.27**	**0.27**	**0.00**	**1,119.45**		**0.08**		**1,121.11**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.52	0.33	0.00	0.04	0.02	0.06	0.00	0.02	0.02		111.43		0.00		111.48
Worker	0.11	0.10	1.23	0.00	0.31	0.01	0.32	0.01	0.01	0.02		244.15		0.01		244.41
Total	**0.16**	**0.62**	**1.56**	**0.00**	**0.35**	**0.03**	**0.38**	**0.01**	**0.03**	**0.04**		**355.58**		**0.01**		**355.89**

3.3 B. Drill remaining wells - 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	0.18	1.21	1.32	0.00		0.07	0.07		0.07	0.07		223.81		0.02		224.15
Total	**0.18**	**1.21**	**1.32**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**		**223.81**		**0.02**		**224.15**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.13	1.43	0.91	0.00	0.10	0.05	0.15	0.01	0.05	0.06		306.44		0.01		306.58
Worker	0.11	0.10	1.23	0.00	0.31	0.01	0.32	0.01	0.01	0.02		244.15		0.01		244.41
Total	**0.24**	**1.53**	**2.14**	**0.00**	**0.41**	**0.06**	**0.47**	**0.02**	**0.06**	**0.08**		**550.59**		**0.02**		**550.99**

3.3 B. Drill remaining wells - 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	0.18	1.21	1.32	0.00		0.07	0.07		0.07	0.07	0.00	223.81		0.02		224.15
Total	**0.18**	**1.21**	**1.32**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**223.81**		**0.02**		**224.15**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.13	1.43	0.91	0.00	0.10	0.05	0.15	0.01	0.05	0.06		306.44		0.01		306.58
Worker	0.11	0.10	1.23	0.00	0.31	0.01	0.32	0.01	0.01	0.02		244.15		0.01		244.41
Total	**0.24**	**1.53**	**2.14**	**0.00**	**0.41**	**0.06**	**0.47**	**0.02**	**0.06**	**0.08**		**550.59**		**0.02**		**550.99**

3.3 B. Drill remaining wells - 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	0.17	1.06	1.33	0.00		0.06	0.06		0.06	0.06		223.81		0.01		224.12
Total	**0.17**	**1.06**	**1.33**	**0.00**		**0.06**	**0.06**		**0.06**	**0.06**		**223.81**		**0.01**		**224.12**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.12	1.32	0.84	0.00	0.10	0.04	0.15	0.01	0.04	0.05		307.06		0.01		307.19
Worker	0.10	0.09	1.14	0.00	0.31	0.01	0.32	0.01	0.01	0.02		239.27		0.01		239.52
Total	**0.22**	**1.41**	**1.98**	**0.00**	**0.41**	**0.05**	**0.47**	**0.02**	**0.05**	**0.07**		**546.33**		**0.02**		**546.71**

3.3 B. Drill remaining wells - 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	0.17	1.06	1.33	0.00		0.06	0.06		0.06	0.06	0.00	223.81		0.01		224.12
Total	**0.17**	**1.06**	**1.33**	**0.00**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**223.81**		**0.01**		**224.12**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.12	1.32	0.84	0.00	0.10	0.04	0.15	0.01	0.04	0.05		307.06		0.01		307.19
Worker	0.10	0.09	1.14	0.00	0.31	0.01	0.32	0.01	0.01	0.02		239.27		0.01		239.52
Total	**0.22**	**1.41**	**1.98**	**0.00**	**0.41**	**0.05**	**0.47**	**0.02**	**0.05**	**0.07**		**546.33**		**0.02**		**546.71**

3.3 B. Drill remaining wells - 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	0.16	0.92	1.33	0.00		0.05	0.05		0.05	0.05		223.81		0.01		224.10
Total	**0.16**	**0.92**	**1.33**	**0.00**		**0.05**	**0.05**		**0.05**	**0.05**		**223.81**		**0.01**		**224.10**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.23	0.78	0.00	0.10	0.04	0.14	0.00	0.04	0.04		307.64		0.01		307.75
Worker	0.10	0.09	1.05	0.00	0.31	0.01	0.32	0.00	0.01	0.01		234.57		0.01		234.81
Total	**0.21**	**1.32**	**1.83**	**0.00**	**0.41**	**0.05**	**0.46**	**0.00**	**0.05**	**0.05**		**542.21**		**0.02**		**542.56**

3.3 B. Drill remaining wells - 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	0.16	0.92	1.33	0.00		0.05	0.05		0.05	0.05	0.00	223.81		0.01		224.10
Total	**0.16**	**0.92**	**1.33**	**0.00**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**223.81**		**0.01**		**224.10**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.23	0.78	0.00	0.10	0.04	0.14	0.00	0.04	0.04		307.64		0.01		307.75
Worker	0.10	0.09	1.05	0.00	0.31	0.01	0.32	0.00	0.01	0.01		234.57		0.01		234.81
Total	**0.21**	**1.32**	**1.83**	**0.00**	**0.41**	**0.05**	**0.46**	**0.00**	**0.05**	**0.05**		**542.21**		**0.02**		**542.56**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.17	0.74	0.00	0.08	0.04	0.12	0.01	0.04	0.05		250.72		0.01		250.83
Worker	0.02	0.02	0.25	0.00	0.06	0.00	0.06	0.00	0.00	0.00		48.83		0.00		48.88
Total	**0.13**	**1.19**	**0.99**	**0.00**	**0.14**	**0.04**	**0.18**	**0.01**	**0.04**	**0.05**		**299.55**		**0.01**		**299.71**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.17	0.74	0.00	0.08	0.04	0.12	0.01	0.04	0.05		250.72		0.01		250.83
Worker	0.02	0.02	0.25	0.00	0.06	0.00	0.06	0.00	0.00	0.00		48.83		0.00		48.88
Total	**0.13**	**1.19**	**0.99**	**0.00**	**0.14**	**0.04**	**0.18**	**0.01**	**0.04**	**0.05**		**299.55**		**0.01**		**299.71**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.10	1.08	0.69	0.00	0.08	0.04	0.12	0.01	0.04	0.04		251.23		0.00		251.33
Worker	0.02	0.02	0.23	0.00	0.06	0.00	0.06	0.00	0.00	0.00		47.85		0.00		47.90
Total	**0.12**	**1.10**	**0.92**	**0.00**	**0.14**	**0.04**	**0.18**	**0.01**	**0.04**	**0.04**		**299.08**		**0.00**		**299.23**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.10	1.08	0.69	0.00	0.08	0.04	0.12	0.01	0.04	0.04		251.23		0.00		251.33
Worker	0.02	0.02	0.23	0.00	0.06	0.00	0.06	0.00	0.00	0.00		47.85		0.00		47.90
Total	**0.12**	**1.10**	**0.92**	**0.00**	**0.14**	**0.04**	**0.18**	**0.01**	**0.04**	**0.04**		**299.08**		**0.00**		**299.23**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.09	1.01	0.64	0.00	0.08	0.03	0.12	0.00	0.03	0.03		251.70		0.00		251.80
Worker	0.02	0.02	0.21	0.00	0.06	0.00	0.06	0.00	0.00	0.00		46.91		0.00		46.96
Total	**0.11**	**1.03**	**0.85**	**0.00**	**0.14**	**0.03**	**0.18**	**0.00**	**0.03**	**0.03**		**298.61**		**0.00**		**298.76**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.09	1.01	0.64	0.00	0.08	0.03	0.12	0.00	0.03	0.03		251.70		0.00		251.80
Worker	0.02	0.02	0.21	0.00	0.06	0.00	0.06	0.00	0.00	0.00		46.91		0.00		46.96
Total	**0.11**	**1.03**	**0.85**	**0.00**	**0.14**	**0.03**	**0.18**	**0.00**	**0.03**	**0.03**		**298.61**		**0.00**		**298.76**

3.5 F. Conduct Major Maintenance - 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	1.14	9.04	3.88	0.01		0.32	0.32		0.32	0.32		1,644.03		0.10		1,646.18
Total	**1.14**	**9.04**	**3.88**	**0.01**		**0.32**	**0.32**		**0.32**	**0.32**		**1,644.03**		**0.10**		**1,646.18**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.17	0.74	0.00	0.08	0.04	0.12	0.01	0.04	0.05		250.72		0.01		250.83
Worker	0.08	0.07	0.86	0.00	0.21	0.01	0.22	0.01	0.01	0.02		170.90		0.01		171.09
Total	**0.19**	**1.24**	**1.60**	**0.00**	**0.29**	**0.05**	**0.34**	**0.02**	**0.05**	**0.07**		**421.62**		**0.02**		**421.92**

3.5 F. Conduct Major Maintenance - 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	1.14	9.04	3.88	0.01		0.32	0.32		0.32	0.32	0.00	1,644.03		0.10		1,646.18
Total	**1.14**	**9.04**	**3.88**	**0.01**		**0.32**	**0.32**		**0.32**	**0.32**	**0.00**	**1,644.03**		**0.10**		**1,646.18**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.17	0.74	0.00	0.08	0.04	0.12	0.01	0.04	0.05		250.72		0.01		250.83
Worker	0.08	0.07	0.86	0.00	0.21	0.01	0.22	0.01	0.01	0.02		170.90		0.01		171.09
Total	**0.19**	**1.24**	**1.60**	**0.00**	**0.29**	**0.05**	**0.34**	**0.02**	**0.05**	**0.07**		**421.62**		**0.02**		**421.92**

3.5 F. Conduct Major Maintenance - 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	1.08	8.06	3.79	0.01		0.29	0.29		0.29	0.29		1,644.03		0.10		1,646.05
Total	**1.08**	**8.06**	**3.79**	**0.01**		**0.29**	**0.29**		**0.29**	**0.29**		**1,644.03**		**0.10**		**1,646.05**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.10	1.08	0.69	0.00	0.08	0.04	0.12	0.01	0.04	0.04		251.23		0.00		251.33
Worker	0.07	0.07	0.80	0.00	0.21	0.01	0.22	0.01	0.01	0.02		167.49		0.01		167.67
Total	**0.17**	**1.15**	**1.49**	**0.00**	**0.29**	**0.05**	**0.34**	**0.02**	**0.05**	**0.06**		**418.72**		**0.01**		**419.00**

3.5 F. Conduct Major Maintenance - 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	1.08	8.06	3.79	0.01		0.29	0.29		0.29	0.29	0.00	1,644.03		0.10		1,646.05
Total	**1.08**	**8.06**	**3.79**	**0.01**		**0.29**	**0.29**		**0.29**	**0.29**	**0.00**	**1,644.03**		**0.10**		**1,646.05**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.10	1.08	0.69	0.00	0.08	0.04	0.12	0.01	0.04	0.04		251.23		0.00		251.33
Worker	0.07	0.07	0.80	0.00	0.21	0.01	0.22	0.01	0.01	0.02		167.49		0.01		167.67
Total	**0.17**	**1.15**	**1.49**	**0.00**	**0.29**	**0.05**	**0.34**	**0.02**	**0.05**	**0.06**		**418.72**		**0.01**		**419.00**

3.5 F. Conduct Major Maintenance - 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	1.03	7.19	3.73	0.01		0.26	0.26		0.26	0.26		1,644.03		0.09		1,645.93
Total	**1.03**	**7.19**	**3.73**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**		**1,644.03**		**0.09**		**1,645.93**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.09	1.01	0.64	0.00	0.08	0.03	0.12	0.00	0.03	0.03		251.70		0.00		251.80
Worker	0.07	0.06	0.74	0.00	0.21	0.01	0.22	0.00	0.01	0.01		164.20		0.01		164.37
Total	**0.16**	**1.07**	**1.38**	**0.00**	**0.29**	**0.04**	**0.34**	**0.00**	**0.04**	**0.04**		**415.90**		**0.01**		**416.17**

3.5 F. Conduct Major Maintenance - 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	1.03	7.19	3.73	0.01		0.26	0.26		0.26	0.26	0.00	1,644.03		0.09		1,645.93
Total	**1.03**	**7.19**	**3.73**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**	**0.00**	**1,644.03**		**0.09**		**1,645.93**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.09	1.01	0.64	0.00	0.08	0.03	0.12	0.00	0.03	0.03		251.70		0.00		251.80
Worker	0.07	0.06	0.74	0.00	0.21	0.01	0.22	0.00	0.01	0.01		164.20		0.01		164.37
Total	**0.16**	**1.07**	**1.38**	**0.00**	**0.29**	**0.04**	**0.34**	**0.00**	**0.04**	**0.04**		**415.90**		**0.01**		**416.17**

3.6 C. Remove Oil Rig - 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	0.63	4.93	2.01	0.01		0.17	0.17		0.17	0.17		895.64		0.06		896.80
Total	**0.63**	**4.93**	**2.01**	**0.01**		**0.17**	**0.17**		**0.17**	**0.17**		**895.64**		**0.06**		**896.80**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.04	0.45	0.28	0.00	0.04	0.01	0.05	0.00	0.01	0.01		111.87		0.00		111.91
Worker	0.10	0.09	1.05	0.00	0.31	0.01	0.32	0.00	0.01	0.01		234.57		0.01		234.81
Total	**0.14**	**0.54**	**1.33**	**0.00**	**0.35**	**0.02**	**0.37**	**0.00**	**0.02**	**0.02**		**346.44**		**0.01**		**346.72**

3.6 C. Remove Oil Rig - 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	0.63	4.93	2.01	0.01		0.17	0.17		0.17	0.17	0.00	895.64		0.06		896.80
Total	**0.63**	**4.93**	**2.01**	**0.01**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**895.64**		**0.06**		**896.80**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.04	0.45	0.28	0.00	0.04	0.01	0.05	0.00	0.01	0.01		111.87		0.00		111.91
Worker	0.10	0.09	1.05	0.00	0.31	0.01	0.32	0.00	0.01	0.01		234.57		0.01		234.81
Total	**0.14**	**0.54**	**1.33**	**0.00**	**0.35**	**0.02**	**0.37**	**0.00**	**0.02**	**0.02**		**346.44**		**0.01**		**346.72**

3.7 D. Remove 32 ft sound attenuation wall - 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	0.94	6.77	4.66	0.01		0.27	0.27		0.27	0.27		1,343.26		0.08		1,345.00
Total	**0.94**	**6.77**	**4.66**	**0.01**		**0.27**	**0.27**		**0.27**	**0.27**		**1,343.26**		**0.08**		**1,345.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.22	0.14	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.93		0.00		55.96
Worker	0.04	0.03	0.42	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.83		0.00		93.92
Total	**0.06**	**0.25**	**0.56**	**0.00**	**0.14**	**0.01**	**0.16**	**0.00**	**0.01**	**0.02**		**149.76**		**0.00**		**149.88**

3.7 D. Remove 32 ft sound attenuation wall - 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	0.94	6.77	4.66	0.01		0.27	0.27		0.27	0.27	0.00	1,343.26		0.08		1,345.00
Total	**0.94**	**6.77**	**4.66**	**0.01**		**0.27**	**0.27**		**0.27**	**0.27**	**0.00**	**1,343.26**		**0.08**		**1,345.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.22	0.14	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.93		0.00		55.96
Worker	0.04	0.03	0.42	0.00	0.12	0.00	0.13	0.00	0.00	0.01		93.83		0.00		93.92
Total	**0.06**	**0.25**	**0.56**	**0.00**	**0.14**	**0.01**	**0.16**	**0.00**	**0.01**	**0.02**		**149.76**		**0.00**		**149.88**

4.0 Mobile Detail

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	0.03	0.08	0.32	0.00	0.07	0.00	0.08	0.00	0.00	0.01		66.41		0.00		66.46
Unmitigated	0.03	0.08	0.32	0.00	0.07	0.00	0.08	0.00	0.00	0.01		66.41		0.00		66.46
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	4.03	4.03	4.03	22,004	22,004
Total	4.03	4.03	4.03	22,004	22,004

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	lb/day										lb/day					
Architectural Coating	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Toilet

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Hermosa Beach

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1.3	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Southern California Edison
Climate Zone	8	**Precipitation Freq (Days)**	33		

1.3 User Entered Comments

Project Characteristics -

Land Use - There is one office, 625 sqft, located on the site.

Construction Phase - Modified total days for phases to meet project requirements.

Off-road Equipment -

Off-road Equipment - Equipment based on actual

Off-road Equipment - Drill rig is all electric.

Off-road Equipment - Equipment based on actual

Off-road Equipment - Equipment based on actual

Off-road Equipment - No offraod equipment in this phase

Off-road Equipment - Equipment based on actual. Diesel workover rig included in other industrial equipment.

Trips and VMT - Total hauling trips based on engineering estimates.

Demolition -

Grading - Total acres based on site size.

Vehicle Trips - Operational emissions include 1) one site operator vehicle per day, and 2) 5 tractor-trailer oil hauling trucks per day.
Assume that site operater trip length (C-C) is default length. Use default for tranport of oil (C-W)

Vechicle Emission Factors - Only a light duty vehicle (LDT2) and truck-trailer oil transports (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty vehicle (LDT2) and oil transport (HHD) are included in operational emissions.

Vechicle Emission Factors - Only light duty truck (LDT2) and oil transports (HHD) are included in operational vehicle emissions.

Energy Use - Driling rig electrical usage is 50,000 kwh over the entire property of 1.3 acre for 30 days. Other electrical is 1000 kwh for the year. Total electrical is 7,892,308

Water And Wastewater - Water use: miscellaneous repair service facility. 255.8 gall/day/employee. Outdoor water use. large residential lot, 147,788 gallons per yer Table B-7. Waste Not, Want Not: The Potential for Urban Water Conservation in California.

Solid Waste - Reference www.calrecycle.ca.gov/wastechar/DispRate.htm, group 3, mining. 1.8 tons/employee/yr. To be conservative, this value was multiplied by a factor of 10 to account for truck drivers onsite and additional waste disposal from facility operations.

Land Use Change -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - The project proposes to install onsight power generation using microturbines to provide 50% of the facilities power demand.

Water Mitigation -

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	1.91	14.37	10.17	0.03	0.85	0.54	1.39	0.04	0.54	0.58	0.00	3,099.25	0.00	0.16	0.00	3,102.61
2017	1.80	12.93	9.72	0.03	0.85	0.49	1.34	0.04	0.49	0.53	0.00	3,092.12	0.00	0.15	0.00	3,095.26
2018	1.70	11.64	9.34	0.03	0.85	0.44	1.29	0.01	0.43	0.44	0.00	3,085.16	0.00	0.14	0.00	3,088.10
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	1.91	14.37	10.17	0.03	0.85	0.54	1.39	0.04	0.54	0.58	0.00	3,099.25	0.00	0.16	0.00	3,102.61
2017	1.80	12.93	9.72	0.03	0.85	0.49	1.34	0.04	0.49	0.53	0.00	3,092.12	0.00	0.15	0.00	3,095.26
2018	1.70	11.64	9.34	0.03	0.85	0.44	1.29	0.01	0.43	0.44	0.00	3,085.16	0.00	0.14	0.00	3,088.10
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.03	0.09	0.31	0.00	0.07	0.00	0.08	0.00	0.00	0.01		62.43		0.00		62.48
Total	**1.51**	**0.09**	**0.31**	**0.00**	**0.07**	**0.00**	**0.08**	**0.00**	**0.00**	**0.01**		**62.43**		**0.00**	**0.00**	**62.48**

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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	0.03	0.09	0.31	0.00	0.07	0.00	0.08	0.00	0.00	0.01		62.43		0.00		62.48
Total	**1.51**	**0.09**	**0.31**	**0.00**	**0.07**	**0.00**	**0.08**	**0.00**	**0.00**	**0.01**		**62.43**		**0.00**	**0.00**	**62.48**

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 A. Deliver and set up drill rig - 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	0.88	7.22	3.43	0.01		0.27	0.27		0.27	0.27		1,119.45		0.08		1,121.11
Total	**0.88**	**7.22**	**3.43**	**0.01**		**0.27**	**0.27**		**0.27**	**0.27**		**1,119.45**		**0.08**		**1,121.11**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.54	0.38	0.00	0.04	0.02	0.06	0.00	0.02	0.02		110.58		0.00		110.63
Worker	0.12	0.12	1.16	0.00	0.31	0.01	0.32	0.01	0.01	0.02		226.17		0.01		226.42
Total	**0.17**	**0.66**	**1.54**	**0.00**	**0.35**	**0.03**	**0.38**	**0.01**	**0.03**	**0.04**		**336.75**		**0.01**		**337.05**

3.2 A. Deliver and set up drill rig - 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	0.88	7.22	3.43	0.01		0.27	0.27		0.27	0.27	0.00	1,119.45		0.08		1,121.11
Total	**0.88**	**7.22**	**3.43**	**0.01**		**0.27**	**0.27**		**0.27**	**0.27**	**0.00**	**1,119.45**		**0.08**		**1,121.11**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.05	0.54	0.38	0.00	0.04	0.02	0.06	0.00	0.02	0.02		110.58		0.00		110.63
Worker	0.12	0.12	1.16	0.00	0.31	0.01	0.32	0.01	0.01	0.02		226.17		0.01		226.42
Total	**0.17**	**0.66**	**1.54**	**0.00**	**0.35**	**0.03**	**0.38**	**0.01**	**0.03**	**0.04**		**336.75**		**0.01**		**337.05**

3.3 B. Drill remaining wells - 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	0.18	1.21	1.32	0.00		0.07	0.07		0.07	0.07		223.81		0.02		224.15
Total	**0.18**	**1.21**	**1.32**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**		**223.81**		**0.02**		**224.15**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.14	1.48	1.05	0.00	0.10	0.05	0.15	0.01	0.05	0.06		304.09		0.01		304.24
Worker	0.12	0.12	1.16	0.00	0.31	0.01	0.32	0.01	0.01	0.02		226.17		0.01		226.42
Total	**0.26**	**1.60**	**2.21**	**0.00**	**0.41**	**0.06**	**0.47**	**0.02**	**0.06**	**0.08**		**530.26**		**0.02**		**530.66**

