AIR QUALITY ASSESSMENT

NLP VALLEY CENTER SOLAR
PDS2013-MUP-13-019
ENVIRONMENTAL LOG NO. 13-02-002

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EXECUTIVE SUMMARY

This air quality analysis has been completed to determine air quality impacts, which may be associated with the construction of the proposed approximate 2.5 Megawatt (MW) solar project. The project site is generally located within the northeastern area of the County of San Diego. The proposed project would consist of solar generation facilities on two individual parcels of land with no additional lands affected to allow for the transport of power generated.

The project proposes to grub and grade the site and move roughly 6,000 Cubic Yards (CY) of soil and then begin installing the photovoltaic arrays. All phases of the proposed project are anticipated to be completed by fall of 2016.

During construction, the proposed project will produce fugitive dust and diesel particulate matter, Reactive Organic Gases, Oxides of Nitrogen, Carbon Monoxide and Sulfur Dioxide, however, no construction impacts would be expected. As a design feature however, the project applicant will add roughly 1,700 CY of crushed rock on internal fire access roads and will serve as an all-weather pavement.

The project applicant estimates that the project site will be visited no more than 48 times per year; however, the analysis within this report includes an additional 375 trips for a worst-case panel cleaning scenario as well. Each Site visit would range from a cleaning and maintenance crew to San Diego Gas and Electric (SDG&E) site visits. On average the project is expected to generate 567 trips per year with a maximum daily trip generation not to exceed 25 trips. For purposes of analysis, a worst case trip estimate of 30 miles was assumed. Based on computer modeling using CalEEMod, no significant impacts were found.

Operations of the proposed Project would involve washing the panels and various maintenance activities onsite. These operations would generate dust from onsite service roads, however, these operational emissions would not exceed county standards. It should be noted that the Project design includes the installation of decomposed granite rock on the interior fire access roads. This design feature would further reduce dust.

Cumulative impacts are not expected due to the fact that the nearest identified cumulative project is over 1,500 meters from the project site.

The proposed Project is designed to create a renewable energy source with an agreement with SDG&E which could ultimately reduce ozone precursors offsite given generation from carbon based fuels could potentially be offset during operations of the proposed Project. Given this, the Project would be expected to comply with the County's Regional Air Quality Strategy (RAQS).

Greenhouse Gas (GHG) emissions from operations and amortized construction would generate 41.81 MT per year which is less that the County's 900 Metric Tons (MT) screening threshold. Given this, less than significant impacts are expected. Furthermore, since the Project would be installing approximately 2.5 MW of solar power, the Project could potentially offset equivalent combustion source GHGs by 1,305.97 MT per year.

A Summary of the design measures are as follows:

AQ DM1: As a condition to this project, the project applicant will add roughly 1,700 CY of crushed rock on internal fire access roads and which will serve as an all-weather pavement and reduce any potential dust generated during maintenance activities.

AQ DM2: To avoid hauling water the project would use an onsite water connection for all watering and maintenance activities.

AQ DM3: As a condition to the project, the project would spray long lasting soil binders such as around panels or exposed areas once per year or as needed to prevent onsite dust. The County will require this to be included in the project design operation and maintenance manuals.

AQ DM4: As a condition of the project, the project applicant shall comply with SEC. 87.428 of the County of San Diego's Grading Ordinance. This shall be included on all design documents.

AQ DM5: As a condition of the project, all diesel equipment in excess of 50 HP shall be Tier II or better and shall have diesel particulate filters attached inline to the exhaust system.

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this Air Quality study is to determine potential air quality impacts (if any) that may be created during the construction of the proposed Photovoltaic (PV) Solar Project which would be constructed in the town of Valley Center in eastern San Diego County. Should impacts be determined, the intent of this study would be to recommend suitable mitigation measures, which would reduce those impacts. Daily operations of the project will be primarily from maintenance and worker trips, although some emissions are expected, they would be minimal and below the screening level thresholds within the San Diego County Guidelines for Determining Significance for Air Quality (2007).