3.3 B. Drill remaining wells - 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	0.18	1.21	1.32	0.00		0.07	0.07		0.07	0.07	0.00	223.81		0.02		224.15
Total	**0.18**	**1.21**	**1.32**	**0.00**		**0.07**	**0.07**		**0.07**	**0.07**	**0.00**	**223.81**		**0.02**		**224.15**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.14	1.48	1.05	0.00	0.10	0.05	0.15	0.01	0.05	0.06		304.09		0.01		304.24
Worker	0.12	0.12	1.16	0.00	0.31	0.01	0.32	0.01	0.01	0.02		226.17		0.01		226.42
Total	**0.26**	**1.60**	**2.21**	**0.00**	**0.41**	**0.06**	**0.47**	**0.02**	**0.06**	**0.08**		**530.26**		**0.02**		**530.66**

3.3 B. Drill remaining wells - 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	0.17	1.06	1.33	0.00		0.06	0.06		0.06	0.06		223.81		0.01		224.12
Total	**0.17**	**1.06**	**1.33**	**0.00**		**0.06**	**0.06**		**0.06**	**0.06**		**223.81**		**0.01**		**224.12**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.13	1.36	0.98	0.00	0.10	0.05	0.15	0.01	0.05	0.05		304.66		0.01		304.79
Worker	0.11	0.11	1.06	0.00	0.31	0.01	0.32	0.01	0.01	0.02		221.63		0.01		221.87
Total	**0.24**	**1.47**	**2.04**	**0.00**	**0.41**	**0.06**	**0.47**	**0.02**	**0.06**	**0.07**		**526.29**		**0.02**		**526.66**

3.3 B. Drill remaining wells - 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	0.17	1.06	1.33	0.00		0.06	0.06		0.06	0.06	0.00	223.81		0.01		224.12
Total	**0.17**	**1.06**	**1.33**	**0.00**		**0.06**	**0.06**		**0.06**	**0.06**	**0.00**	**223.81**		**0.01**		**224.12**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.13	1.36	0.98	0.00	0.10	0.05	0.15	0.01	0.05	0.05		304.66		0.01		304.79
Worker	0.11	0.11	1.06	0.00	0.31	0.01	0.32	0.01	0.01	0.02		221.63		0.01		221.87
Total	**0.24**	**1.47**	**2.04**	**0.00**	**0.41**	**0.06**	**0.47**	**0.02**	**0.06**	**0.07**		**526.29**		**0.02**		**526.66**

3.3 B. Drill remaining wells - 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	0.16	0.92	1.33	0.00		0.05	0.05		0.05	0.05		223.81		0.01		224.10
Total	**0.16**	**0.92**	**1.33**	**0.00**		**0.05**	**0.05**		**0.05**	**0.05**		**223.81**		**0.01**		**224.10**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.12	1.27	0.92	0.00	0.10	0.04	0.14	0.00	0.04	0.04		305.18		0.01		305.30
Worker	0.10	0.10	0.98	0.00	0.31	0.01	0.32	0.00	0.01	0.01		217.24		0.01		217.46
Total	**0.22**	**1.37**	**1.90**	**0.00**	**0.41**	**0.05**	**0.46**	**0.00**	**0.05**	**0.05**		**522.42**		**0.02**		**522.76**

3.3 B. Drill remaining wells - 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	0.16	0.92	1.33	0.00		0.05	0.05		0.05	0.05	0.00	223.81		0.01		224.10
Total	**0.16**	**0.92**	**1.33**	**0.00**		**0.05**	**0.05**		**0.05**	**0.05**	**0.00**	**223.81**		**0.01**		**224.10**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.12	1.27	0.92	0.00	0.10	0.04	0.14	0.00	0.04	0.04		305.18		0.01		305.30
Worker	0.10	0.10	0.98	0.00	0.31	0.01	0.32	0.00	0.01	0.01		217.24		0.01		217.46
Total	**0.22**	**1.37**	**1.90**	**0.00**	**0.41**	**0.05**	**0.46**	**0.00**	**0.05**	**0.05**		**522.42**		**0.02**		**522.76**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.12	1.21	0.86	0.00	0.08	0.04	0.12	0.01	0.04	0.05		248.80		0.01		248.92
Worker	0.02	0.02	0.23	0.00	0.06	0.00	0.06	0.00	0.00	0.00		45.23		0.00		45.28
Total	**0.14**	**1.23**	**1.09**	**0.00**	**0.14**	**0.04**	**0.18**	**0.01**	**0.04**	**0.05**		**294.03**		**0.01**		**294.20**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.12	1.21	0.86	0.00	0.08	0.04	0.12	0.01	0.04	0.05		248.80		0.01		248.92
Worker	0.02	0.02	0.23	0.00	0.06	0.00	0.06	0.00	0.00	0.00		45.23		0.00		45.28
Total	**0.14**	**1.23**	**1.09**	**0.00**	**0.14**	**0.04**	**0.18**	**0.01**	**0.04**	**0.05**		**294.03**		**0.01**		**294.20**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.12	0.80	0.00	0.08	0.04	0.12	0.01	0.04	0.04		249.26		0.01		249.37
Worker	0.02	0.02	0.21	0.00	0.06	0.00	0.06	0.00	0.00	0.00		44.33		0.00		44.37
Total	**0.13**	**1.14**	**1.01**	**0.00**	**0.14**	**0.04**	**0.18**	**0.01**	**0.04**	**0.04**		**293.59**		**0.01**		**293.74**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.12	0.80	0.00	0.08	0.04	0.12	0.01	0.04	0.04		249.26		0.01		249.37
Worker	0.02	0.02	0.21	0.00	0.06	0.00	0.06	0.00	0.00	0.00		44.33		0.00		44.37
Total	**0.13**	**1.14**	**1.01**	**0.00**	**0.14**	**0.04**	**0.18**	**0.01**	**0.04**	**0.04**		**293.59**		**0.01**		**293.74**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.10	1.04	0.75	0.00	0.08	0.03	0.12	0.00	0.03	0.03		249.69		0.00		249.79
Worker	0.02	0.02	0.20	0.00	0.06	0.00	0.06	0.00	0.00	0.00		43.45		0.00		43.49
Total	**0.12**	**1.06**	**0.95**	**0.00**	**0.14**	**0.03**	**0.18**	**0.00**	**0.03**	**0.03**		**293.14**		**0.00**		**293.28**

3.4 E. Routine Maintenance - 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**		**0.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.10	1.04	0.75	0.00	0.08	0.03	0.12	0.00	0.03	0.03		249.69		0.00		249.79
Worker	0.02	0.02	0.20	0.00	0.06	0.00	0.06	0.00	0.00	0.00		43.45		0.00		43.49
Total	**0.12**	**1.06**	**0.95**	**0.00**	**0.14**	**0.03**	**0.18**	**0.00**	**0.03**	**0.03**		**293.14**		**0.00**		**293.28**

3.5 F. Conduct Major Maintenance - 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	1.14	9.04	3.88	0.01		0.32	0.32		0.32	0.32		1,644.03		0.10		1,646.18
Total	**1.14**	**9.04**	**3.88**	**0.01**		**0.32**	**0.32**		**0.32**	**0.32**		**1,644.03**		**0.10**		**1,646.18**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.12	1.21	0.86	0.00	0.08	0.04	0.12	0.01	0.04	0.05		248.80		0.01		248.92
Worker	0.08	0.08	0.81	0.00	0.21	0.01	0.22	0.01	0.01	0.02		158.32		0.01		158.50
Total	**0.20**	**1.29**	**1.67**	**0.00**	**0.29**	**0.05**	**0.34**	**0.02**	**0.05**	**0.07**		**407.12**		**0.02**		**407.42**

3.5 F. Conduct Major Maintenance - 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	1.14	9.04	3.88	0.01		0.32	0.32		0.32	0.32	0.00	1,644.03		0.10		1,646.18
Total	**1.14**	**9.04**	**3.88**	**0.01**		**0.32**	**0.32**		**0.32**	**0.32**	**0.00**	**1,644.03**		**0.10**		**1,646.18**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.12	1.21	0.86	0.00	0.08	0.04	0.12	0.01	0.04	0.05		248.80		0.01		248.92
Worker	0.08	0.08	0.81	0.00	0.21	0.01	0.22	0.01	0.01	0.02		158.32		0.01		158.50
Total	**0.20**	**1.29**	**1.67**	**0.00**	**0.29**	**0.05**	**0.34**	**0.02**	**0.05**	**0.07**		**407.12**		**0.02**		**407.42**

3.5 F. Conduct Major Maintenance - 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	1.08	8.06	3.79	0.01		0.29	0.29		0.29	0.29		1,644.03		0.10		1,646.05
Total	**1.08**	**8.06**	**3.79**	**0.01**		**0.29**	**0.29**		**0.29**	**0.29**		**1,644.03**		**0.10**		**1,646.05**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.12	0.80	0.00	0.08	0.04	0.12	0.01	0.04	0.04		249.26		0.01		249.37
Worker	0.08	0.08	0.74	0.00	0.21	0.01	0.22	0.01	0.01	0.02		155.14		0.01		155.31
Total	**0.19**	**1.20**	**1.54**	**0.00**	**0.29**	**0.05**	**0.34**	**0.02**	**0.05**	**0.06**		**404.40**		**0.02**		**404.68**

3.5 F. Conduct Major Maintenance - 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	1.08	8.06	3.79	0.01		0.29	0.29		0.29	0.29	0.00	1,644.03		0.10		1,646.05
Total	**1.08**	**8.06**	**3.79**	**0.01**		**0.29**	**0.29**		**0.29**	**0.29**	**0.00**	**1,644.03**		**0.10**		**1,646.05**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.11	1.12	0.80	0.00	0.08	0.04	0.12	0.01	0.04	0.04		249.26		0.01		249.37
Worker	0.08	0.08	0.74	0.00	0.21	0.01	0.22	0.01	0.01	0.02		155.14		0.01		155.31
Total	**0.19**	**1.20**	**1.54**	**0.00**	**0.29**	**0.05**	**0.34**	**0.02**	**0.05**	**0.06**		**404.40**		**0.02**		**404.68**

3.5 F. Conduct Major Maintenance - 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	1.03	7.19	3.73	0.01		0.26	0.26		0.26	0.26		1,644.03		0.09		1,645.93
Total	**1.03**	**7.19**	**3.73**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**		**1,644.03**		**0.09**		**1,645.93**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.10	1.04	0.75	0.00	0.08	0.03	0.12	0.00	0.03	0.03		249.69		0.00		249.79
Worker	0.07	0.07	0.69	0.00	0.21	0.01	0.22	0.00	0.01	0.01		152.07		0.01		152.22
Total	**0.17**	**1.11**	**1.44**	**0.00**	**0.29**	**0.04**	**0.34**	**0.00**	**0.04**	**0.04**		**401.76**		**0.01**		**402.01**

3.5 F. Conduct Major Maintenance - 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	1.03	7.19	3.73	0.01		0.26	0.26		0.26	0.26	0.00	1,644.03		0.09		1,645.93
Total	**1.03**	**7.19**	**3.73**	**0.01**		**0.26**	**0.26**		**0.26**	**0.26**	**0.00**	**1,644.03**		**0.09**		**1,645.93**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.10	1.04	0.75	0.00	0.08	0.03	0.12	0.00	0.03	0.03		249.69		0.00		249.79
Worker	0.07	0.07	0.69	0.00	0.21	0.01	0.22	0.00	0.01	0.01		152.07		0.01		152.22
Total	**0.17**	**1.11**	**1.44**	**0.00**	**0.29**	**0.04**	**0.34**	**0.00**	**0.04**	**0.04**		**401.76**		**0.01**		**402.01**

3.6 C. Remove Oil Rig - 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	0.63	4.93	2.01	0.01		0.17	0.17		0.17	0.17		895.64		0.06		896.80
Total	**0.63**	**4.93**	**2.01**	**0.01**		**0.17**	**0.17**		**0.17**	**0.17**		**895.64**		**0.06**		**896.80**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.04	0.46	0.33	0.00	0.04	0.01	0.05	0.00	0.01	0.01		110.97		0.00		111.02
Worker	0.10	0.10	0.98	0.00	0.31	0.01	0.32	0.00	0.01	0.01		217.24		0.01		217.46
Total	**0.14**	**0.56**	**1.31**	**0.00**	**0.35**	**0.02**	**0.37**	**0.00**	**0.02**	**0.02**		**328.21**		**0.01**		**328.48**

3.6 C. Remove Oil Rig - 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	0.63	4.93	2.01	0.01		0.17	0.17		0.17	0.17	0.00	895.64		0.06		896.80
Total	**0.63**	**4.93**	**2.01**	**0.01**		**0.17**	**0.17**		**0.17**	**0.17**	**0.00**	**895.64**		**0.06**		**896.80**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.04	0.46	0.33	0.00	0.04	0.01	0.05	0.00	0.01	0.01		110.97		0.00		111.02
Worker	0.10	0.10	0.98	0.00	0.31	0.01	0.32	0.00	0.01	0.01		217.24		0.01		217.46
Total	**0.14**	**0.56**	**1.31**	**0.00**	**0.35**	**0.02**	**0.37**	**0.00**	**0.02**	**0.02**		**328.21**		**0.01**		**328.48**

3.7 D. Remove 32 ft sound attenuation wall - 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	0.94	6.77	4.66	0.01		0.27	0.27		0.27	0.27		1,343.26		0.08		1,345.00
Total	**0.94**	**6.77**	**4.66**	**0.01**		**0.27**	**0.27**		**0.27**	**0.27**		**1,343.26**		**0.08**		**1,345.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.23	0.17	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.49		0.00		55.51
Worker	0.04	0.04	0.39	0.00	0.12	0.00	0.13	0.00	0.00	0.01		86.90		0.00		86.99
Total	**0.06**	**0.27**	**0.56**	**0.00**	**0.14**	**0.01**	**0.16**	**0.00**	**0.01**	**0.02**		**142.39**		**0.00**		**142.50**

3.7 D. Remove 32 ft sound attenuation wall - 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	0.94	6.77	4.66	0.01		0.27	0.27		0.27	0.27	0.00	1,343.26		0.08		1,345.00
Total	**0.94**	**6.77**	**4.66**	**0.01**		**0.27**	**0.27**		**0.27**	**0.27**	**0.00**	**1,343.26**		**0.08**		**1,345.00**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	0.02	0.23	0.17	0.00	0.02	0.01	0.03	0.00	0.01	0.01		55.49		0.00		55.51
Worker	0.04	0.04	0.39	0.00	0.12	0.00	0.13	0.00	0.00	0.01		86.90		0.00		86.99
Total	**0.06**	**0.27**	**0.56**	**0.00**	**0.14**	**0.01**	**0.16**	**0.00**	**0.01**	**0.02**		**142.39**		**0.00**		**142.50**

4.0 Mobile Detail

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	0.03	0.09	0.31	0.00	0.07	0.00	0.08	0.00	0.00	0.01		62.43		0.00		62.48
Unmitigated	0.03	0.09	0.31	0.00	0.07	0.00	0.08	0.00	0.00	0.01		62.43		0.00		62.48
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	4.03	4.03	4.03	22,004	22,004
Total	4.03	4.03	4.03	22,004	22,004

4.3 Trip Type Information

	Miles			Trip %		
Land Use	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
User Defined Industrial	8.90	13.30	7.40	0.00	0.00	0.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Percent of Electricity Use Generated with Renewable 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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	1.48	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	lb/day										lb/day					
Architectural Coating	0.36					0.00	0.00		0.00	0.00						0.00
Consumer Products	1.12					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**1.48**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Toilet

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

EXHIBIT K

CO “HOT SPOTS” MODELING

```
                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     6 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Model Assumes No FLAGPOLE Receptor Heights.

 **Model Calculates  2 Short Term Average(s) of:   1-HR   8-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      6 Source(s);       3 Source Group(s); and     721 Receptor(s)

 **The Model Assumes A Pollutant Type of:  CO

 **Model Set To Continue RUNning After the Setup Testing.

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of Concurrent Values for Postprocessing (POSTFILE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    42.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      4.0 MB of RAM.

 **Detailed Error/Message File:   HermosaBeachPhase4CO.err
 **File for Summary of Results:   HermosaBeachPhase4CO.sum
```

**MODELOPTs: RegDFAULT CONC ELEV

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

**MODELOPTs: RegDFAULT CONC ELEV

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: Z:\Petrotech\E&B Natural Resources Management\E&B409 - Hermosa Beach AQIA\Metero Met Version: 11059
Profile file: Z:\Petrotech\E&B Natural Resources Management\E&B409 - Hermosa Beach AQIA\Metero
Surface format: FREE
Profile format: FREE
Surface station no.: 0 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2005 Year: 2005

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
05	01	01	1	01	-3.2	0.062	-9.000	-9.000	-999.	35.	6.5	0.26	1.00	1.00	1.10	52.	9.1	282.5	5.5
05	01	01	1	02	-3.9	0.073	-9.000	-9.000	-999.	45.	8.9	0.26	1.00	1.00	1.30	51.	9.1	282.0	5.5
05	01	01	1	03	-2.7	0.056	-9.000	-9.000	-999.	30.	5.9	0.26	1.00	1.00	1.00	48.	9.1	281.4	5.5
05	01	01	1	04	-2.3	0.056	-9.000	-9.000	-999.	30.	6.8	0.26	1.00	1.00	1.00	52.	9.1	280.9	5.5
05	01	01	1	05	-2.8	0.062	-9.000	-9.000	-999.	35.	7.5	0.26	1.00	1.00	1.10	62.	9.1	281.4	5.5
05	01	01	1	06	-5.3	0.078	-9.000	-9.000	-999.	51.	8.2	0.26	1.00	1.00	1.40	64.	9.1	280.9	5.5
05	01	01	1	07	-3.9	0.067	-9.000	-9.000	-999.	40.	7.0	0.26	1.00	1.00	1.20	55.	9.1	280.4	5.5
05	01	01	1	08	-4.9	0.078	-9.000	-9.000	-999.	51.	8.8	0.26	1.00	0.53	1.40	76.	9.1	280.9	5.5
05	01	01	1	09	45.2	0.282	0.535	0.005	122.	344.	-44.4	0.26	1.00	0.30	2.20	78.	9.1	283.1	5.5
05	01	01	1	10	114.4	0.293	1.400	0.005	863.	365.	-19.8	0.26	1.00	0.22	2.10	83.	9.1	284.9	5.5
05	01	01	1	11	139.9	0.299	1.676	0.010	1212.	376.	-17.2	0.26	1.00	0.19	2.10	80.	9.1	287.0	5.5
05	01	01	1	12	15.0	0.122	0.798	0.010	1215.	125.	-10.8	0.26	1.00	0.18	0.80	30.	9.1	287.0	5.5
05	01	01	1	13	28.1	0.223	0.985	0.009	1221.	242.	-35.3	0.26	1.00	0.18	1.70	184.	9.1	287.0	5.5
05	01	01	1	14	17.9	0.256	0.849	0.009	1225.	298.	-84.0	0.26	1.00	0.19	2.10	201.	9.1	287.0	5.5
05	01	01	1	15	4.2	0.231	0.522	0.009	1226.	256.	-267.3	0.26	1.00	0.22	2.00	205.	9.1	286.4	5.5
05	01	01	1	16	0.1	0.180	0.151	0.009	1226.	176.	-5205.5	0.26	1.00	0.31	1.60	211.	9.1	286.4	5.5
05	01	01	1	17	-1.7	0.045	-9.000	-9.000	-999.	46.	4.9	0.26	1.00	0.57	0.80	216.	9.1	285.9	5.5
05	01	01	1	18	-0.6	0.028	-9.000	-9.000	-999.	11.	3.4	0.26	1.00	1.00	0.50	38.	9.1	285.4	5.5
05	01	01	1	19	-0.4	0.022	-9.000	-9.000	-999.	8.	2.8	0.26	1.00	1.00	0.40	261.	9.1	284.9	5.5
05	01	01	1	20	-0.4	0.022	-9.000	-9.000	-999.	8.	2.8	0.26	1.00	1.00	0.40	337.	9.1	284.9	5.5
05	01	01	1	21	-1.5	0.045	-9.000	-9.000	-999.	22.	5.5	0.26	1.00	1.00	0.80	12.	9.1	284.9	5.5
05	01	01	1	22	-1.5	0.045	-9.000	-9.000	-999.	22.	5.5	0.26	1.00	1.00	0.80	360.	9.1	284.9	5.5
05	01	01	1	23	-1.9	0.050	-9.000	-9.000	-999.	26.	6.2	0.26	1.00	1.00	0.90	46.	9.1	284.2	5.5
05	01	01	1	24	-1.5	0.045	-9.000	-9.000	-999.	22.	5.5	0.26	1.00	1.00	0.80	12.	9.1	284.2	5.5

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
05	01	01	01	5.5	0	-999.	-99.00	282.6	99.0	-99.00	-99.00
05	01	01	01	9.1	1	52.	1.10	-999.0	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

**MODELOPTs: RegDFAULT CONC ELEV

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 3 YEARS ***

** CONC OF CO IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
SRCGP1	1ST HIGHEST VALUE IS	0.07882 AT	(371083.04, 3747411.05, 21.12, 21.12, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.07293 AT	(371056.55, 3747393.95, 22.33, 22.33, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.07288 AT	(371081.46, 3747391.90, 21.22, 21.22, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.07197 AT	(371134.45, 3747426.09, 20.60, 25.04, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.07168 AT	(371107.96, 3747408.99, 19.35, 19.35, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.07030 AT	(371127.80, 3747442.68, 20.25, 25.41, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.06983 AT	(371100.00, 3747400.00, 19.80, 19.80, 0.00)	GC	UCART1
	8TH HIGHEST VALUE IS	0.06389 AT	(371103.30, 3747443.70, 19.63, 19.63, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.06369 AT	(371132.87, 3747406.94, 20.29, 20.29, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.05892 AT	(371058.13, 3747413.10, 22.34, 22.34, 0.00)	DC	
SRCGP2	1ST HIGHEST VALUE IS	1.16737 AT	(371034.79, 3747434.31, 22.23, 22.23, 0.00)	DC	
	2ND HIGHEST VALUE IS	1.09951 AT	(371055.55, 3747442.63, 22.43, 22.43, 0.00)	DC	
	3RD HIGHEST VALUE IS	1.04854 AT	(371058.13, 3747413.10, 22.34, 22.34, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.94960 AT	(371079.08, 3747444.03, 21.39, 21.39, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.84878 AT	(371040.61, 3747455.90, 22.43, 22.43, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.78392 AT	(371083.04, 3747411.05, 21.12, 21.12, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.69384 AT	(371103.30, 3747443.70, 19.63, 19.63, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.67160 AT	(371053.61, 3747475.56, 22.52, 22.52, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.66075 AT	(371090.84, 3747474.82, 20.22, 20.22, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.60670 AT	(371056.55, 3747393.95, 22.33, 22.33, 0.00)	DC	
ALL	1ST HIGHEST VALUE IS	1.18991 AT	(371034.79, 3747434.31, 22.23, 22.23, 0.00)	DC	
	2ND HIGHEST VALUE IS	1.13522 AT	(371055.55, 3747442.63, 22.43, 22.43, 0.00)	DC	
	3RD HIGHEST VALUE IS	1.10747 AT	(371058.13, 3747413.10, 22.34, 22.34, 0.00)	DC	
	4TH HIGHEST VALUE IS	1.00296 AT	(371079.08, 3747444.03, 21.39, 21.39, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.87085 AT	(371040.61, 3747455.90, 22.43, 22.43, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.86275 AT	(371083.04, 3747411.05, 21.12, 21.12, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.75773 AT	(371103.30, 3747443.70, 19.63, 19.63, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.70049 AT	(371090.84, 3747474.82, 20.22, 20.22, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.69527 AT	(371053.61, 3747475.56, 22.52, 22.52, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.67963 AT	(371056.55, 3747393.95, 22.33, 22.33, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: RegDFAULT CONC ELEV

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

GROUP ID			AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
SRCGP1	HIGH	1ST HIGH VALUE IS	10.03359	ON 07041214: AT (	371028.47,	3747357.71,	22.05,	22.05,	0.00)	DC	
	HIGH	2ND HIGH VALUE IS	4.69411	ON 07010504: AT (	371028.47,	3747357.71,	22.05,	22.05,	0.00)	DC	
	HIGH	6TH HIGH VALUE IS	3.18436	ON 06122713: AT (	371054.97,	3747374.80,	22.08,	22.08,	0.00)	DC	
SRCGP2	HIGH	1ST HIGH VALUE IS	5.54386	ON 05040318: AT (	371034.79,	3747434.31,	22.23,	22.23,	0.00)	DC	
	HIGH	2ND HIGH VALUE IS	5.35947	ON 05122616: AT (	371034.79,	3747434.31,	22.23,	22.23,	0.00)	DC	
	HIGH	6TH HIGH VALUE IS	4.98013	ON 07050118: AT (	371034.79,	3747434.31,	22.23,	22.23,	0.00)	DC	
ALL	HIGH	1ST HIGH VALUE IS	11.76566	ON 07041214: AT (	371028.47,	3747357.71,	22.05,	22.05,	0.00)	DC	
	HIGH	2ND HIGH VALUE IS	7.57840	ON 07010504: AT (	371028.47,	3747357.71,	22.05,	22.05,	0.00)	DC	
	HIGH	6TH HIGH VALUE IS	4.98117	ON 07050118: AT (	371034.79,	3747434.31,	22.23,	22.23,	0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: RegDFAULT CONC ELEV

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

GROUP ID			AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
SRCGP1	HIGH	1ST HIGH VALUE IS	1.86049	ON 06040516: AT (	371054.97,	3747374.80,	22.08,	22.08,	0.00)	DC	
SRCGP2	HIGH	1ST HIGH VALUE IS	3.81605	ON 06081416: AT (	371034.79,	3747434.31,	22.23,	22.23,	0.00)	DC	
ALL	HIGH	1ST HIGH VALUE IS	3.82275	ON 06081416: AT (	371034.79,	3747434.31,	22.23,	22.23,	0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: RegDFAULT CONC ELEV

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 152 Informational Message(s)

A Total of 26280 Hours Were Processed

A Total of 0 Calm Hours Identified

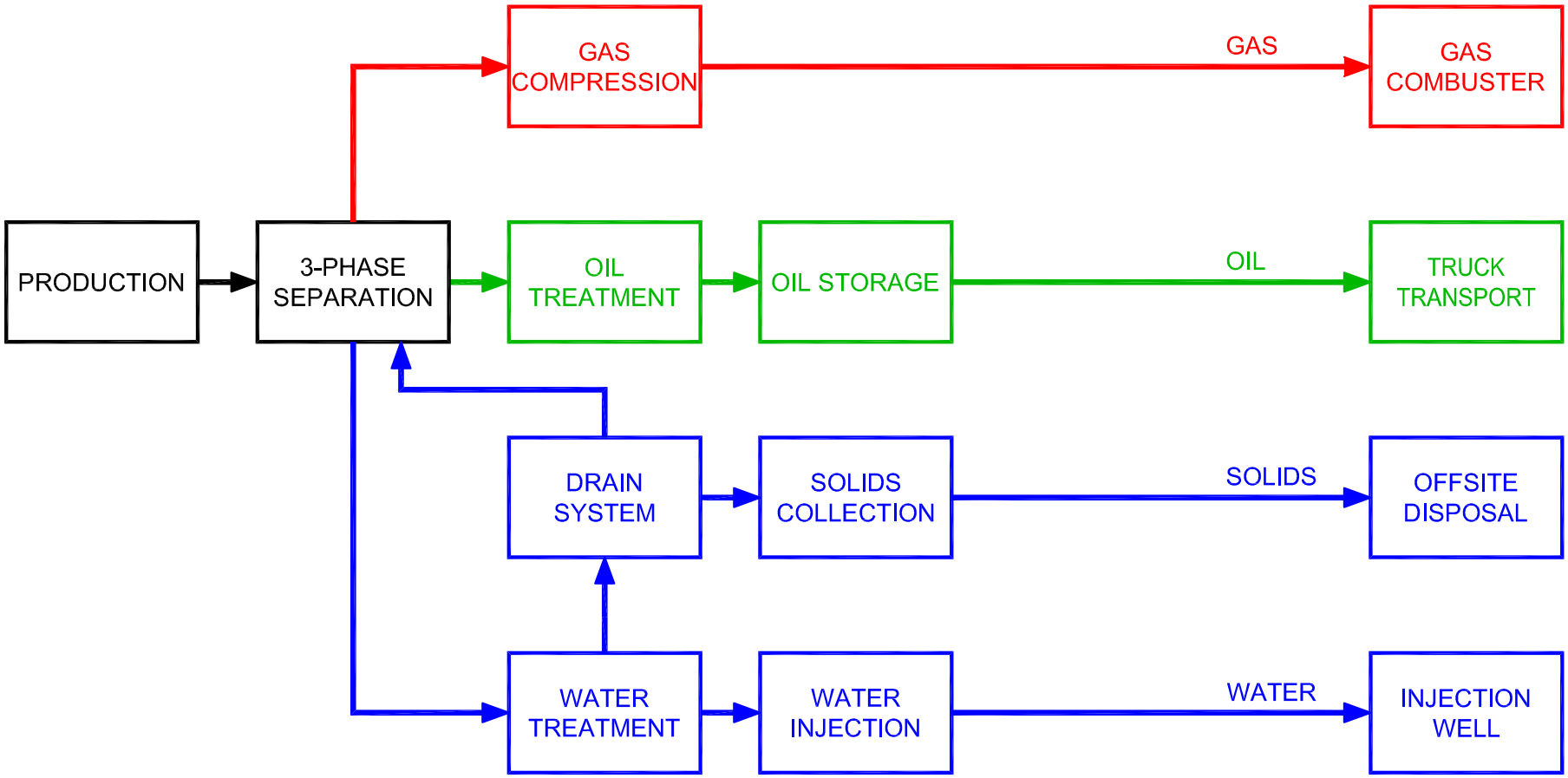
A Total of 152 Missing Hours Identified (0.58 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

EXHIBIT L

PROCESS FLOW DIAGRAMS

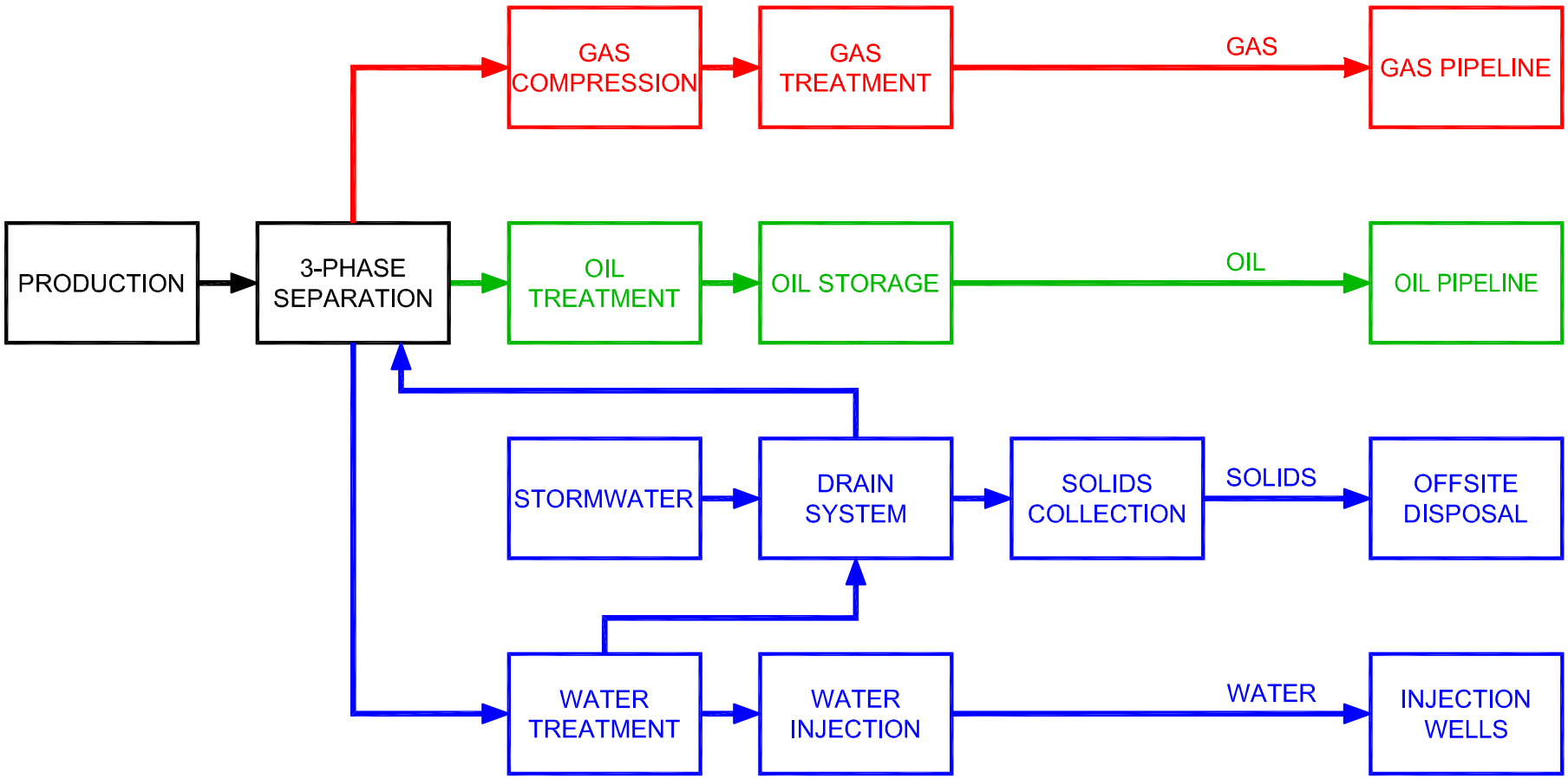


Source: E&B Natural Resources Management Corp.

E&B Natural Resources
www.EBNR-Hermosa.com

E&B Oil Development Project

Figure 17
Phase 2: Drilling and Testing
General Block Flow Diagram



Source: E&B Natural Resources Management Corp.

E&B Natural Resources
www.EBNR-Hermosa.com

E&B Oil Development Project

Figure 28

Phase 4: Development and Operations General Block Flow Diagram

EXHIBIT M

EQUIPMENT LISTS

8700-000-E&B Hermosa Beach Development Equipment List
Test Phase

EQUIPMENT LIST		
Location Site:		
Date	7/30/12	
By	WEA	
Chk		
Rev.	A	

NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
1	MULTIPHASE METER			WELL TEST METER	1	Off Site		Required Metering of Gas, Oil, and Water from Each Well	
2	FREE WATER KNOCKOUT	T-401	8'-6" W x 42'-11 x 10'-8"H Capacity: 500 BBL,	VESSEL	1	O/W Separation	Baker Tank	Separate gas, oil, and water	
3	PRODUCED OIL PUMP	P-401A/B	Capacity: 23.3 GPM TDH: 185 FT	PUMP	2	O/W Separation		Transfer Produced Oil from FWKO to Shipping Tanks	2 BHP
4	PRODUCED WATER PUMP	P-402A/B	Capacity: 46.6 GPM TDH: 115 FT	PUMP	2	O/W Separation		Transfer Produced Water from FWKO to Gas Flotation	22.6 BHP
5	INDUCED GAS FLOTATION UNIT	V-102	5'-0" DIA x 10'-0" H Nominal Size: 1600 BWPD	VESSEL	1	O/W Separation	Trailer Mounted	Separate oil from water	
6	LOADING PUMPS	P-403A/B	Capacity: 200 GPM TDH: 240 FT	PUMP	2	Tank Farm		Transfer Oil from Shipping Tanks to Loading Rack	30 BHP
7	SHIPPING TANKS	T-402A/B/C/D/E/F	8'-6" W x 42'-11 x 10'-8"H Capacity: 500 BBL,	TANK	6	Tank Farm	Baker Tank	Store Produced Oil	
8	WATER BOOSTER PUMPS	P-405		PUMP	2	O/W Separation	INCLUDED IN IGF SKID PACKAGE	• Motive Water to Eductor. • Transfer Water to Filter	TBD

8700-000-E&B Hermosa Beach Development Equipment List
Test Phase

EQUIPMENT LIST		
Location Site:		
Date	7/30/12	
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NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
9	MEDIA FILTER	V-403	Nominal capacity: 1600 BWPD	VESSEL	1	O/W Separation		Final Polishing, Oil Removal from Water	
10	WATER SURGE TANK	T-404	8'-6" W x 42'-11 x 10'-8"H Capacity: 500 BBL,	TANK	1	Tank Farm		Surge Capacity for Injection Water	
11	WATER INJECTION PUMPS	P-406A/B/C	Capacity: 46.6 GPM TDH: 2,556 FT	PUMP	3	O/W Separation	THREE 50% PUMPS; TWO OPERATING, ONE SPARE	Pump Produced Water to Injection Wells	43 BHP
12	DRAIN SUMP	T-405	8'-6" W x 42'-11 x 10'-8"H Capacity: 500 BBL,	VESSEL	1	Off Site	Baker Tank Install Below Grade	Collection of Waste Streams and Storm Water	
13	DRAIN PUMP	P-407	Capacity: 0.5 GPM (Avg) TDH: 118 FT	PUMP	2	Off Site		Pump Drain Tank to FWKO	0.1 BHP
14	VRU COMPRESSOR	C-401A/B/C	Capacity: 187 ACFM at suction.	COMPRESSOR	3	Tank Farm	THREE 50% MACHINES; TWO OPERATING, ONE SPARE. TO BE SUPPLIED AS ONE SKID UNIT (TYP	Collection of Tank Vapors	30 BHP
15	CONDENSATE PUMPS	P-450A/B	Capacity: 0.02 GPM TDH: 232 FT	PUMP	2	Tank Farm		Transfer Condensate from Compressor Vessels to Drain Tank	0.04 BHP
16	VRU SUCTION DRUM	V-404	TBD	VESSEL	1	Tank Farm		Suction Scrubber for VRU	

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Test Phase

EQUIPMENT LIST		
Location Site:		
Date	7/30/12	
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Chk		
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NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
17	VRU DISCH COOLER	E-453	Duty: 0.0253 MMBTU/H	EXCHANGER	1	Tank Farm	SKID UNIT (TVR SKID)	Cool and Condense Stream from VRU Compressor	Fan: TBD
18	VRU DISCHARGE DRUM	V-453	TBD	VESSEL	1	Tank Farm		Separate Liquid and Vapor from VRU Discharge	
19	GAS COMBUSTOR	H-401	Duty: 10.79 MMBTU/H		1	Tank Farm		Emergency Flare	

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Production Phase

EQUIPMENT LIST	
Location Site:	
Date	7/30/12
By	WEA
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NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
1	FREE WATER KNOCKOUT	V-101	7'-0" DIA x 35'-0" S-S Capacity: 24,000 BFPD, Heat Conservation Insulation	VESSEL	1	O/W Separation		Separate gas, oil, and water	
2	HEATER TREATER	V-105	TBD	VESSEL	1	O/W Separation		Separate gas, oil, and water	1.131 MMBTU/H ABSORBED
3	PRODUCED OIL PUMP	P-120A/B	Capacity: 240 GPM TDH: 73.36FT	PUMP	2	O/W Separation		Transfer Produced Oil from Heater Treater to Shipping Tanks	6.91 BHP
4	PRODUCED WATER PUMP	P-121A/B	Capacity: 471 GPM TDH: 115.30 FT	PUMP	2	O/W Separation		Transfer Produced Water from Clarifier to Gas Flotation	22.7 BHP
5	INDUCED GAS FLOTATION UNIT	V-102	7'-0" DIA x 11'-0" H Nominal Size: Heat Conservation Insulation Can treat 16,000 bopd	VESSEL	1	O/W Separation		Separate oil from water	
6	SHIPPING PUMPS	P-122A/B	Capacity: 476 GPM TDH: 494 FT	PUMP	2	Tank Farm		Transfer Oil from Shipping Tanks to Pipeline	79.4 BHP
7	SHIPPING TANKS	T-140A/B	40'-0" Diam X 16'-0" H Nominal size: 2,900 BBL Heat Conservation Insulation	TANK	2	Tank Farm		Store Produced Oil	
8	WATER BOOSTER PUMPS	P-123	Capacity: 471 GPM TDH: 115 FT	PUMP	2	O/W Separation	INCLUDED IN IGF SKID PACKAGE	• Motive Water to Eductor. • Transfer Water to Filter	22.6 BHP
9	CLARIFIER	T-141	25'-0" Diam x 16'-0" H Nominal Cap: 1,120 BBL	TANK	1	O/W Separation		Separate oil from water	

8700-000-E&B Hermosa Beach Development Equipment List
Production Phase

EQUIPMENT LIST		
Location Site:		
Date	7/30/12	
By	WEA	
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NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
10	LACT UNIT		16,000 BOPD	METER	1	O/W Separation		Custody Transfer of Oil to Customer	
11	MULTI-PHASE METERING UNIT (WELL TEST)		24,000 BFPD Plus 2.5 MMSCFD of Associated Gas.	METER	2	Off Site	15 WELLS MANIFOLDED TO EACH TEST UNIT.	Required Metering of Gas, Oil, and Water from Each Well	
12	MEDIA FILTER	V-103	Nominal capacity: 16,000 BWPD Heat Conservation Insulation	VESSEL	1	O/W Separation		Final Polishing, Oil Removal from Water	
13	WATER SURGE TANK	T-142	40'-0" Dia x 16'-0" H Capacity: 2,900 BWPD	TANK	1	Tank Farm		Surge Capacity for Injection Water	
14	WATER SURGE TANK	T-143	25'-0" Dia x 16'-0" H Capacity: 1,120 BWPD	TANK	1	Tank Farm		Surge Capacity for Injection Water	
15	WATER INJECTION PUMPS	P-124A/B/C	Capacity: 469 GPM TDH: 2,556 FT	PUMP	3	O/W Separation	THREE 50% PUMPS; TWO OPERATING, ONE SPARE	Pump Produced Water to Injection Wells	431 BHP
16	DRAIN SUMP	V-104A/B	Horizontal vessel, below grade 10'-0" Diam x 30'-0" L	VESSEL	2	Off Site		Collection of Waste Streams and Storm Water	
17	DRAIN PUMPS	P-125A/B	Capacity: 2.25 GPM (Avg) TDH: 118 FT	PUMP	2	Off Site		Pump Drain Tank to FWKO	0.11 BHP
18	VRU COMPRESSOR	C-401A/B/C	Capacity: 1,041 ACFM at suction. 16.46 BHP	COMPRESSOR	3	Tank Farm		Collection of Tank Vapors	16.46 BHP

8700-000-E&B Hermosa Beach Development Equipment List
Production Phase

EQUIPMENT LIST		
Location Site:		
Date	7/30/12	
By	WEA	
Chk		
Rev.	A	

NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
19	CONDENSATE PUMPS	P-450A/B	Capacity: 0.4 GPM TDH: 232 FT	PUMP	2	Tank Farm	THREE 50% MACHINES; TWO OPERATING, ONE SPARE. TO BE SUPPLIED AS ONE SKID UNIT (TVR SKID)	Transfer Condensate from Compressor Vessels to Drain Tank	0.04 BHP
20	VRU SUCTION DRUM	V-450	2'-0" Dia x 8'-0" H	VESSEL	1	Tank Farm		Suction Scrubber for VRU	
21	VRU DISCH COOLER	E-453	Duty: 0.0655 MMBTU/H	EXCHANGER	1	Tank Farm		Cool and Condense Stream from VRU Compressor	Fan: TBD
22	VRU DISCHARGE DRUM	V-453	1'-6" Dia x 6'-0" H	VESSEL	1	Tank Farm		Separate Liquid and Vapor from VRU Discharge	

8700-000-E&B Hermosa Beach Development Equipment List
Production Phase

EQUIPMENT LIST		
Location Site:		
Date	7/30/12	
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NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
23	1ST STAGE SUCTION DRUM	V-901A	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant	TO BE SUPPLIED AS ONE SKID UNIT	Suction Scrubber for 1st Stage of Main Compressor	
24	1ST STAGE COMPRESSOR	C-901A	Capacity: 195.6 ACFM at suction.	COMPRESSOR	1	Gas Plant		Compress Produced Gases to 155 PSIG.	61.5 BHP FOR ONE 50% MACHINE
25	1ST STAGE DISCHARGE COOLER	E-901A	0.02369 MMBTU/H	EXCHANGER	1	Gas Plant		Cool and Condense Stream from 1st Stage Compressor	Fan: TBD
26	1ST STAGE DISCHARGE DRUM	V-902A	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant		Separate Liquid and Vapor from 1st Stage Discharge	
27	2ND STAGE SUCTION DRUM	V-903A	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant		Suction Scrubber for 2nd Stage of Main Compressor	
28	2ND STAGE COMPRESSOR	C-902A	Capacity: 82.4 ACFM at suction.	COMPRESSOR	1	Gas Plant		Compress Produced Gases to 475 PSIG.	73.5 BHP for one 50% machine
29	2ND STAGE DISCHARGE COOLER	E-902A	0.243 MMBTU/H	EXCHANGER	1	Gas Plant		Cool and Condense Stream from 2nd Stage Compressor	Fan: TBD
30	2ND STAGE DISCHARGE DRUM	V-904A	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant		Separate Liquid and Vapor from 2nd Stage Discharge	

8700-000-E&B Hermosa Beach Development Equipment List
Production Phase

EQUIPMENT LIST		
Location Site:		
Date	7/30/12	
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Chk		
Rev.	A	

NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
31	1ST STAGE SUCTION DRUM	V-901B	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant	TO BE SUPPLIED AS ONE SKID UNIT	Suction Scrubber for 1st Stage of Main Compressor	
32	1ST STAGE COMPRESSOR	C-901B	Capacity: 195.6 ACFM at suction.	COMPRESSOR	1	Gas Plant		Compress Produced Gases to 155 PSIG.	61.5 BHP FOR ONE 50% MACHINE
33	1ST STAGE DISCHARGE COOLER	E-901B	0.02369 MMBTU/H	EXCHANGER	1	Gas Plant		Cool and Condense Stream from 1st Stage Compressor	Fan: TBD
34	1ST STAGE DISCHARGE DRUM	V-902B	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant		Separate Liquid and Vapor from 1st Stage Discharge	
35	2ND STAGE SUCTION DRUM	V-903B	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant		Suction Scrubber for 2nd Stage of Main Compressor	
36	2ND STAGE COMPRESSOR	C-902B	Capacity: 82.4 ACFM at suction.	COMPRESSOR	1	Gas Plant		Compress Produced Gases to 475 PSIG.	73.5 BHP for one 50% machine
37	2ND STAGE DISCHARGE COOLER	E-902B	0.243 MMBTU/H	EXCHANGER	1	Gas Plant		Cool and Condense Stream from 2nd Stage Compressor	Fan: TBD
38	2ND STAGE DISCHARGE DRUM	V-904B	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant		Separate Liquid and Vapor from 2nd Stage Discharge	

8700-000-E&B Hermosa Beach Development Equipment List
Production Phase

EQUIPMENT LIST		
Location Site:		
Date	7/30/12	
By	WEA	
Chk		
Rev.	A	

NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
39	1ST STAGE SUCTION DRUM	V-901C	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant	TO BE SUPPLIED AS ONE SKID UNIT	Suction Scrubber for 1st Stage of Main Compressor	
40	1ST STAGE COMPRESSOR	C-901C	Capacity: 195.6 ACFM at suction.	COMPRESSOR	1	Gas Plant		Compress Produced Gases to 155 PSIG.	61.5 BHP FOR ONE 50% MACHINE
41	1ST STAGE DISCHARGE COOLER	E-901C	0.02369 MMBTU/H	EXCHANGER	1	Gas Plant		Cool and Condense Stream from 1st Stage Compressor	Fan: TBD
42	1ST STAGE DISCHARGE DRUM	V-902C	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant		Separate Liquid and Vapor from 1st Stage Discharge	
43	2ND STAGE SUCTION DRUM	V-903C	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant		Suction Scrubber for 2nd Stage of Main Compressor	
44	2ND STAGE COMPRESSOR	C-902C	Capacity: 82.4 ACFM at suction.	COMPRESSOR	1	Gas Plant		Compress Produced Gases to 475 PSIG.	73.5 BHP for one 50% machine
45	2ND STAGE DISCHARGE COOLER	E-902C	0.243 MMBTU/H	EXCHANGER	1	Gas Plant		Cool and Condense Stream from 2nd Stage Compressor	Fan: TBD
46	2ND STAGE DISCHARGE DRUM	V-904C	1'-6" Dia x 6'-0" H	VESSEL	1	Gas Plant		Separate Liquid and Vapor from 2nd Stage Discharge	
47	SULFASCRUB VESSELS	V-923A/B	10'-0" Diam x 16'-0" H	VESSEL	2	Gas Plant		H2S Removal	

8700-000-E&B Hermosa Beach Development Equipment List
Production Phase

EQUIPMENT LIST		
Location Site:		
Date	7/30/12	
By	WEA	
Chk		
Rev.	A	

NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
48	ABSORBER	T-921	2'-0" Dia x 36'-0"H 21 ft of packing	TOWER	1	Gas Plant	ALL PART OF THE AMINE SKID	CO2 Removal	
49	AMINE REGENERATOR	T-922	1'-4" Dia x 51'-0" H 21 trays	TOWER	1	Gas Plant		Regenerate Amine (DEA)	
50	AMINE COOLER	E-921	Duty: 0.869 MMBTU/H	EXCHANGER	1	Gas Plant		Cool the Lean Amine	
51	DEA CHARGE PUMP	P-921A/B	Cap: 27 GPM TDH: 354 FT	PUMP	2	Gas Plant		Pump Lean Amine to Absorber	2.4 BHP
52	AMINE FLASH TANK	V-921	1'-8" Dia x 7'-0" L Horizontal Vessel	VESSEL	1	Gas Plant		Separate Gas from Rich Amine	
53	AMINE EXCHANGER	E-922	Duty: 0.478 MMBTU/H	EXCHANGER	1	Gas Plant		Preheat Rich Amine with Lean Amine	
54	DEA REBOILER	H-921	1.0972 MMBTU/H	EXCHANGER	1	Gas Plant		Provide Heat for Amine Regenerator	1.0972 MMBTU/H
55	REGENERATOR CONDENSER	E-923	DUTY: 0.1565MMBTU/H	EXCHANGER	1	Gas Plant		Provide Reflux for Amine Regenerator	Fan:TBD
56	REGENERATOR ACCUMULATOR	V-922	1'-2" Dia x 5'-0"	VESSEL	1	Gas Plant		Separate Gas/Liquid in Regenerator Overhead	

8700-000-E&B Hermosa Beach Development Equipment List
Production Phase

EQUIPMENT LIST		
Location Site:		
Date	7/30/12	
By	WEA	
Chk		
Rev.	A	

NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
57	REGENERATOR REFLUX PUMP	P-922A/B	TBD	PUMP	2	Gas Plant		Pump Reflux to Regenerator	

8700-000-E&B Hermosa Beach Development Equipment List
Production Phase

EQUIPMENT LIST	
Location Site:	
Date	7/30/12
By	WEA
Chk	
Rev.	A

NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
58	GAS-GAS EXCHANGER	E-931		EXCHANGER	1	Gas Plant	LTS SKID	1st Chilling Step	
59	CHILLER	E-932		EXCHANGER	1	Gas Plant		Chill Gas to Final Low Temperature	
60	COLD SEPARATOR	V-931		VESSEL	1	Gas Plant		Separate Gas Product from Liquid	
61	GLYCOL COIL	E-933	Duty: 0.0005 MMBTU/H	EXCHANGER	1	Gas Plant		Rich/Lean Glycol Exchanger	
62	3-PHASE SEPARATOR	V-932	2'-0" Dia x 8'-0" H	VESSEL	1	Gas Plant		Separate NGLs from Rich Glycol	
63	GLYCOL EXCHANGER	E-934	Duty: 0.004339 MMBTU/HR	EXCHANGER	1	Gas Plant		Preheat Rich Glycol with Lean Glycol	
64	GLYCOL PUMPS	P-931A/B	Capacity: 0.05 GPM	PUMP	2	Gas Plant		Pump Lean glycol to Sprays	0.0134 BHP
65	GLYCOL REGENERATOR	H-931		REBOILER	1	Gas Plant		Boil Water Out of Rich Glycol	0.0081 MMBTU/H
66	REGENERATOR GAS COOLER	E-935	Duty: 0.0077MMBTU/H	EXCHANGER	1	Gas Plant		Cool, Condense Regenerator Overhead Gas	

8700-000-E&B Hermosa Beach Development Equipment List
Production Phase

EQUIPMENT LIST		
Location Site:		
Date	7/30/12	
By	WEA	
Chk		
Rev.	A	

NO.	NAME	TAG NUMBER	CAPACITY AND SIZE	TYPE OF EQUIPMENT	QTY	LOCATION	REMARKS	FUNCTION	FUEL / ELECT.
67	REGENERATOR GAS SEPARATOR	V-933	1'-6" Dia x 7'-0" H	VESSEL	1	Gas Plant		Separate Vapor/Liquid from Regenerator Gas Cooler	
68	GAS COMBUSTOR	H-401	Duty: 105.2 MMBTU/H		1	Tank Farm		Emergency Flare	

EXHIBIT N

STATIONARY SOURCE EMISSIONS

Phase 2 - Drilling and Testing

Description	Capacity / Size	Equipment Type	Qty	Hourly Fuel Use, MMBtu	Annual Fuel Use, Throughput, or Count	Fuel / Units	Max Hours per Day	Annual Days	Emission Factors, lb/unit						Emissions, lb/day Maximum						Emissions, lb/yr Maximum					
									NOx	VOC	CO	SOx	PM10	PM2.5	NOx	VOC	CO	SOx	PM10	PM2.5	NOx	VOC	CO	SOx	PM10	PM2.5
Tank Emissions																										
Free Water Knockout, T-401	500 bbl	Tank	1		876,000	bbls	24	365	0	(4)	0	0	0	0		0.0						2.3				
Shipping Tanks, T-402 A/B/C/D/E/F	500 bbl	Tank	6		292,000	bbls	24	365	0	(4)	0	0	0	0		1.0						347.0				
Drain Sump, T-405	500 bbl	Tank	1		104	bbls	24	365	0	(4)	0	0	0	0		0.0						3.2				
Fugitive Component Emissions					lb/source/yr																					
Valves			129				24	365	0	6.25	0.00	0.00	0.00	0.00		0.4						807				
Pump Seals			22				24	365	0	0.10	0.00	0.00	0.00	0.00		0.0						2				
Others			23				24	365	0	116.8	0.00	0.00	0.00	0.00		1.4						2,687				
Connectors			358				24	365	0	1.31	0.00	0.00	0.00	0.00		0.2						468				
Flanges			271				24	365	0	2.10	0.00	0.00	0.00	0.00		0.5						569				
Compressors			2				24	365	0	0.00	0.00	0.00	0.00	0.00		1.4						0				
Combustion Emissions					lb/MMBtu																					
Gas Combustor, H-401	10.79 MMBtu/hr	Combustion	1	10.79	94,520	MMBtu	24	365	0.018	0.007	0.037	0.00285	0.0076	0.0076	4.7	1.8	9.6	0.7	2.0	2.0	1,701	662	3,497	269	718	718
Total, lbs															4.7	6.7	9.6	0.7	2.0	2.0	1,701	5,546	3,497	269	718	718
Total, tons																					0.9	2.8	1.7	0.1	0.4	0.4
Total, Metric Tonnes (MT)																										

Notes

1. Emissions from tanks and vessels will be controlled by combustion, therefore emissions of GHG are included in the Gas Combustor emissions.
2. GHG emissions from fugitive components is estimate using 40 CFR Part 98, Subpart W.
3. Vapor recovery system is assumed to have a control efficie 99
4. Emissions calculated using EPA Tanks4.09d with the control efficiency of the vapor recovery system applied..
5. Emissions of SOx from the combuster based on 1 gr total sulfur per 100 dscf inlet gas. (Equivalent to 17 ppmv)
6. Emissions calculated using CAPCOA Document, "*California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities* ", Table IV-2c, February 1999
7. Gas combuster emission factors for NOx, ROG, and CO from manufacturer. SOx emission factor based on total sulfur concentration of 1 gr/100 dscf. PM10/PM2.5 emission factor from EPA AP42, Chapter 1.4 Natural Gas Combustion

Phase 4 - Development and Operations

Description	Capacity / Size	Equipment Type	Qty	Use	Hourly Fuel Use, MMBtu	Annual Fuel Use, Throughput, or Count	Fuel / Units	Max Hours per Day	Annual Days	Emission Factors, lb/unit						Emissions, lb/day Maximum						Emissions, lb/yr Maximum					
										NOx	VOC	CO	SOx	PM10	PM2.5	NOx	VOC	CO	SOx	PM10	PM2.5	NOx	VOC	CO	SOx	PM10	PM2.5
Tank Emissions																											
Water Surge Tank	2,900 bbl	Tank	1	Producted Water		813,585	bbls	24	365	0	(4)	0	0	0	0		0.3						99.0				
Water Surge Tank	1,120 bbl	Tank	1	Produced Water		2,106,415	bbls	24	365	0	(4)	0	0	0	0		0.0						2.3				
Shipping Tanks	2,900 bbl	Tank	2	Crude Oil Storage		2,920,000	bbls	24	365	0	(4)	0	0	0	0		4.6						1,672.4				
Clarifier	1,120 bbl	Tank	1	O/W Separation		8,760,000	bbls	24	365	0	(4)	0	0	0	0		0.9						322.3				
Drain Sump	420 bbl	Vessel	2	Drain Collection		28,157	bbls	24	365	0	(4)	0	0	0	0		0.0						3.2				
Fugitive Component Emissions										lb/source/yr																	
Valves			762				component	24	365	0	0.5	0	0	0	0		1.0						381				
Pump Seals			52				component	24	365	0	5.1	0	0	0	0		0.7						265				
Others			263				component	24	365	0	1.9	0	0	0	0		1.4						500				
Connectors			1775				component	24	365	0	0.2	0	0	0	0		1.0						355				
Flanges			1178				component	24	365	0	0.5	0	0	0	0		1.6						589				
Compressors			9				component	24	365	0	1.9	0	0	0	0		0.0						17				
Combustion Emissions										lb/MMBtu																	
Microturbine	2.28 MMBtu/hr	Combustion	5	O/W Separation	11.4	99,864	MMBtu	24	365	0.024	0.0055	0.037	0.0029	0.0035	0.0035	6.6	1.5	10.1	0.8	1.0	1.0	2,397	549	3,695	285	350	350
Gas Combustor	105.2 MMBtu/hr	Combustion	1	Vapor Destruction	105.2	5,676	MMBtu	6.5	8.3	0.066	0.007	0.035	0.0029	0.0075	0.0073	45.1	4.8	23.9	1.9	5.1	5.0	374.6	39.7	198.6	16.2	42.6	41.4
Total, lbs																51.7	17.8	34.1	2.7	6.1	5.9	2,771	4,795	3,894	301	392	391
Total, tons (short)																						1.4	2.4	1.9	0.2	0.2	0.2
Total, Metric Tonnes (MT)																											

Notes

1. Emissions from tanks and vessels will be controlled by combustion, therefore emissions of GHG are included in the Gas Combustor emissions.
2. GHG emissions from fugitive components is estimate using 40 CFR Part 98, Subpart W.
3. Vapor recovery system is assumed to have a control efficiency of 99 %.
4. Emissions calculated using EPA Tanks4.09d with the control efficiency of the vapor recovery system applied..
5. Emissions of SOx from the combuster based on 1 gr total sulfur per 100 dscf inlet gas. (Equivalent to 17 ppmv)
6. Fugitive Component Emissions calculated using CAPCOA document, "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities", Table IV-2c. Oil and Gas Production, Screening Value Ranges Emission Factors
7. Combustor is Emergency use only, limited to 200 hours per year, 683.8 MMBtu/day for nonemergency use.
8. Combuster emission factors from Montebello Oilfield Permit
9. Microturbine emission factors from Manufacturer except PM10 and PM2.5, which is proposed by the applicant.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Hermosa Beach Drain Tank
City:	Long Beach
State:	California
Company:	E & B Resources
Type of Tank:	Vertical Fixed Roof Tank
Description:	Baker Tank used for Drain Tank

Tank Dimensions

Shell Height (ft):		10.70
Diameter (ft):		18.28
Liquid Height (ft) :		10.00
Avg. Liquid Height (ft):		5.00
Volume (gallons):		21,006.77
Turnovers:		0.50
Net Throughput(gal/yr):		10,503.38
Is Tank Heated (y/n):	Y	

Paint Characteristics

Shell Color/Shade:	Red/Primer
Shell Condition	Good
Roof Color/Shade:	Red/Primer
Roof Condition:	Good

Roof Characteristics

Type:	Cone	
Height (ft)		0.00
Slope (ft/ft) (Cone Roof)		0.06

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Long Beach, California (Avg Atmospheric Pressure = 14.7 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Hermosa Beach Drain Tank - Vertical Fixed Roof Tank
Long Beach, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil 2.5 RVP	Jan	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Feb	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Mar	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Apr	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	May	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Jun	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Jul	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Aug	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Sep	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Oct	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Nov	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Dec	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Hermosa Beach Drain Tank - Vertical Fixed Roof Tank
Long Beach, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):	22.2981	20.1402	22.2981	21.5788	22.2981	21.5788	22.2981	22.2981	21.5788	22.2981	21.5788	22.2981
Vapor Space Volume (cu ft):	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245
Vapor Density (lb/cu ft):	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487
Vapor Space Expansion Factor:	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286
Vented Vapor Saturation Factor:	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245
Tank Diameter (ft):	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800
Vapor Space Outage (ft):	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904
Tank Shell Height (ft):	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000
Average Liquid Height (ft):	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000
Roof Outage (ft):	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904
Roof Outage (Cone Roof)												
Roof Outage (ft):	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904
Roof Height (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Slope (ft/ft):	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625
Shell Radius (ft):	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400
Vapor Density												
Vapor Density (lb/cu ft):	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Daily Avg. Liquid Surface Temp. (deg. R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Daily Average Ambient Temp. (deg. F):	55.8500	57.3000	58.5000	61.6500	64.8000	68.4000	73.0500	74.4000	72.4000	68.1000	61.2500	56.0000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Tank Paint Solar Absorptance (Shell):	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Tank Paint Solar Absorptance (Roof):	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Daily Total Solar Insulation Factor (Btu/sqft day):	886.7697	1,146.6138	1,501.0044	1,901.7164	2,039.4116	2,128.5644	2,302.7457	2,117.1427	1,702.1536	1,320.4777	993.3724	819.8257
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286
Daily Vapor Temperature Range (deg. R):	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
Daily Vapor Pressure Range (psia):	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107
Breather Vent Press. Setting Range(psia):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761
Daily Avg. Liquid Surface Temp. (deg R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Daily Min. Liquid Surface Temp. (deg R):	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700
Daily Max. Liquid Surface Temp. (deg R):	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700
Daily Ambient Temp. Range (deg. R):	21.9000	20.8000	19.0000	19.7000	17.0000	17.2000	19.3000	19.2000	19.4000	20.6000	21.7000	22.0000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700

Vapor Space Outage (ft):	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904
Working Losses (lb):	4.9782	4.9782	4.9782	4.9782	4.9782	4.9782	4.9782	4.9782	4.9782	4.9782	4.9782	4.9782
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Net Throughput (gal/mo.):	875.2820	875.2820	875.2820	875.2820	875.2820	875.2820	875.2820	875.2820	875.2820	875.2820	875.2820	875.2820
Annual Turnovers:	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000	0.5000
Turnover Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (gal):	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680
Maximum Liquid Height (ft):	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000
Tank Diameter (ft):	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800
Working Loss Product Factor:	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Total Losses (lb):	27.2763	25.1184	27.2763	26.5570	27.2763	26.5570	27.2763	27.2763	26.5570	27.2763	26.5570	27.2763

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Hermosa Beach Drain Tank - Vertical Fixed Roof Tank
Long Beach, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil 2.5 RVP	59.74	262.54	322.28

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Hermosa Beach FWKO
City:	Long Beach
State:	California
Company:	E & B Resources
Type of Tank:	Vertical Fixed Roof Tank
Description:	Baker Tank used for FWKO

Tank Dimensions

Shell Height (ft):		10.70
Diameter (ft):		18.28
Liquid Height (ft) :		10.00
Avg. Liquid Height (ft):		9.70
Volume (gallons):		21,006.77
Turnovers:		1.00
Net Throughput(gal/yr):		21,006.77
Is Tank Heated (y/n):	Y	

Paint Characteristics

Shell Color/Shade:	Red/Primer
Shell Condition	Good
Roof Color/Shade:	Red/Primer
Roof Condition:	Good

Roof Characteristics

Type:	Cone	
Height (ft)		0.00
Slope (ft/ft) (Cone Roof)		0.06

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Long Beach, California (Avg Atmospheric Pressure = 14.7 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Hermosa Beach FWKO - Vertical Fixed Roof Tank
Long Beach, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil 2.5 RVP	Jan	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Feb	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Mar	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Apr	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	May	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Jun	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Jul	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Aug	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Sep	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Oct	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Nov	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Dec	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Hermosa Beach FWKO - Vertical Fixed Roof Tank
Long Beach, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):	9.6069	8.6772	9.6069	9.2970	9.6069	9.2970	9.6069	9.6069	9.2970	9.6069	9.2970	9.6069
Vapor Space Volume (cu ft):	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218
Vapor Density (lb/cu ft):	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487
Vapor Space Expansion Factor:	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286
Vented Vapor Saturation Factor:	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218	312.4218
Tank Diameter (ft):	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800
Vapor Space Outage (ft):	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904
Tank Shell Height (ft):	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000
Average Liquid Height (ft):	9.7000	9.7000	9.7000	9.7000	9.7000	9.7000	9.7000	9.7000	9.7000	9.7000	9.7000	9.7000
Roof Outage (ft):	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904
Roof Outage (Cone Roof)												
Roof Outage (ft):	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904
Roof Height (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Slope (ft/ft):	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625
Shell Radius (ft):	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400
Vapor Density												
Vapor Density (lb/cu ft):	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Daily Avg. Liquid Surface Temp. (deg. R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Daily Average Ambient Temp. (deg. F):	55.8500	57.3000	58.5000	61.6500	64.8000	68.4000	73.0500	74.4000	72.4000	68.1000	61.2500	56.0000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Tank Paint Solar Absorptance (Shell):	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Tank Paint Solar Absorptance (Roof):	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Daily Total Solar Insulation Factor (Btu/sqft day):	886.7697	1,146.6138	1,501.0044	1,901.7164	2,039.4116	2,128.5644	2,302.7457	2,117.1427	1,702.1536	1,320.4777	993.3724	819.8257
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286
Daily Vapor Temperature Range (deg. R):	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
Daily Vapor Pressure Range (psia):	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107
Breather Vent Press. Setting Range(psia):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761
Daily Avg. Liquid Surface Temp. (deg R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Daily Min. Liquid Surface Temp. (deg R):	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700
Daily Max. Liquid Surface Temp. (deg R):	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700
Daily Ambient Temp. Range (deg. R):	21.9000	20.8000	19.0000	19.7000	17.0000	17.2000	19.3000	19.2000	19.4000	20.6000	21.7000	22.0000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133	0.7133
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700

Vapor Space Outage (ft):	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904	1.1904
Working Losses (lb):	9.9564	9.9564	9.9564	9.9564	9.9564	9.9564	9.9564	9.9564	9.9564	9.9564	9.9564	9.9564
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Net Throughput (gal/mo.):	1,750.5640	1,750.5640	1,750.5640	1,750.5640	1,750.5640	1,750.5640	1,750.5640	1,750.5640	1,750.5640	1,750.5640	1,750.5640	1,750.5640
Annual Turnovers:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Turnover Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (gal):	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680
Maximum Liquid Height (ft):	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000
Tank Diameter (ft):	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800
Working Loss Product Factor:	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Total Losses (lb):	19.5633	18.6336	19.5633	19.2534	19.5633	19.2534	19.5633	19.5633	19.2534	19.5633	19.2534	19.5633

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Hermosa Beach Shipping Tank
City:	Long Beach
State:	California
Company:	E & B Resources
Type of Tank:	Vertical Fixed Roof Tank
Description:	Baker Tank used for FWKO

Tank Dimensions

Shell Height (ft):		10.70
Diameter (ft):		18.28
Liquid Height (ft) :		10.00
Avg. Liquid Height (ft):		5.00
Volume (gallons):		21,006.77
Turnovers:		97.30
Net Throughput(gal/yr):		2,043,958.52
Is Tank Heated (y/n):	Y	

Paint Characteristics

Shell Color/Shade:	Red/Primer
Shell Condition	Good
Roof Color/Shade:	Red/Primer
Roof Condition:	Good

Roof Characteristics

Type:	Cone	
Height (ft)		0.00
Slope (ft/ft) (Cone Roof)		0.06

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Long Beach, California (Avg Atmospheric Pressure = 14.7 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Hermosa Beach Shipping Tank - Vertical Fixed Roof Tank
Long Beach, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil 2.5 RVP	Jan	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Feb	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Mar	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Apr	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	May	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Jun	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Jul	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Aug	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Sep	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Oct	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Nov	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Dec	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Hermosa Beach Shipping Tank - Vertical Fixed Roof Tank
Long Beach, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):	22.2981	20.1402	22.2981	21.5788	22.2981	21.5788	22.2981	22.2981	21.5788	22.2981	21.5788	22.2981
Vapor Space Volume (cu ft):	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245
Vapor Density (lb/cu ft):	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487
Vapor Space Expansion Factor:	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286
Vented Vapor Saturation Factor:	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245	1,545.9245
Tank Diameter (ft):	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800
Vapor Space Outage (ft):	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904
Tank Shell Height (ft):	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000	10.7000
Average Liquid Height (ft):	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000
Roof Outage (ft):	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904
Roof Outage (Cone Roof)												
Roof Outage (ft):	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904	0.1904
Roof Height (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Slope (ft/ft):	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625
Shell Radius (ft):	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400	9.1400
Vapor Density												
Vapor Density (lb/cu ft):	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Daily Avg. Liquid Surface Temp. (deg. R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Daily Average Ambient Temp. (deg. F):	55.8500	57.3000	58.5000	61.6500	64.8000	68.4000	73.0500	74.4000	72.4000	68.1000	61.2500	56.0000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Tank Paint Solar Absorptance (Shell):	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Tank Paint Solar Absorptance (Roof):	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Daily Total Solar Insulation Factor (Btu/sqft day):	886.7697	1,146.6138	1,501.0044	1,901.7164	2,039.4116	2,128.5644	2,302.7457	2,117.1427	1,702.1536	1,320.4777	993.3724	819.8257
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286
Daily Vapor Temperature Range (deg. R):	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
Daily Vapor Pressure Range (psia):	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107
Breather Vent Press. Setting Range(psia):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761
Daily Avg. Liquid Surface Temp. (deg R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Daily Min. Liquid Surface Temp. (deg R):	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700
Daily Max. Liquid Surface Temp. (deg R):	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700
Daily Ambient Temp. Range (deg. R):	21.9000	20.8000	19.0000	19.7000	17.0000	17.2000	19.3000	19.2000	19.4000	20.6000	21.7000	22.0000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346	0.3346
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700

Vapor Space Outage (ft):	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904	5.8904
Working Losses (lb):	460.1504	460.1504	460.1504	460.1504	460.1504	460.1504	460.1504	460.1504	460.1504	460.1504	460.1504	460.1504
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Net Throughput (gal/mo.):	170,329.8768	170,329.8768	170,329.8768	170,329.8768	170,329.8768	170,329.8768	170,329.8768	170,329.8768	170,329.8768	170,329.8768	170,329.8768	170,329.8768
Annual Turnovers:	97.3000	97.3000	97.3000	97.3000	97.3000	97.3000	97.3000	97.3000	97.3000	97.3000	97.3000	97.3000
Turnover Factor:	0.4750	0.4750	0.4750	0.4750	0.4750	0.4750	0.4750	0.4750	0.4750	0.4750	0.4750	0.4750
Maximum Liquid Volume (gal):	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680	21,006.7680
Maximum Liquid Height (ft):	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000	10.0000
Tank Diameter (ft):	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800	18.2800
Working Loss Product Factor:	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Total Losses (lb):	482.4485	480.2907	482.4485	481.7292	482.4485	481.7292	482.4485	482.4485	481.7292	482.4485	481.7292	482.4485

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Hermosa Beach Shipping Tank - Vertical Fixed Roof Tank
Long Beach, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil 2.5 RVP	5,521.81	262.54	5,784.35

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Hermosa Beach FWKO - Vertical Fixed Roof Tank
Long Beach, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil 2.5 RVP	119.48	113.11	232.59

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Hermosa Beach Final Clarifier Tank
City:	Long Beach
State:	California
Company:	E & B Resources
Type of Tank:	Vertical Fixed Roof Tank
Description:	2900 bbl Shipping Tank

Tank Dimensions

Shell Height (ft):	16.00
Diameter (ft):	40.00
Liquid Height (ft) :	15.00
Avg. Liquid Height (ft):	15.00
Volume (gallons):	141,004.94
Turnovers:	1.00
Net Throughput(gal/yr):	141,004.94
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Aluminum/Specular
Shell Condition	Good
Roof Color/Shade:	Aluminum/Specular
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.06

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meterological Data used in Emissions Calculations: Long Beach, California (Avg Atmospheric Pressure = 14.7 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Hermosa Beach Final Clarifier Tank - Vertical Fixed Roof Tank
Long Beach, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil 2.5 RVP	Jan	64.07	57.71	70.43	65.65	1.2182	1.0545	1.4025	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Feb	65.51	58.63	72.38	65.65	1.2580	1.0772	1.4634	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Mar	67.13	59.61	74.65	65.65	1.3041	1.1014	1.5368	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Apr	69.75	61.01	78.49	65.65	1.3817	1.1371	1.6683	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	May	71.56	62.93	80.19	65.65	1.4374	1.1875	1.7294	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Jun	73.42	64.51	82.32	65.65	1.4966	1.2303	1.8089	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Jul	76.00	66.24	85.76	65.65	1.5822	1.2787	1.9428	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Aug	76.02	66.79	85.26	65.65	1.5829	1.2943	1.9227	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Sep	73.86	65.72	82.00	65.65	1.5111	1.2641	1.7967	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Oct	70.80	63.48	78.11	65.65	1.4137	1.2023	1.6550	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Nov	66.77	60.16	73.39	65.65	1.2939	1.1152	1.4958	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Dec	63.93	57.73	70.13	65.65	1.2144	1.0551	1.3932	50.0000			207.00	Option 4: RVP=2.5

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Hermosa Beach Final Clarifier Tank - Vertical Fixed Roof Tank
Long Beach, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):	38.3351	38.9512	49.3400	59.6586	63.6127	66.6342	80.7355	76.2573	61.2999	52.4690	41.3597	37.1488
Vapor Space Volume (cu ft):	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358
Vapor Density (lb/cu ft):	0.0108	0.0112	0.0115	0.0122	0.0126	0.0131	0.0138	0.0138	0.0132	0.0124	0.0115	0.0108
Vapor Space Expansion Factor:	0.0700	0.0766	0.0851	0.1014	0.1013	0.1061	0.1189	0.1123	0.0968	0.0847	0.0742	0.0680
Vented Vapor Saturation Factor:	0.9162	0.9137	0.9108	0.9060	0.9026	0.8990	0.8938	0.8938	0.8981	0.9040	0.9114	0.9164
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358	1,780.2358
Tank Diameter (ft):	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000
Vapor Space Outage (ft):	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167
Tank Shell Height (ft):	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000
Average Liquid Height (ft):	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000
Roof Outage (ft):	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167
Roof Outage (Cone Roof)												
Roof Outage (ft):	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167
Roof Height (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Slope (ft/ft):	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625
Shell Radius (ft):	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000
Vapor Density												
Vapor Density (lb/cu ft):	0.0108	0.0112	0.0115	0.0122	0.0126	0.0131	0.0138	0.0138	0.0132	0.0124	0.0115	0.0108
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2182	1.2580	1.3041	1.3817	1.4374	1.4966	1.5822	1.5829	1.5111	1.4137	1.2939	1.2144
Daily Avg. Liquid Surface Temp. (deg. R):	523.7392	525.1778	526.7977	529.4183	531.2285	533.0872	535.6698	535.6920	533.5334	530.4655	526.4436	523.5989
Daily Average Ambient Temp. (deg. F):	55.8500	57.3000	58.5000	61.6500	64.8000	68.4000	73.0500	74.4000	72.4000	68.1000	61.2500	56.0000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	525.3183	525.3183	525.3183	525.3183	525.3183	525.3183	525.3183	525.3183	525.3183	525.3183	525.3183	525.3183
Tank Paint Solar Absorptance (Shell):	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900
Tank Paint Solar Absorptance (Roof):	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900
Daily Total Solar Insulation Factor (Btu/sqft day):	886.7697	1,146.6138	1,501.0044	1,901.7164	2,039.4116	2,128.5644	2,302.7457	2,117.1427	1,702.1536	1,320.4777	993.3724	819.8257
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0700	0.0766	0.0851	0.1014	0.1013	0.1061	0.1189	0.1123	0.0968	0.0847	0.0742	0.0680
Daily Vapor Temperature Range (deg. R):	25.4515	27.4970	30.0710	34.9507	34.5104	35.6279	39.0420	36.9432	32.5555	29.2516	26.4716	24.7925
Daily Vapor Pressure Range (psia):	0.3480	0.3863	0.4354	0.5312	0.5419	0.5785	0.6641	0.6284	0.5326	0.4527	0.3806	0.3381
Breather Vent Press. Setting Range(psia):	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2182	1.2580	1.3041	1.3817	1.4374	1.4966	1.5822	1.5829	1.5111	1.4137	1.2939	1.2144
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	1.0545	1.0772	1.1014	1.1371	1.1875	1.2303	1.2787	1.2943	1.2641	1.2023	1.1152	1.0551
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	1.4025	1.4634	1.5368	1.6683	1.7294	1.8089	1.9428	1.9227	1.7967	1.6550	1.4958	1.3932
Daily Avg. Liquid Surface Temp. (deg R):	523.7392	525.1778	526.7977	529.4183	531.2285	533.0872	535.6698	535.6920	533.5334	530.4655	526.4436	523.5989
Daily Min. Liquid Surface Temp. (deg R):	517.3763	518.3035	519.2799	520.6806	522.6009	524.1802	525.9093	526.4562	525.3945	523.1526	519.8257	517.4008
Daily Max. Liquid Surface Temp. (deg R):	530.1021	532.0520	534.3154	538.1559	539.8561	541.9942	545.4303	544.9278	541.6723	537.7784	533.0616	529.7971
Daily Ambient Temp. Range (deg. R):	21.9000	20.8000	19.0000	19.7000	17.0000	17.2000	19.3000	19.2000	19.4000	20.6000	21.7000	22.0000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.9162	0.9137	0.9108	0.9060	0.9026	0.8990	0.8938	0.8938	0.8981	0.9040	0.9114	0.9164
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	1.2182	1.2580	1.3041	1.3817	1.4374	1.4966	1.5822	1.5829	1.5111	1.4137	1.2939	1.2144

Vapor Space Outage (ft):	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167	1.4167
Working Losses (lb):	12.7811	13.1986	13.6823	14.4958	15.0808	15.7017	16.5993	16.6072	15.8539	14.8319	13.5754	12.7410
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.2182	1.2580	1.3041	1.3817	1.4374	1.4966	1.5822	1.5829	1.5111	1.4137	1.2939	1.2144
Net Throughput (gal/mo.):	11,750.4114	11,750.4114	11,750.4114	11,750.4114	11,750.4114	11,750.4114	11,750.4114	11,750.4114	11,750.4114	11,750.4114	11,750.4114	11,750.4114
Annual Turnovers:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Turnover Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Maximum Liquid Volume (gal):	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372
Maximum Liquid Height (ft):	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000
Tank Diameter (ft):	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000
Working Loss Product Factor:	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Total Losses (lb):	51.1162	52.1499	63.0223	74.1544	78.6935	82.3359	97.3349	92.8645	77.1537	67.3009	54.9351	49.8897

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Hermosa Beach Final Clarifier Tank - Vertical Fixed Roof Tank
Long Beach, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil 2.5 RVP	175.15	665.80	840.95

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Hermosa Beach Final Shipping Tank
City:	Long Beach
State:	California
Company:	E & B Resources
Type of Tank:	Vertical Fixed Roof Tank
Description:	2900 bbl Shipping Tank

Tank Dimensions

Shell Height (ft):	16.00
Diameter (ft):	40.00
Liquid Height (ft) :	15.00
Avg. Liquid Height (ft):	7.50
Volume (gallons):	141,004.94
Turnovers:	435.00
Net Throughput(gal/yr):	61,337,147.67
Is Tank Heated (y/n):	Y

Paint Characteristics

Shell Color/Shade:	Aluminum/Specular
Shell Condition	Good
Roof Color/Shade:	Aluminum/Specular
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.06

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: Long Beach, California (Avg Atmospheric Pressure = 14.7 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Hermosa Beach Final Shipping Tank - Vertical Fixed Roof Tank
Long Beach, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil 2.5 RVP	Jan	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Feb	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Mar	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Apr	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	May	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Jun	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Jul	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Aug	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Sep	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Oct	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Nov	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5
Crude Oil 2.5 RVP	Dec	150.00	149.00	151.00	150.00	6.3700	6.2654	6.4761	50.0000			207.00	Option 4: RVP=2.5

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Hermosa Beach Final Shipping Tank - Vertical Fixed Roof Tank
Long Beach, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):	120.4443	108.7884	120.4443	116.5590	120.4443	116.5590	120.4443	120.4443	116.5590	120.4443	116.5590	120.4443
Vapor Space Volume (cu ft):	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138
Vapor Density (lb/cu ft):	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487
Vapor Space Expansion Factor:	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286
Vented Vapor Saturation Factor:	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138	11,205.0138
Tank Diameter (ft):	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000
Vapor Space Outage (ft):	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167
Tank Shell Height (ft):	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000	16.0000
Average Liquid Height (ft):	7.5000	7.5000	7.5000	7.5000	7.5000	7.5000	7.5000	7.5000	7.5000	7.5000	7.5000	7.5000
Roof Outage (ft):	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167
Roof Outage (Cone Roof)												
Roof Outage (ft):	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167	0.4167
Roof Height (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Roof Slope (ft/ft):	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625	0.0625
Shell Radius (ft):	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000	20.0000
Vapor Density												
Vapor Density (lb/cu ft):	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487	0.0487
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Daily Avg. Liquid Surface Temp. (deg. R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Daily Average Ambient Temp. (deg. F):	55.8500	57.3000	58.5000	61.6500	64.8000	68.4000	73.0500	74.4000	72.4000	68.1000	61.2500	56.0000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Tank Paint Solar Absorptance (Shell):	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900
Tank Paint Solar Absorptance (Roof):	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900	0.3900
Daily Total Solar Insulation Factor (Btu/sqft day):	886.7697	1,146.6138	1,501.0044	1,901.7164	2,039.4116	2,128.5644	2,302.7457	2,117.1427	1,702.1536	1,320.4777	993.3724	819.8257
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286	0.0286
Daily Vapor Temperature Range (deg. R):	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000
Daily Vapor Pressure Range (psia):	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107	0.2107
Breather Vent Press. Setting Range(psia):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654	6.2654
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761	6.4761
Daily Avg. Liquid Surface Temp. (deg R):	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700	609.6700
Daily Min. Liquid Surface Temp. (deg R):	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700	608.6700
Daily Max. Liquid Surface Temp. (deg R):	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700	610.6700
Daily Ambient Temp. Range (deg. R):	21.9000	20.8000	19.0000	19.7000	17.0000	17.2000	19.3000	19.2000	19.4000	20.6000	21.7000	22.0000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494	0.2494
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700

Vapor Space Outage (ft):	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167	8.9167
Working Losses (lb):	6,850.1512	6,850.1512	6,850.1512	6,850.1512	6,850.1512	6,850.1512	6,850.1512	6,850.1512	6,850.1512	6,850.1512	6,850.1512	6,850.1512
Vapor Molecular Weight (lb/lb-mole):	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700	6.3700
Net Throughput (gal/mo.):	5,111,428.9720	5,111,428.9720	5,111,428.9720	5,111,428.9720	5,111,428.9720	5,111,428.9720	5,111,428.9720	5,111,428.9720	5,111,428.9720	5,111,428.9720	5,111,428.9720	5,111,428.9720
Annual Turnovers:	435.0000	435.0000	435.0000	435.0000	435.0000	435.0000	435.0000	435.0000	435.0000	435.0000	435.0000	435.0000
Turnover Factor:	0.2356	0.2356	0.2356	0.2356	0.2356	0.2356	0.2356	0.2356	0.2356	0.2356	0.2356	0.2356
Maximum Liquid Volume (gal):	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372	141,004.9372
Maximum Liquid Height (ft):	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000	15.0000
Tank Diameter (ft):	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000
Working Loss Product Factor:	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500	0.7500
Total Losses (lb):	6,970.5955	6,958.9396	6,970.5955	6,966.7102	6,970.5955	6,966.7102	6,970.5955	6,970.5955	6,966.7102	6,970.5955	6,966.7102	6,970.5955

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Hermosa Beach Final Shipping Tank - Vertical Fixed Roof Tank
Long Beach, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil 2.5 RVP	82,201.81	1,418.13	83,619.95

EXHIBIT O

AERMOD DISPERSION MODELING FOR LST

```
 **MODELOPTs:  RegDFAULT CONC                                              ELEV

                                     ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
-

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     7 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Model Assumes No FLAGPOLE Receptor Heights.

 **Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      7 Source(s);       2 Source Group(s); and     721 Receptor(s)

 **The Model Assumes A Pollutant Type of:  PM_10

 **Model Set To Continue RUNning After the Setup Testing.

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of Concurrent Values for Postprocessing (POSTFILE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    42.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
```

```
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.9 MB of RAM.

**Detailed Error/Message File:   HermosaBeachLSTPhase2.err
**File for Summary of Results:   HermosaBeachLSTPhase2.sum
```

**MODELOPTs: RegDFAULT CONC ELEV

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

**MODELOPTs: RegDFAULT CONC ELEV

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: Z:\Petrotech\E&B Natural Resources Management\E&B409 - Hermosa Beach AQIA\Metero Met Version: 11059
Profile file: Z:\Petrotech\E&B Natural Resources Management\E&B409 - Hermosa Beach AQIA\Metero
Surface format: FREE
Profile format: FREE
Surface station no.: 0 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2005 Year: 2005

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
05	01	01	1	01	-3.2	0.062	-9.000	-9.000	-999.	35.	6.5	0.26	1.00	1.00	1.10	52.	9.1	282.5	5.5
05	01	01	1	02	-3.9	0.073	-9.000	-9.000	-999.	45.	8.9	0.26	1.00	1.00	1.30	51.	9.1	282.0	5.5
05	01	01	1	03	-2.7	0.056	-9.000	-9.000	-999.	30.	5.9	0.26	1.00	1.00	1.00	48.	9.1	281.4	5.5
05	01	01	1	04	-2.3	0.056	-9.000	-9.000	-999.	30.	6.8	0.26	1.00	1.00	1.00	52.	9.1	280.9	5.5
05	01	01	1	05	-2.8	0.062	-9.000	-9.000	-999.	35.	7.5	0.26	1.00	1.00	1.10	62.	9.1	281.4	5.5
05	01	01	1	06	-5.3	0.078	-9.000	-9.000	-999.	51.	8.2	0.26	1.00	1.00	1.40	64.	9.1	280.9	5.5
05	01	01	1	07	-3.9	0.067	-9.000	-9.000	-999.	40.	7.0	0.26	1.00	1.00	1.20	55.	9.1	280.4	5.5
05	01	01	1	08	-4.9	0.078	-9.000	-9.000	-999.	51.	8.8	0.26	1.00	0.53	1.40	76.	9.1	280.9	5.5
05	01	01	1	09	45.2	0.282	0.535	0.005	122.	344.	-44.4	0.26	1.00	0.30	2.20	78.	9.1	283.1	5.5
05	01	01	1	10	114.4	0.293	1.400	0.005	863.	365.	-19.8	0.26	1.00	0.22	2.10	83.	9.1	284.9	5.5
05	01	01	1	11	139.9	0.299	1.676	0.010	1212.	376.	-17.2	0.26	1.00	0.19	2.10	80.	9.1	287.0	5.5
05	01	01	1	12	15.0	0.122	0.798	0.010	1215.	125.	-10.8	0.26	1.00	0.18	0.80	30.	9.1	287.0	5.5
05	01	01	1	13	28.1	0.223	0.985	0.009	1221.	242.	-35.3	0.26	1.00	0.18	1.70	184.	9.1	287.0	5.5
05	01	01	1	14	17.9	0.256	0.849	0.009	1225.	298.	-84.0	0.26	1.00	0.19	2.10	201.	9.1	287.0	5.5
05	01	01	1	15	4.2	0.231	0.522	0.009	1226.	256.	-267.3	0.26	1.00	0.22	2.00	205.	9.1	286.4	5.5
05	01	01	1	16	0.1	0.180	0.151	0.009	1226.	176.	-5205.5	0.26	1.00	0.31	1.60	211.	9.1	286.4	5.5
05	01	01	1	17	-1.7	0.045	-9.000	-9.000	-999.	46.	4.9	0.26	1.00	0.57	0.80	216.	9.1	285.9	5.5
05	01	01	1	18	-0.6	0.028	-9.000	-9.000	-999.	11.	3.4	0.26	1.00	1.00	0.50	38.	9.1	285.4	5.5
05	01	01	1	19	-0.4	0.022	-9.000	-9.000	-999.	8.	2.8	0.26	1.00	1.00	0.40	261.	9.1	284.9	5.5
05	01	01	1	20	-0.4	0.022	-9.000	-9.000	-999.	8.	2.8	0.26	1.00	1.00	0.40	337.	9.1	284.9	5.5
05	01	01	1	21	-1.5	0.045	-9.000	-9.000	-999.	22.	5.5	0.26	1.00	1.00	0.80	12.	9.1	284.9	5.5
05	01	01	1	22	-1.5	0.045	-9.000	-9.000	-999.	22.	5.5	0.26	1.00	1.00	0.80	360.	9.1	284.9	5.5
05	01	01	1	23	-1.9	0.050	-9.000	-9.000	-999.	26.	6.2	0.26	1.00	1.00	0.90	46.	9.1	284.2	5.5
05	01	01	1	24	-1.5	0.045	-9.000	-9.000	-999.	22.	5.5	0.26	1.00	1.00	0.80	12.	9.1	284.2	5.5

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
05	01	01	01	5.5	0	-999.	-99.00	282.6	99.0	-99.00	-99.00
05	01	01	01	9.1	1	52.	1.10	-999.0	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

**MODELOPTs: RegDFAULT CONC ELEV

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 3 YEARS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
STCK1	1ST HIGHEST VALUE IS 0.15981	AT (371056.55, 3747393.95, 22.33, 22.33, 0.00)	DC	
	2ND HIGHEST VALUE IS 0.15285	AT (371083.04, 3747411.05, 21.12, 21.12, 0.00)	DC	
	3RD HIGHEST VALUE IS 0.15256	AT (371081.46, 3747391.90, 21.22, 21.22, 0.00)	DC	
	4TH HIGHEST VALUE IS 0.12988	AT (371100.00, 3747400.00, 19.80, 19.80, 0.00)	GC	UCART1
	5TH HIGHEST VALUE IS 0.12405	AT (371107.96, 3747408.99, 19.35, 19.35, 0.00)	DC	
	6TH HIGHEST VALUE IS 0.12098	AT (371058.13, 3747413.10, 22.34, 22.34, 0.00)	DC	
	7TH HIGHEST VALUE IS 0.10520	AT (371134.45, 3747426.09, 20.60, 25.04, 0.00)	DC	
	8TH HIGHEST VALUE IS 0.10434	AT (371106.38, 3747389.84, 19.47, 19.47, 0.00)	DC	
	9TH HIGHEST VALUE IS 0.09957	AT (371127.80, 3747442.68, 20.25, 25.41, 0.00)	DC	
	10TH HIGHEST VALUE IS 0.09956	AT (371132.87, 3747406.94, 20.29, 20.29, 0.00)	DC	
ALL	1ST HIGHEST VALUE IS 0.80417	AT (371000.00, 3747400.00, 21.20, 21.20, 0.00)	GC	UCART1
	2ND HIGHEST VALUE IS 0.63213	AT (371028.47, 3747357.71, 22.05, 22.05, 0.00)	DC	
	3RD HIGHEST VALUE IS 0.61551	AT (370966.66, 3747344.30, 18.12, 22.15, 0.00)	DC	
	4TH HIGHEST VALUE IS 0.53722	AT (371056.55, 3747393.95, 22.33, 22.33, 0.00)	DC	
	5TH HIGHEST VALUE IS 0.47372	AT (371054.97, 3747374.80, 22.08, 22.08, 0.00)	DC	
	6TH HIGHEST VALUE IS 0.43364	AT (371002.87, 3747326.57, 22.09, 22.09, 0.00)	DC	
	7TH HIGHEST VALUE IS 0.43184	AT (371058.13, 3747413.10, 22.34, 22.34, 0.00)	DC	
	8TH HIGHEST VALUE IS 0.37903	AT (371081.46, 3747391.90, 21.22, 21.22, 0.00)	DC	
	9TH HIGHEST VALUE IS 0.36564	AT (371083.04, 3747411.05, 21.12, 21.12, 0.00)	DC	
	10TH HIGHEST VALUE IS 0.34079	AT (370938.59, 3747357.92, 13.29, 22.17, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: RegDFAULT CONC ELEV

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

NETWORK GROUP ID GRID-ID			AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE
STCK1	HIGH	1ST HIGH VALUE IS	3.33648	ON 07100814:	AT (371054.97,	3747374.80,	22.08,	22.08,	0.00)	DC
	HIGH	2ND HIGH VALUE IS	2.61047	ON 05040816:	AT (371054.97,	3747374.80,	22.08,	22.08,	0.00)	DC
	HIGH	6TH HIGH VALUE IS	2.35206	ON 06030716:	AT (371054.97,	3747374.80,	22.08,	22.08,	0.00)	DC
ALL	HIGH	1ST HIGH VALUE IS	5.64028	ON 05091702:	AT (371002.87,	3747326.57,	22.09,	22.09,	0.00)	DC
	HIGH	2ND HIGH VALUE IS	5.61802	ON 07103023:	AT (371002.87,	3747326.57,	22.09,	22.09,	0.00)	DC
	HIGH	6TH HIGH VALUE IS	4.72487	ON 07082904:	AT (371028.47,	3747357.71,	22.05,	22.05,	0.00)	DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: RegDFAULT CONC ELEV

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

NETWORK GROUP ID GRID-ID			AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE
STCK1	HIGH	1ST HIGH VALUE IS	0.74039	ON 06040524:	AT (371054.97,	3747374.80,	22.08,	22.08,	0.00)	DC
ALL	HIGH	1ST HIGH VALUE IS	1.54364	ON 07081524:	AT (371002.87,	3747326.57,	22.09,	22.09,	0.00)	DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: RegDFAULT CONC ELEV

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 152 Informational Message(s)

A Total of 26280 Hours Were Processed

A Total of 0 Calm Hours Identified

A Total of 152 Missing Hours Identified (0.58 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

```
                                          ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     6 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Model Assumes No FLAGPOLE Receptor Heights.

 **Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      6 Source(s);       3 Source Group(s); and    2517 Receptor(s)

 **The Model Assumes A Pollutant Type of:  PM_10

 **Model Set To Continue RUNning After the Setup Testing.

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of Concurrent Values for Postprocessing (POSTFILE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    42.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      5.2 MB of RAM.

 **Detailed Error/Message File:   HermosaBeachLSTP4_wo_LV.err
 **File for Summary of Results:   HermosaBeachLSTP4_wo_LV.sum
```

**MODELOPTs: RegDFAULT CONC ELEV

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

**MODELOPTs: RegDFAULT CONC ELEV

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: Z:\PETROTECH\E&B NATURAL RESOURCES MANAGEMENT\E&B409 - HERMOSA BEACH AQIA\METERO Met Version: 11059
Profile file: Z:\PETROTECH\E&B NATURAL RESOURCES MANAGEMENT\E&B409 - HERMOSA BEACH AQIA\METERO
Surface format: FREE
Profile format: FREE
Surface station no.: 0 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2005 Year: 2005

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
05	01	01	1	01	-3.2	0.062	-9.000	-9.000	-999.	35.	6.5	0.26	1.00	1.00	1.10	52.	9.1	282.5	5.5
05	01	01	1	02	-3.9	0.073	-9.000	-9.000	-999.	45.	8.9	0.26	1.00	1.00	1.30	51.	9.1	282.0	5.5
05	01	01	1	03	-2.7	0.056	-9.000	-9.000	-999.	30.	5.9	0.26	1.00	1.00	1.00	48.	9.1	281.4	5.5
05	01	01	1	04	-2.3	0.056	-9.000	-9.000	-999.	30.	6.8	0.26	1.00	1.00	1.00	52.	9.1	280.9	5.5
05	01	01	1	05	-2.8	0.062	-9.000	-9.000	-999.	35.	7.5	0.26	1.00	1.00	1.10	62.	9.1	281.4	5.5
05	01	01	1	06	-5.3	0.078	-9.000	-9.000	-999.	51.	8.2	0.26	1.00	1.00	1.40	64.	9.1	280.9	5.5
05	01	01	1	07	-3.9	0.067	-9.000	-9.000	-999.	40.	7.0	0.26	1.00	1.00	1.20	55.	9.1	280.4	5.5
05	01	01	1	08	-4.9	0.078	-9.000	-9.000	-999.	51.	8.8	0.26	1.00	0.53	1.40	76.	9.1	280.9	5.5
05	01	01	1	09	45.2	0.282	0.535	0.005	122.	344.	-44.4	0.26	1.00	0.30	2.20	78.	9.1	283.1	5.5
05	01	01	1	10	114.4	0.293	1.400	0.005	863.	365.	-19.8	0.26	1.00	0.22	2.10	83.	9.1	284.9	5.5
05	01	01	1	11	139.9	0.299	1.676	0.010	1212.	376.	-17.2	0.26	1.00	0.19	2.10	80.	9.1	287.0	5.5
05	01	01	1	12	15.0	0.122	0.798	0.010	1215.	125.	-10.8	0.26	1.00	0.18	0.80	30.	9.1	287.0	5.5
05	01	01	1	13	28.1	0.223	0.985	0.009	1221.	242.	-35.3	0.26	1.00	0.18	1.70	184.	9.1	287.0	5.5
05	01	01	1	14	17.9	0.256	0.849	0.009	1225.	298.	-84.0	0.26	1.00	0.19	2.10	201.	9.1	287.0	5.5
05	01	01	1	15	4.2	0.231	0.522	0.009	1226.	256.	-267.3	0.26	1.00	0.22	2.00	205.	9.1	286.4	5.5
05	01	01	1	16	0.1	0.180	0.151	0.009	1226.	176.	-5205.5	0.26	1.00	0.31	1.60	211.	9.1	286.4	5.5
05	01	01	1	17	-1.7	0.045	-9.000	-9.000	-999.	46.	4.9	0.26	1.00	0.57	0.80	216.	9.1	285.9	5.5
05	01	01	1	18	-0.6	0.028	-9.000	-9.000	-999.	11.	3.4	0.26	1.00	1.00	0.50	38.	9.1	285.4	5.5
05	01	01	1	19	-0.4	0.022	-9.000	-9.000	-999.	8.	2.8	0.26	1.00	1.00	0.40	261.	9.1	284.9	5.5
05	01	01	1	20	-0.4	0.022	-9.000	-9.000	-999.	8.	2.8	0.26	1.00	1.00	0.40	337.	9.1	284.9	5.5
05	01	01	1	21	-1.5	0.045	-9.000	-9.000	-999.	22.	5.5	0.26	1.00	1.00	0.80	12.	9.1	284.9	5.5
05	01	01	1	22	-1.5	0.045	-9.000	-9.000	-999.	22.	5.5	0.26	1.00	1.00	0.80	360.	9.1	284.9	5.5
05	01	01	1	23	-1.9	0.050	-9.000	-9.000	-999.	26.	6.2	0.26	1.00	1.00	0.90	46.	9.1	284.2	5.5
05	01	01	1	24	-1.5	0.045	-9.000	-9.000	-999.	22.	5.5	0.26	1.00	1.00	0.80	12.	9.1	284.2	5.5

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
05	01	01	01	5.5	0	-999.	-99.00	282.6	99.0	-99.00	-99.00
05	01	01	01	9.1	1	52.	1.10	-999.0	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

**MODELOPTs: RegDFAULT CONC ELEV

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 3 YEARS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
COMBUSTE	1ST HIGHEST VALUE IS	0.08531 AT	(371100.00, 3747400.00, 22.70, 22.70, 0.00)	GC	UCART1
	2ND HIGHEST VALUE IS	0.07469 AT	(371150.00, 3747450.00, 26.30, 26.30, 0.00)	GC	UCART1
	3RD HIGHEST VALUE IS	0.06586 AT	(371100.00, 3747450.00, 22.00, 22.00, 0.00)	GC	UCART1
	4TH HIGHEST VALUE IS	0.05951 AT	(371200.00, 3747450.00, 27.30, 27.30, 0.00)	GC	UCART1
	5TH HIGHEST VALUE IS	0.05845 AT	(371150.00, 3747400.00, 25.10, 25.10, 0.00)	GC	UCART1
	6TH HIGHEST VALUE IS	0.05712 AT	(371050.00, 3747400.00, 19.10, 19.10, 0.00)	GC	UCART1
	7TH HIGHEST VALUE IS	0.05346 AT	(371200.00, 3747500.00, 26.20, 55.00, 0.00)	GC	UCART1
	8TH HIGHEST VALUE IS	0.05093 AT	(371150.00, 3747500.00, 26.00, 26.00, 0.00)	GC	UCART1
	9TH HIGHEST VALUE IS	0.04776 AT	(371250.00, 3747500.00, 28.00, 61.00, 0.00)	GC	UCART1
	10TH HIGHEST VALUE IS	0.04421 AT	(371250.00, 3747450.00, 28.00, 28.00, 0.00)	GC	UCART1
MICROTUR	1ST HIGHEST VALUE IS	0.50207 AT	(371033.21, 3747415.16, 18.16, 18.16, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.44743 AT	(371034.79, 3747434.31, 18.00, 18.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.39943 AT	(371050.00, 3747450.00, 18.30, 18.30, 0.00)	GC	UCART1
	4TH HIGHEST VALUE IS	0.32230 AT	(371018.35, 3747430.97, 18.00, 18.00, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.31034 AT	(371100.00, 3747450.00, 22.00, 22.00, 0.00)	GC	UCART1
	6TH HIGHEST VALUE IS	0.27729 AT	(371050.00, 3747400.00, 19.10, 19.10, 0.00)	GC	UCART1
	7TH HIGHEST VALUE IS	0.22538 AT	(370900.00, 3747350.00, 17.70, 17.70, 0.00)	GC	UCART1
	8TH HIGHEST VALUE IS	0.20673 AT	(371100.00, 3747500.00, 23.70, 23.70, 0.00)	GC	UCART1
	9TH HIGHEST VALUE IS	0.20234 AT	(371050.00, 3747500.00, 19.70, 19.70, 0.00)	GC	UCART1
	10TH HIGHEST VALUE IS	0.19433 AT	(370950.00, 3747350.00, 17.00, 17.00, 0.00)	GC	UCART1
ALL	1ST HIGHEST VALUE IS	0.52385 AT	(371033.21, 3747415.16, 18.16, 18.16, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.46835 AT	(371034.79, 3747434.31, 18.00, 18.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.42698 AT	(371050.00, 3747450.00, 18.30, 18.30, 0.00)	GC	UCART1
	4TH HIGHEST VALUE IS	0.37620 AT	(371100.00, 3747450.00, 22.00, 22.00, 0.00)	GC	UCART1
	5TH HIGHEST VALUE IS	0.33643 AT	(371018.35, 3747430.97, 18.00, 18.00, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.33440 AT	(371050.00, 3747400.00, 19.10, 19.10, 0.00)	GC	UCART1
	7TH HIGHEST VALUE IS	0.27604 AT	(371100.00, 3747400.00, 22.70, 22.70, 0.00)	GC	UCART1
	8TH HIGHEST VALUE IS	0.26108 AT	(371150.00, 3747450.00, 26.30, 26.30, 0.00)	GC	UCART1
	9TH HIGHEST VALUE IS	0.24207 AT	(371100.00, 3747500.00, 23.70, 23.70, 0.00)	GC	UCART1
	10TH HIGHEST VALUE IS	0.24044 AT	(370900.00, 3747350.00, 17.70, 17.70, 0.00)	GC	UCART1

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: RegDFAULT CONC ELEV

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

GROUP ID			AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)					OF TYPE	NETWORK GRID-ID
COMBUSTE	HIGH	1ST HIGH VALUE IS	17.85576	ON 05123116: AT (	371030.05,	3747376.86,	19.00,	19.00,	0.00)	DC	
	HIGH	2ND HIGH VALUE IS	13.06041	ON 07100814: AT (	371030.05,	3747376.86,	19.00,	19.00,	0.00)	DC	
	HIGH	6TH HIGH VALUE IS	7.57170	ON 06040514: AT (	371030.05,	3747376.86,	19.00,	19.00,	0.00)	DC	
MICROTUR	HIGH	1ST HIGH VALUE IS	2.80341	ON 07091018: AT (	371033.21,	3747415.16,	18.16,	18.16,	0.00)	DC	
	HIGH	2ND HIGH VALUE IS	2.75084	ON 07090818: AT (	371033.21,	3747415.16,	18.16,	18.16,	0.00)	DC	
	HIGH	6TH HIGH VALUE IS	2.61736	ON 05050418: AT (	371033.21,	3747415.16,	18.16,	18.16,	0.00)	DC	
ALL	HIGH	1ST HIGH VALUE IS	17.92404	ON 05123116: AT (	371030.05,	3747376.86,	19.00,	19.00,	0.00)	DC	
	HIGH	2ND HIGH VALUE IS	13.11380	ON 07100814: AT (	371030.05,	3747376.86,	19.00,	19.00,	0.00)	DC	
	HIGH	6TH HIGH VALUE IS	7.64064	ON 06040514: AT (	371030.05,	3747376.86,	19.00,	19.00,	0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: RegDFAULT CONC ELEV

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
COMBUSTE HIGH	1ST HIGH VALUE IS	1.68341	ON 06010224:	AT (371030.05, 3747376.86, 19.00, 19.00, 0.00)	DC	
MICROTUR HIGH	1ST HIGH VALUE IS	1.50822	ON 05010824:	AT (371000.00, 3747450.00, 18.30, 18.30, 0.00)	GC	UCART1
ALL HIGH	1ST HIGH VALUE IS	1.77687	ON 06010224:	AT (371030.05, 3747376.86, 19.00, 19.00, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

**MODELOPTs: RegDFAULT CONC ELEV

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 152 Informational Message(s)

A Total of 26280 Hours Were Processed

A Total of 0 Calm Hours Identified

A Total of 152 Missing Hours Identified (0.58 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
*** NONE ***

EXHIBIT P

TRAFFIC REPORT (EXCERPTS)

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Table E - Year 2018 plus Construction Phase 4 Intersection Level of Service Summary

			Year 2018 Baseline				Year 2018 plus Construction Phase 4						
			AM Peak Hour		PM Peak Hour		AM Peak Hour			PM Peak Hour			
	Intersection	Control	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	Change	V/C or Delay	LOS	Change	Impact?
1 .	PCH/Artesia Boulevard	signal	**1.265**	**F**	0.832	D	**1.265**	**F**	0.000	0.834	D	0.002	no
2 .	PCH/21st Street	signal	0.730	C	0.681	B	0.730	C	0.000	0.681	B	0.000	no
3 .	PCH/Aviation Boulevard	signal	**1.140**	**F**	**1.124**	**F**	**1.143**	**F**	0.003	**1.125**	**F**	0.001	no
4 .	PCH/8th Street	signal	0.858	D	**1.062**	**F**	0.860	D	0.002	**1.063**	**F**	0.001	no
5 .	PCH/5th Street	signal	0.810	D	0.749	C	0.812	D	0.002	0.749	C	0.000	no
6 .	PCH/2nd Street	signal	0.758	C	0.781	C	0.760	C	0.002	0.783	C	0.002	no
7 .	PCH/Herondo Ave-Anita St	signal	0.858	D	**1.100**	**F**	0.869	D	0.011	**1.101**	**F**	0.001	no
8 .	PCH/Pier Avenue-14th Street	signal	0.664	B	0.778	C	0.664	B	0.000	0.780	C	0.002	no
9 .	Prospect Avenue/Artesia Blvd	signal	0.579	A	0.686	B	0.582	A	0.003	0.690	B	0.004	no
10 .	Prospect Ave/Aviation Blvd	signal	0.647	B	0.733	C	0.647	B	0.000	0.733	C	0.000	no
11 .	Prospect Ave/Anita Street	signal	0.478	A	0.555	A	0.478	A	0.000	0.560	A	0.005	no
12 .	PCH/16th Street	signal	0.691	B	0.656	B	0.691	B	0.000	0.656	B	0.000	no
13 .	Ocean Drive/Aviation Blvd	signal	0.405	A	0.460	A	0.405	A	0.000	0.460	A	0.000	no
14 .	Valley Drive/Pier Avenue	all-way stop	12.5 sec	B	20.8 sec	C	12.7 sec	B	--	21.2 sec	C	--	no
15 .	Ardmore Avenue/Pier Avenue	all-way stop	12.4 sec	B	17.6 sec	C	12.5 sec	B	--	17.7 sec	C	--	no
16 .	Valley Drive/11th Street	all-way stop	7.8 sec	A	9.3 sec	A	7.9 sec	A	--	9.3 sec	A	--	no
17 .	Valley Drive/11th Place	1-way stop	9.7 sec	A	11.1 sec	B	9.8 sec	A	--	11.2 sec	B	--	no
18 .	Valley Drive/18th Street	all-way stop	9.4 sec	A	12.1 sec	B	9.5 sec	A	--	12.2 sec	B	--	no
19 .	Valley Drive/2nd Street	all-way stop	8.7 sec	A	11.1 sec	B	8.7 sec	A	--	11.5 sec	B	--	no
20 .	Valley Drive/6th Street	all-way stop	8.0 sec	A	9.4 sec	A	8.0 sec	A	--	9.6 sec	A	--	no
21 .	Valley Drive/Herondo Street	all-way stop	11.1 sec	B	15.9 sec	C	11.1 sec	B	--	16.1 sec	C	--	no
22 .	Flagler Ln/Anita St-190th St	all-way stop	33.2 sec	D	31.7 sec	D	34.4 sec	D	--	32.5 sec	D	--	no
23 .	Blossom Lane-Beryl St/190th St	2-way stop	**155.2 sec**	**F**	**733.2 sec**	**F**	**162.7 sec**	**F**	--	**776.7 sec**	**F**	--	no
24 .	Meyer Ln-Entradero Ave/190th St	signal	0.845	D	0.688	B	0.845	D	0.000	0.693	B	0.005	no
25 .	Anza Avenue/190th Street	signal	0.847	D	0.743	C	0.847	D	0.000	0.747	C	0.004	no
26 .	Inglewood Ave/190th St	signal	**1.117**	**F**	**1.204**	**F**	**1.121**	**F**	0.004	**1.204**	**F**	**0.000**	no
27 .	Firmona Avenue/190th St	2-way stop	**319.9 sec**	**F**	**206.8 sec**	**F**	**335.0 sec**	**F**	--	**211.8 sec**	**F**	--	no
28 .	Hawthorne Blvd/190th St	signal	**0.925**	**E**	**0.925**	**E**	**0.925**	**E**	0.000	**0.925**	**E**	0.000	no
29 .	Prairie Avenue/190th St	signal	0.863	D	**0.987**	**E**	0.864	D	0.001	**0.987**	**E**	0.000	no
30 .	Crenshaw Blvd/190th St	signal	**0.910**	**E**	0.883	D	**0.910**	**E**	0.000	0.887	D	0.004	no
31 .	Western Avenue/190th St	signal	0.774	C	0.792	C	0.774	C	0.000	0.792	C	0.000	no
32 .	I-405 NB ramps/Artesia Blvd	signal	0.543	A	0.878	D	0.544	A	0.001	0.878	D	0.000	no
33 .	I-405 SB ramps/Artesia Blvd	1-way stop	11.1 sec	B	25.1 sec	D	11.1 sec	B	--	25.1 sec	D	--	no
34 .	Prairie Avenue/Artesia Blvd	signal	**0.961**	**E**	0.883	D	**0.961**	**E**	0.000	0.887	D	0.004	no
35 .	I-405 NB ramps/182nd St	signal	0.698	B	0.896	D	0.700	C	0.002	0.897	D	0.001	no
36 .	I-405 SB ramps/Crenshaw Blvd	signal	**1.032**	**F**	0.823	D	**1.035**	**F**	0.003	0.827	D	0.004	no
37 .	Crenshaw Blvd/182nd St	signal	0.867	D	**0.938**	**E**	0.869	D	0.002	**0.938**	**E**	0.000	no
38 .	Hermosa Ave-Harbor Dr/Herondo St	signal	0.493	A	0.476	A	0.493	A	0.000	0.476	A	0.000	no
39 .	PCH/Catalina Ave	signal	0.829	D	0.882	D	0.829	D	0.000	0.883	D	0.001	no
40 .	PCH/Irena Avenue	signal	0.680	B	0.796	C	0.681	B	0.001	0.796	C	0.000	no
41 .	PCH/Beryl Street	signal	0.758	C	0.890	D	0.759	C	0.001	0.891	D	0.001	no
42 .	Prospect Ave/Beryl Street	signal	0.519	A	0.596	A	0.519	A	0.000	0.596	A	0.000	no
43 .	Harkness Lane/Beryl Street	all-way stop	9.9 sec	A	13.0 sec	B	9.9 sec	A	--	13 sec	B	--	no
44 .	Flagler Lane/Beryl Street	all-way stop	11.1 sec	B	14.1 sec	B	11.1 sec	B	--	14.1 sec	B	--	no

Notes: Signalized intersections analyzed with the *Intersection Capacity Utilization* (ICU) methodology which provides LOS in terms of volume-to-capacity (V/C) ratios.
Unsignalized intesections analyzed with Highway Capacity Manual (HCM) methodology which provideds LOS in terms of average control delay for entire intersection (for all-way stop control), or for critical movement (for 1- or 2-way stop control).

BOLD - Indicates intersection would operate with unsatisfactory LOS (LOS E or LOS F).

BOLD - Indicates intesection would be signficantly impacted by the proposed project.

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Table A - Existing Intersection Level of Service Summary

	Intersection	Jurisdiction	Control	AM Peak Hour V/C or Delay	AM Peak Hour LOS	PM Peak Hour V/C or Delay	PM Peak Hour LOS
1 .	PCH/Artesia Boulevard	Caltrans/CMP	signal	**1.247**	**F**	0.830	D
2 .	PCH/21st Street	Caltrans/Hermosa Beach	signal	0.720	C	0.672	B
3 .	PCH/Aviation Boulevard	Caltrans/Hermosa Beach	signal	**1.124**	**F**	**1.104**	**F**
4 .	PCH/8th Street	Caltrans/Hermosa Beach	signal	0.846	D	1.048	F
5 .	PCH/5th Street	Caltrans/Hermosa Beach	signal	0.799	C	0.739	C
6 .	PCH/2nd Street	Caltrans/Hermosa Beach	signal	0.748	C	0.771	C
7 .	PCH/Herondo Ave-Anita St	Caltrans/Hermosa Beach	signal	0.847	D	**1.084**	**F**
8 .	PCH/Pier Avenue-14th Street	Caltrans/Hermosa Beach	signal	0.655	B	0.767	C
9 .	Prospect Avenue/Artesia Blvd	Hermosa Beach	signal	0.571	A	0.677	B
10 .	Prospect Ave/Aviation Blvd	Hermosa Beach	signal	0.639	B	0.723	C
11 .	Prospect Ave/Anita Street	Redondo Beach	signal	0.472	A	0.548	A
12 .	PCH/16th Street	Caltrans/Hermosa Beach	signal	0.682	B	0.648	B
13 .	Ocean Drive/Aviation Blvd	Hermosa Beach	signal	0.400	A	0.454	A
14 .	Valley Drive/Pier Avenue	Hermosa Beach	all-way stop	12.3 sec	B	20.1 sec	C
15 .	Ardmore Avenue/Pier Avenue	Hermosa Beach	all-way stop	12.2 sec	B	17.1 sec	C
16 .	Valley Drive/11th Street	Hermosa Beach	all-way stop	7.8 sec	A	9.2 sec	A
17 .	Valley Drive/11th Place	Hermosa Beach	1-way stop	9.7 sec	A	11.1 sec	B
18 .	Valley Drive/18th Street	Hermosa Beach	all-way stop	9.3 sec	A	11.9 sec	B
19 .	Valley Drive/2nd Street	Hermosa Beach	all-way stop	8.7 sec	A	11.0 sec	B
20 .	Valley Drive/6th Street	Hermosa Beach	all-way stop	7.9 sec	A	9.4 sec	A
21 .	Valley Drive/Herondo Street	Hermosa Beach	all-way stop	11.0 sec	B	15.6 sec	C
22 .	Flagler Ln/Anita St-190th St	Redondo Beach	all-way stop	31.4 sec	D	29.9 sec	D
23 .	Blossom Lane-Beryl St/190th St	Redondo Beach	2-way stop	**130.0 sec**	**F**	**612.5 sec**	**F**
24 .	Meyer Ln-Entradero Ave/190th St	Redondo Beach/Torrance	signal	0.834	D	0.679	B
25 .	Anza Avenue/190th Street	Redondo Beach/Torrance	signal	0.836	D	0.733	C
26 .	Inglewood Ave/190th St	Redondo Beach/Torrance	signal	**1.101**	**F**	**1.187**	**F**
27 .	Firmona Avenue/190th St	Redondo Beach/Torrance	2-way stop	**282.5 sec**	**F**	**182.5 sec**	**F**
28 .	Hawthorne Blvd/190th St	Redondo Beach/Torrance	signal	**0.912**	**E**	**0.912**	**E**
29 .	Prairie Avenue/190th St	Torrance	signal	0.871	D	0.973	E
30 .	Crenshaw Blvd/190th St	Torrance	signal	0.898	D	0.871	D
31 .	Western Avenue/190th St	Caltrans/Torrance	signal	0.764	C	0.781	C
32 .	I-405 NB ramps/Artesia Blvd	Caltrans/CMP	signal	0.532	A	0.866	D
33 .	I-405 SB ramps/Artesia Blvd	Caltrans/CMP	1-way stop	11.0 sec	B	23.9 sec	C
34 .	Prairie Avenue/Artesia Blvd	Torrance	signal	**0.948**	**E**	0.871	D
35 .	I-405 NB ramps/182nd St	Caltrans/Torrance	signal	0.688	B	0.884	D
36 .	I-405 SB ramps/Crenshaw Blvd	Caltrans/Torrance	signal	**1.018**	**F**	0.812	D
37 .	Crenshaw Blvd/182nd St	Torrance	signal	0.855	D	**0.925**	**E**
38 .	Hermosa Ave-Harbor Dr/Herondo St	Redondo Beach	signal	0.487	A	0.470	A
39 .	PCH/Catalina Ave	Caltrans/Redondo Beach	signal	0.818	D	0.870	D
40 .	PCH/Irena Avenue	Caltrans/Redondo Beach	signal	0.672	B	0.785	C
41 .	PCH/Beryl Street	Caltrans/Redondo Beach	signal	0.748	C	0.878	D
42 .	Prospect Ave/Beryl Street	Redondo Beach	signal	0.512	A	0.588	A
43 .	Harkness Lane/Beryl Street	Redondo Beach	all-way stop	9.8 sec	A	12.7 sec	B
44 .	Flagler Lane/Beryl Street	Redondo Beach	all-way stop	11.0 sec	B	13.9 sec	B

Notes: Signalized intersections analyzed with the *Intersection Capacity Utilization* (ICU) methodology which provides LOS in terms of volume-to-capacity (V/C) ratios.

Unsignalized intesections analyzed with Highway Capacity Manual (HCM) methodology which provideds LOS in terms of average control delay for entire intersection (for all-way stop control), or for critical movement (for 1- or 2-way stop control).

BOLD - Indicates intersection is currently operating with unsatisfactory LOS (LOS E or LOS F).

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Table F - Buildout Year 2035 plus Operational Phase Intersection Level of Service Summary

			Year 2035 Baseline				Year 2035 plus Operational Phase						
			AM Peak Hour		PM Peak Hour		AM Peak Hour			PM Peak Hour			
	Intersection	Control	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	Change	V/C or Delay	LOS	Change	Impact?
1 .	PCH/Artesia Boulevard	signal	**1.303**	**F**	0.856	D	**1.303**	**F**	0.000	0.857	D	0.001	no
2 .	PCH/21st Street	signal	0.750	C	0.700	C	0.750	C	0.000	0.700	C	0.000	no
3 .	PCH/Aviation Boulevard	signal	**1.174**	**F**	**1.153**	**F**	**1.175**	**F**	0.001	**1.154**	**F**	0.001	no
4 .	PCH/8th Street	signal	0.883	D	**1.094**	**F**	0.884	D	0.001	**1.094**	**F**	0.000	no
5 .	PCH/5th Street	signal	0.833	D	0.770	C	0.834	D	0.001	0.770	C	0.000	no
6 .	PCH/2nd Street	signal	0.780	C	0.804	D	0.781	C	0.001	0.804	D	0.000	no
7 .	PCH/Herondo Ave-Anita St	signal	0.883	D	**1.132**	**F**	0.887	D	0.004	**1.133**	**F**	0.001	no
8 .	PCH/Pier Avenue-14th Street	signal	0.682	B	0.800	C	0.682	B	0.000	0.801	D	0.001	no
9 .	Prospect Avenue/Artesia Blvd	signal	0.594	A	0.705	C	0.595	A	0.001	0.706	C	0.001	no
10 .	Prospect Ave/Aviation Blvd	signal	0.665	B	0.753	C	0.665	B	0.000	0.753	C	0.000	no
11 .	Prospect Ave/Anita Street	signal	0.490	A	0.570	A	0.490	A	0.000	0.572	A	0.002	no
12 .	PCH/16th Street	signal	0.710	C	0.674	B	0.710	C	0.000	0.674	B	0.000	no
13 .	Ocean Drive/Aviation Blvd	signal	0.415	A	0.471	A	0.415	A	0.000	0.471	A	0.000	no
14 .	Valley Drive/Pier Avenue	all-way stop	12.8 sec	B	22.4 sec	C	12.9 sec	B	--	22.6 sec	C	--	no
15 .	Ardmore Avenue/Pier Avenue	all-way stop	12.8 sec	B	18.7 sec	C	12.8 sec	B	--	18.8 sec	C	--	no
16 .	Valley Drive/11th Street	all-way stop	7.9 sec	A	9.4 sec	A	7.9 sec	A	--	9.4 sec	A	--	no
17 .	Valley Drive/11th Place	1-way stop	9.7 sec	A	11.3 sec	B	9.8 sec	A	--	11.3 sec	B	--	no
18 .	Valley Drive/18th Street	all-way stop	9.5 sec	A	12.5 sec	B	9.6 sec	A	--	12.6 sec	B	--	no
19 .	Valley Drive/2nd Street	all-way stop	8.8 sec	A	11.5 sec	B	8.8 sec	A	--	11.6 sec	B	--	no
20 .	Valley Drive/6th Street	all-way stop	8.0 sec	A	9.6 sec	A	8.0 sec	A	--	9.6 sec	A	--	no
21 .	Valley Drive/Herondo Street	all-way stop	11.3 sec	B	16.7 sec	C	11.3 sec	B	--	16.7 sec	C	--	no
22 .	Flagler Ln/Anita St-190th St	all-way stop	**37.7 sec**	**E**	**36.2 sec**	**E**	**38.2 sec**	**E**	--	**36.5 sec**	**E**	--	no
23 .	Blossom Lane-Beryl St/190th St	2-way stop	**236.4 sec**	**F**	**600.0 sec**	**F**	**240.2 sec**	**F**	--	**600 sec**	**F**	--	no
24 .	Meyer Ln-Entradero Ave/190th St	signal	0.870	D	0.704	C	0.870	D	0.000	0.706	C	0.002	no
25 .	Anza Avenue/190th Street	signal	0.872	D	0.764	C	0.872	D	0.000	0.765	C	0.001	no
26 .	Inglewood Ave/190th St	signal	**1.150**	**F**	**1.240**	**F**	**1.151**	**F**	0.001	**1.240**	**F**	**0.000**	no
27 .	Firmona Avenue/190th St	2-way stop	**412.7 sec**	**F**	**270.5 sec**	**F**	**419.2 sec**	**F**	--	**272.7 sec**	**F**	--	no
28 .	Hawthorne Blvd/190th St	signal	**0.952**	**E**	**0.952**	**E**	**0.952**	**E**	0.000	**0.952**	**E**	0.000	no
29 .	Prairie Avenue/190th St	signal	0.888	D	**1.016**	**F**	0.888	E	0.000	**1.016**	**F**	0.000	no
30 .	Crenshaw Blvd/190th St	signal	**0.937**	**E**	**0.909**	**E**	**0.937**	**E**	0.000	0.910	D	0.001	no
31 .	Western Avenue/190th St	signal	0.796	C	0.815	D	0.796	C	0.000	0.815	D	0.000	no
32 .	I-405 NB ramps/Artesia Blvd	signal	0.557	A	**0.903**	**E**	0.558	A	0.001	**0.903**	**E**	**0.000**	no
33 .	I-405 SB ramps/Artesia Blvd	1-way stop	11.2 sec	B	28.1 sec	D	11.2 sec	B	--	28.1 sec	D	--	no
34 .	Prairie Avenue/Artesia Blvd	signal	**0.990**	**E**	**0.909**	**E**	**0.990**	**E**	0.000	**0.910**	**E**	**0.001**	no
35 .	I-405 NB ramps/182nd St	signal	0.717	C	**0.922**	**E**	0.718	C	0.001	**0.923**	**E**	**0.001**	no
36 .	I-405 SB ramps/Crenshaw Blvd	signal	**1.063**	**F**	0.847	D	**1.064**	**F**	0.001	0.848	D	0.001	no
37 .	Crenshaw Blvd/182nd St	signal	0.892	D	**0.965**	**E**	0.892	D	0.000	**0.965**	**E**	0.000	no
38 .	Hermosa Ave-Harbor Dr/Herondo St	signal	0.506	A	0.488	A	0.506	A	0.000	0.488	A	0.000	no
39 .	PCH/Catalina Ave	signal	0.853	D	**0.908**	**E**	0.853	D	0.000	**0.908**	**E**	**0.000**	no
40 .	PCH/Irena Avenue	signal	0.699	B	0.818	D	0.699	B	0.000	0.818	D	0.000	no
41 .	PCH/Beryl Street	signal	0.780	C	**0.916**	**E**	0.780	C	0.000	**0.916**	**E**	**0.000**	no
42 .	Prospect Ave/Beryl Street	signal	0.532	A	0.612	B	0.532	A	0.000	0.612	B	0.000	no
43 .	Harkness Lane/Beryl Street	all-way stop	10.1 sec	B	13.5 sec	B	10.1 sec	B	--	13.5 sec	B	--	no
44 .	Flagler Lane/Beryl Street	all-way stop	11.4 sec	B	14.8 sec	B	11.4 sec	B	--	14.8 sec	B	--	no

Notes: Signalized intersections analyzed with the *Intersection Capacity Utilization* (ICU) methodology which provides LOS in terms of volume-to-capacity (V/C) ratios.

Unsignalized intesections analyzed with Highway Capacity Manual (HCM) methodology which provideds LOS in terms of average control delay for entire intersection (for all-way stop control), or for critical movement (for 1- or 2-way stop control).

BOLD - Indicates intersection would operate with unsatisfactory LOS (LOS E or LOS F).

BOLD - Indicates intesection would be signficantly impacted by the proposed project.

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Table B - Year 2015 plus Construction Phase 1 Intersection Level of Service Summary

			Year 2015 Baseline				Year 2015 plus Construction Phase 1						
			AM Peak Hour		PM Peak Hour		AM Peak Hour			PM Peak Hour			
	Intersection	Control	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	Change	V/C or Delay	LOS	Change	Impact?
1 .	PCH/Artesia Boulevard	signal	**1.256**	**F**	0.823	D	**1.256**	**F**	0.000	0.824	D	0.001	no
2 .	PCH/21st Street	signal	0.725	C	0.677	B	0.725	C	0.000	0.677	B	0.000	no
3 .	PCH/Aviation Boulevard	signal	**1.132**	**F**	**1.112**	**F**	**1.134**	**F**	0.002	**1.113**	**F**	0.001	no
4 .	PCH/8th Street	signal	0.852	D	**1.055**	**F**	0.854	D	0.002	**1.056**	**F**	0.001	no
5 .	PCH/5th Street	signal	0.804	D	0.744	C	0.806	D	0.002	0.744	C	0.000	no
6 .	PCH/2nd Street	signal	0.753	C	0.776	C	0.755	C	0.002	0.777	C	0.001	no
7 .	PCH/Herondo Ave-Anita St	signal	0.852	D	**1.092**	**F**	0.859	D	0.007	**1.093**	**F**	0.001	no
8 .	PCH/Pier Avenue-14th Street	signal	0.659	B	0.772	C	0.659	B	0.000	0.774	C	0.002	no
9 .	Prospect Avenue/Artesia Blvd	signal	0.575	A	0.681	B	0.576	A	0.001	0.683	B	0.002	no
10 .	Prospect Ave/Aviation Blvd	signal	0.643	B	0.728	C	0.643	B	0.000	0.728	C	0.000	no
11 .	Prospect Ave/Anita Street	signal	0.475	A	0.552	A	0.475	A	0.000	0.554	A	0.002	no
12 .	PCH/16th Street	signal	0.686	B	0.652	B	0.686	B	0.000	0.652	B	0.000	no
13 .	Ocean Drive/Aviation Blvd	signal	0.403	A	0.457	A	0.403	A	0.000	0.457	A	0.000	no
14 .	Valley Drive/Pier Avenue	all-way stop	12.4 sec	B	20.4 sec	C	12.5 sec	B	--	20.6 sec	C	--	no
15 .	Ardmore Avenue/Pier Avenue	all-way stop	12.3 sec	B	17.3 sec	C	12.3 sec	B	--	17.4 sec	C	--	no
16 .	Valley Drive/11th Street	all-way stop	7.8 sec	A	9.2 sec	A	7.9 sec	A	--	9.2 sec	A	--	no
17 .	Valley Drive/11th Place	1-way stop	9.7 sec	A	11.1 sec	B	9.8 sec	A	--	11.1 sec	B	--	no
18 .	Valley Drive/18th Street	all-way stop	9.3 sec	A	12.0 sec	B	9.4 sec	A	--	12 sec	B	--	no
19 .	Valley Drive/2nd Street	all-way stop	8.7 sec	A	11.1 sec	B	8.7 sec	A	--	11.2 sec	B	--	no
20 .	Valley Drive/6th Street	all-way stop	8.0 sec	A	9.4 sec	A	8.0 sec	A	--	9.5 sec	A	--	no
21 .	Valley Drive/Herondo Street	all-way stop	11.0 sec	B	15.8 sec	C	11.0 sec	B	--	15.9 sec	C	--	no
22 .	Flagler Ln/Anita St-190th St	all-way stop	32.2 sec	D	30.8 sec	D	32.9 sec	D	--	31.2 sec	D	--	no
23 .	Blossom Lane-Beryl St/190th St	2-way stop	**141.8 sec**	**F**	**669.9 sec**	**F**	**145.5 sec**	**F**	--	**691.9 sec**	**F**	--	no
24 .	Meyer Ln-Entradero Ave/190th St	signal	0.839	D	0.684	B	0.839	D	0.000	0.686	B	0.002	no
25 .	Anza Avenue/190th Street	signal	0.842	D	0.738	C	0.842	D	0.000	0.740	C	0.002	no
26 .	Inglewood Ave/190th St	signal	**1.109**	**F**	**1.195**	**F**	**1.112**	**F**	0.003	**1.195**	**F**	**0.000**	no
27 .	Firmona Avenue/190th St	2-way stop	**300.7 sec**	**F**	**194.2 sec**	**F**	**309.9 sec**	**F**	--	**196.9 sec**	**F**	--	no
28 .	Hawthorne Blvd/190th St	signal	**0.908**	**E**	**0.918**	**E**	**0.908**	**E**	0.000	**0.918**	**E**	0.000	no
29 .	Prairie Avenue/190th St	signal	0.877	D	**0.980**	**E**	0.877	D	0.000	**0.980**	**E**	0.000	no
30 .	Crenshaw Blvd/190th St	signal	**0.904**	**E**	0.877	D	**0.904**	**E**	0.000	0.879	D	0.002	no
31 .	Western Avenue/190th St	signal	0.769	C	0.787	C	0.769	C	0.000	0.787	C	0.000	no
32 .	I-405 NB ramps/Artesia Blvd	signal	0.539	A	0.872	D	0.540	A	0.001	0.872	D	0.000	no
33 .	I-405 SB ramps/Artesia Blvd	1-way stop	11.0 sec	B	24.5 sec	C	11.0 sec	B	--	24.5 sec	C	--	no
34 .	Prairie Avenue/Artesia Blvd	signal	**0.955**	**E**	0.877	D	**0.955**	**E**	0.000	0.879	D	0.002	no
35 .	I-405 NB ramps/182nd St	signal	0.693	B	0.890	D	0.695	B	0.002	0.891	D	0.001	no
36 .	I-405 SB ramps/Crenshaw Blvd	signal	**1.025**	**F**	0.818	D	**1.027**	**F**	0.002	0.820	D	0.002	no
37 .	Crenshaw Blvd/182nd St	signal	0.861	D	**0.931**	**E**	0.862	D	0.001	**0.931**	**E**	0.000	no
38 .	Hermosa Ave-Harbor Dr/Herondo St	signal	0.490	A	0.473	A	0.490	A	0.000	0.473	A	0.000	no
39 .	PCH/Catalina Ave	signal	0.823	D	0.876	D	0.824	D	0.001	0.877	D	0.001	no
40 .	PCH/Irena Avenue	signal	0.676	B	0.790	C	0.676	B	0.000	0.791	C	0.001	no
41 .	PCH/Beryl Street	signal	0.753	C	0.884	D	0.753	C	0.000	0.885	D	0.001	no
42 .	Prospect Ave/Beryl Street	signal	0.515	A	0.592	A	0.516	A	0.001	0.593	A	0.001	no
43 .	Harkness Lane/Beryl Street	all-way stop	9.9 sec	A	12.9 sec	B	9.9 sec	A	--	12.9 sec	B	--	no
44 .	Flagler Lane/Beryl Street	all-way stop	11.1 sec	B	14.0 sec	B	11.1 sec	B	--	14 sec	B	--	no

Notes: Signalized intersections analyzed with the *Intersection Capacity Utilization* (ICU) methodology which provides LOS in terms of volume-to-capacity (V/C) ratios.

Unsignalized intesections analyzed with Highway Capacity Manual (HCM) methodology which provideds LOS in terms of average control delay for entire intersection (for all-way stop control), or for critical movement (for 1- or 2-way stop control).

BOLD - Indicates intersection would operate with unsatisfactory LOS (LOS E or LOS F).

BOLD - Indicates intesection would be signficantly impacted by the proposed project.

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Table C - Year 2015 plus Construction Phase 2 Intersection Level of Service Summary

			Year 2015 Baseline				Year 2015 plus Construction Phase 2						
			AM Peak Hour		PM Peak Hour		AM Peak Hour			PM Peak Hour			
	Intersection	Control	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	Change	V/C or Delay	LOS	Change	Impact?
1 .	PCH/Artesia Boulevard	signal	**1.256**	**F**	0.823	D	**1.256**	**F**	0.000	0.826	D	0.003	no
2 .	PCH/21st Street	signal	0.725	C	0.677	B	0.725	C	0.000	0.677	B	0.000	no
3 .	PCH/Aviation Boulevard	signal	**1.132**	**F**	**1.112**	**F**	**1.135**	**F**	0.003	**1.113**	**F**	0.001	no
4 .	PCH/8th Street	signal	0.852	D	**1.055**	**F**	0.855	D	0.003	**1.056**	**F**	0.001	no
5 .	PCH/5th Street	signal	0.804	D	0.744	C	0.807	D	0.003	0.744	C	0.000	no
6 .	PCH/2nd Street	signal	0.753	C	0.776	C	0.756	C	0.003	0.778	C	0.002	no
7 .	PCH/Herondo Ave-Anita St	signal	0.852	D	**1.092**	**F**	0.865	D	0.013	**1.094**	**F**	0.002	no
8 .	PCH/Pier Avenue-14th Street	signal	0.659	B	0.772	C	0.659	B	0.000	0.775	C	0.003	no
9 .	Prospect Avenue/Artesia Blvd	signal	0.575	A	0.681	B	0.578	A	0.003	0.685	B	0.004	no
10 .	Prospect Ave/Aviation Blvd	signal	0.643	B	0.728	C	0.643	B	0.000	0.728	C	0.000	no
11 .	Prospect Ave/Anita Street	signal	0.475	A	0.552	A	0.480	A	0.005	0.557	A	0.005	no
12 .	PCH/16th Street	signal	0.686	B	0.652	B	0.686	B	0.000	0.652	B	0.000	no
13 .	Ocean Drive/Aviation Blvd	signal	0.403	A	0.457	A	0.403	A	0.000	0.457	A	0.000	no
14 .	Valley Drive/Pier Avenue	all-way stop	12.4 sec	B	20.4 sec	C	12.7 sec	B	--	20.8 sec	C	--	no
15 .	Ardmore Avenue/Pier Avenue	all-way stop	12.3 sec	B	17.3 sec	C	12.4 sec	B	--	17.5 sec	C	--	no
16 .	Valley Drive/11th Street	all-way stop	7.8 sec	A	9.2 sec	A	7.9 sec	A	--	9.2 sec	A	--	no
17 .	Valley Drive/11th Place	1-way stop	9.7 sec	A	11.1 sec	B	9.8 sec	A	--	11.2 sec	B	--	no
18 .	Valley Drive/18th Street	all-way stop	9.3 sec	A	12.0 sec	B	9.5 sec	A	--	12.1 sec	B	--	no
19 .	Valley Drive/2nd Street	all-way stop	8.7 sec	A	11.1 sec	B	8.7 sec	A	--	11.5 sec	B	--	no
20 .	Valley Drive/6th Street	all-way stop	8.0 sec	A	9.4 sec	A	8.0 sec	A	--	9.6 sec	A	--	no
21 .	Valley Drive/Herondo Street	all-way stop	11.0 sec	B	15.8 sec	C	11.0 sec	B	--	16 sec	C	--	no
22 .	Flagler Ln/Anita St-190th St	all-way stop	32.2 sec	D	30.8 sec	D	33.6 sec	D	--	31.7 sec	D	--	no
23 .	Blossom Lane-Beryl St/190th St	2-way stop	**141.8 sec**	**F**	**669.9 sec**	**F**	**149.7 sec**	**F**	--	**714.7 sec**	**F**	--	no
24 .	Meyer Ln-Entradero Ave/190th St	signal	0.839	D	0.684	B	0.839	D	0.000	0.689	B	0.005	no
25 .	Anza Avenue/190th Street	signal	0.842	D	0.738	C	0.842	D	0.000	0.743	C	0.005	no
26 .	Inglewood Ave/190th St	signal	**1.109**	**F**	**1.195**	**F**	**1.114**	**F**	0.005	**1.195**	**F**	**0.000**	no
27 .	Firmona Avenue/190th St	2-way stop	**300.7 sec**	**F**	**194.2 sec**	**F**	**318.3 sec**	**F**	--	**200.1 sec**	**F**	--	no
28 .	Hawthorne Blvd/190th St	signal	**0.908**	**E**	**0.918**	**E**	**0.909**	**E**	0.001	**0.919**	**E**	0.001	no
29 .	Prairie Avenue/190th St	signal	0.877	D	**0.980**	**E**	0.878	D	0.001	**0.980**	**E**	0.000	no
30 .	Crenshaw Blvd/190th St	signal	**0.904**	**E**	0.877	D	**0.904**	**E**	0.000	0.881	D	0.004	no
31 .	Western Avenue/190th St	signal	0.769	C	0.787	C	0.769	C	0.000	0.787	C	0.000	no
32 .	I-405 NB ramps/Artesia Blvd	signal	0.539	A	0.872	D	0.540	A	0.001	0.872	D	0.000	no
33 .	I-405 SB ramps/Artesia Blvd	1-way stop	11.0 sec	B	24.5 sec	C	11.0 sec	B	--	24.5 sec	C	--	no
34 .	Prairie Avenue/Artesia Blvd	signal	**0.955**	**E**	0.877	D	**0.955**	**E**	0.000	0.881	D	0.004	no
35 .	I-405 NB ramps/182nd St	signal	0.693	B	0.890	D	0.696	B	0.003	0.892	D	0.002	no
36 .	I-405 SB ramps/Crenshaw Blvd	signal	**1.025**	**F**	0.818	D	**1.029**	**F**	0.004	0.822	D	0.004	no
37 .	Crenshaw Blvd/182nd St	signal	0.861	D	**0.931**	**E**	0.863	D	0.002	**0.931**	**E**	0.000	no
38 .	Hermosa Ave-Harbor Dr/Herondo St	signal	0.490	A	0.473	A	0.490	A	0.000	0.473	A	0.000	no
39 .	PCH/Catalina Ave	signal	0.823	D	0.876	D	0.824	D	0.001	0.877	D	0.001	no
40 .	PCH/Irena Avenue	signal	0.676	B	0.790	C	0.676	B	0.000	0.791	C	0.001	no
41 .	PCH/Beryl Street	signal	0.753	C	0.884	D	0.753	C	0.000	0.885	D	0.001	no
42 .	Prospect Ave/Beryl Street	signal	0.515	A	0.592	A	0.516	A	0.001	0.593	A	0.001	no
43 .	Harkness Lane/Beryl Street	all-way stop	9.9 sec	A	12.9 sec	B	9.9 sec	A	--	12.9 sec	B	--	no
44 .	Flagler Lane/Beryl Street	all-way stop	11.1 sec	B	14 sec	B	11.1 sec	B	--	14 sec	B	--	no

Notes: Signalized intersections analyzed with the *Intersection Capacity Utilization* (ICU) methodology which provides LOS in terms of volume-to-capacity (V/C) ratios.
Unsignalized intesections analyzed with Highway Capacity Manual (HCM) methodology which provideds LOS in terms of average control delay for entire intersection (for all-way stop control), or for critical movement (for 1- or 2-way stop control).

BOLD - Indicates intersection would operate with unsatisfactory LOS (LOS E or LOS F).

BOLD - Indicates intesection would be signficantly impacted by the proposed project.

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Table D - Year 2016 plus Construction Phase 3 Intersection Level of Service Summary

			Year 2016 Baseline				Year 2016 plus Construction Phase 3						
			AM Peak Hour		PM Peak Hour		AM Peak Hour			PM Peak Hour			
	Intersection	Control	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	Change	V/C or Delay	LOS	Change	Impact?
1 .	PCH/Artesia Boulevard	signal	**1.259**	**F**	0.829	D	**1.259**	**F**	0.000	0.833	D	0.004	no
2 .	PCH/21st Street	signal	0.726	C	0.678	B	0.726	C	0.000	0.678	B	0.000	no
3 .	PCH/Aviation Boulevard	signal	**1.135**	**F**	**1.119**	**F**	**1.139**	**F**	0.004	**1.121**	**F**	0.002	no
4 .	PCH/8th Street	signal	0.854	D	**1.057**	**F**	0.857	D	0.003	**1.059**	**F**	0.002	no
5 .	PCH/5th Street	signal	0.806	D	0.745	C	0.809	D	0.003	0.745	C	0.000	no
6 .	PCH/2nd Street	signal	0.755	C	0.778	C	0.758	C	0.003	0.782	C	0.004	no
7 .	PCH/Herondo Ave-Anita St	signal	0.854	D	**1.095**	**F**	0.874	D	0.020	**1.096**	**F**	0.001	no
8 .	PCH/Pier Avenue-14th Street	signal	0.661	B	0.774	C	0.661	B	0.000	0.780	C	0.006	no
9 .	Prospect Avenue/Artesia Blvd	signal	0.576	A	0.683	B	0.584	A	0.008	0.691	B	0.008	no
10 .	Prospect Ave/Aviation Blvd	signal	0.645	B	0.729	C	0.645	B	0.000	0.730	C	0.001	no
11 .	Prospect Ave/Anita Street	signal	0.476	A	0.553	A	0.484	A	0.008	0.562	A	0.009	no
12 .	PCH/16th Street	signal	0.688	B	0.653	B	0.688	B	0.000	0.653	B	0.000	no
13 .	Ocean Drive/Aviation Blvd	signal	0.403	A	0.458	A	0.403	A	0.000	0.458	A	0.000	no
14 .	Valley Drive/Pier Avenue	all-way stop	12.4 sec	B	20.5 sec	C	12.9 sec	B	--	21.4 sec	C	--	no
15 .	Ardmore Avenue/Pier Avenue	all-way stop	12.3 sec	B	17.4 sec	C	12.5 sec	B	--	17.8 sec	C	--	no
16 .	Valley Drive/11th Street	all-way stop	7.8 sec	A	9.2 sec	A	8.0 sec	A	--	9.3 sec	A	--	no
17 .	Valley Drive/11th Place	1-way stop	9.7 sec	A	11.1 sec	B	9.9 sec	A	--	11.2 sec	B	--	no
18 .	Valley Drive/18th Street	all-way stop	9.3 sec	A	12.0 sec	B	9.7 sec	A	--	12.3 sec	B	--	no
19 .	Valley Drive/2nd Street	all-way stop	8.7 sec	A	11.1 sec	B	8.7 sec	A	--	11.7 sec	B	--	no
20 .	Valley Drive/6th Street	all-way stop	8.0 sec	A	9.4 sec	A	8.1 sec	A	--	9.7 sec	A	--	no
21 .	Valley Drive/Herondo Street	all-way stop	11.0 sec	B	15.8 sec	C	11.0 sec	B	--	16.1 sec	C	--	no
22 .	Flagler Ln/Anita St-190th St	all-way stop	32.6 sec	D	31.1 sec	D	34.8 sec	D	--	32.6 sec	D	--	no
23 .	Blossom Lane-Beryl St/190th St	2-way stop	**146.1 sec**	**F**	**690.3 sec**	**F**	**158.9 sec**	**F**	--	**767.8 sec**	**F**	--	no
24 .	Meyer Ln-Entradero Ave/190th St	signal	0.841	D	0.685	B	0.841	D	0.000	0.694	B	0.009	no
25 .	Anza Avenue/190th Street	signal	0.844	D	0.740	C	0.844	D	0.000	0.747	C	0.007	no
26 .	Inglewood Ave/190th St	signal	**1.111**	**F**	**1.198**	**F**	**1.120**	**F**	0.009	**1.198**	**F**	**0.000**	no
27 .	Firmona Avenue/190th St	2-way stop	**307.0 sec**	**F**	**198.3 sec**	**F**	**334.7 sec**	**F**	--	**207.6**	**F**	--	no
28 .	Hawthorne Blvd/190th St	signal	**0.910**	**E**	0.920	E	**0.911**	**E**	0.001	**0.922**	**E**	0.002	no
29 .	Prairie Avenue/190th St	signal	0.859	D	**0.982**	**E**	0.860	D	0.001	**0.982**	**E**	0.000	no
30 .	Crenshaw Blvd/190th St	signal	**0.906**	**E**	0.879	D	**0.906**	**E**	0.000	0.885	D	0.006	no
31 .	Western Avenue/190th St	signal	0.770	C	0.778	C	0.771	C	0.001	0.788	C	0.010	no
32 .	I-405 NB ramps/Artesia Blvd	signal	0.540	A	0.874	D	0.542	A	0.002	0.875	D	0.001	no
33 .	I-405 SB ramps/Artesia Blvd	1-way stop	11.1 sec	B	24.7 sec	C	11.1 sec	B	--	24.8	C	--	no
34 .	Prairie Avenue/Artesia Blvd	signal	**0.957**	**E**	0.879	D	**0.957**	**E**	0.000	0.888	D	0.009	no
35 .	I-405 NB ramps/182nd St	signal	0.695	B	0.892	D	0.699	B	0.004	0.894	D	0.002	no
36 .	I-405 SB ramps/Crenshaw Blvd	signal	**1.028**	**F**	0.819	D	**1.032**	**F**	0.004	0.826	D	0.007	no
37 .	Crenshaw Blvd/182nd St	signal	0.863	D	**0.933**	**E**	0.867	D	0.004	**0.933**	**E**	0.000	no
38 .	Hermosa Ave-Harbor Dr/Herondo St	signal	0.491	A	0.474	A	0.491	A	0.000	0.474	A	0.000	no
39 .	PCH/Catalina Ave	signal	0.825	D	0.878	D	0.826	D	0.001	0.879	D	0.001	no
40 .	PCH/Irena Avenue	signal	0.678	B	0.792	C	0.678	B	0.000	0.793	C	0.001	no
41 .	PCH/Beryl Street	signal	0.755	C	0.886	D	0.756	C	0.001	0.887	D	0.001	no
42 .	Prospect Ave/Beryl Street	signal	0.516	A	0.594	A	0.517	A	0.001	0.594	A	0.000	no
43 .	Harkness Lane/Beryl Street	all-way stop	9.9 sec	A	12.9 sec	B	9.9 sec	A	--	12.9	B	--	no
44 .	Flagler Lane/Beryl Street	all-way stop	11.1 sec	B	14.0 sec	B	11.1 sec	B	--	14.0	B	--	no

Notes: Signalized intersections analyzed with the *Intersection Capacity Utilization* (ICU) methodology which provides LOS in terms of volume-to-capacity (V/C) ratios.

Unsignalized intesections analyzed with Highway Capacity Manual (HCM) methodology which provideds LOS in terms of average control delay for entire intersection (for all-way stop control), or for critical movement (for 1- or 2-way stop control).

BOLD - Indicates intersection would operate with unsatisfactory LOS (LOS E or LOS F).

BOLD - Indicates intesection would be signficantly impacted by the proposed project.