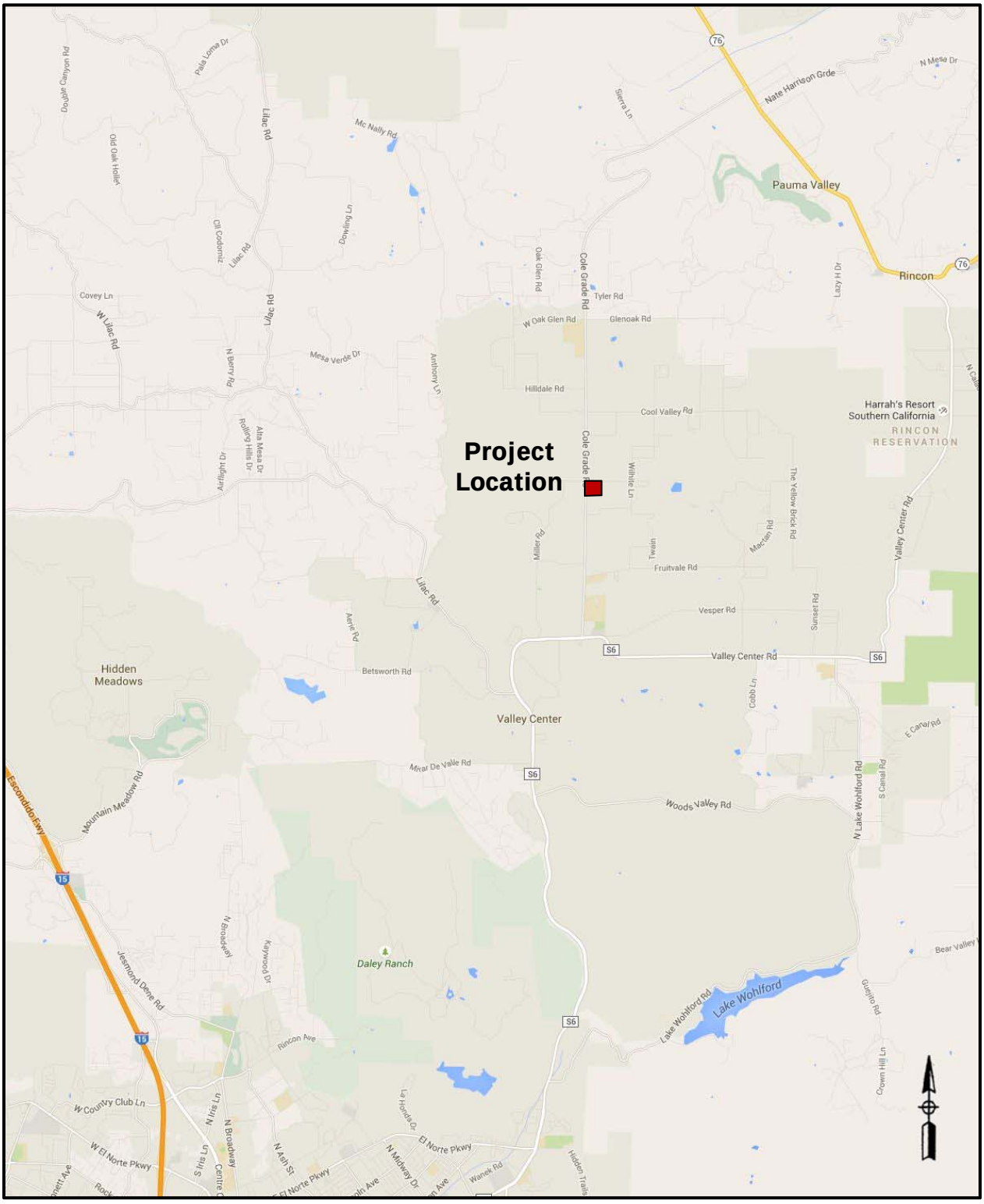
1.2 Project Location

The proposed North Light Power (NLP) Valley Center Solar Project (proposed "Project") site is located in the community of Valley Center, California in north-central San Diego County. The subject site is located at 29471 Cole Grade Road and is bordered by Cole Grade Road to the west; Via Valencia extends eastward from Cole Grade Road. The property is comprised of two separate parcels which include County Assessor Parcel Numbers (APNs) 188-120-09 and, -10, totaling approximately 66 acres. A general project vicinity map is shown in Figure 1–A below.

1.3 Project Description

The Project requires approval from the County of San Diego for a Major Use Permit (MUP) for the construction, operation, and maintenance of an unmanned PV Solar facility for the long-term generation of solar-generated energy. The proposed approximate 26-acre PV solar facility will encompass a portion of the approximate 66-acre property to achieve the intended megawatt (MW) output. The Project design will consist of PV solar panels mounted on a collection of single-axis tracking (SAT) systems. The single axis system proposes solar panels aligned in rows that rotate to face east in the morning and west in the afternoon hours, tracking the sun about a north/south axis to maximize solar absorption. The project will require a balanced cut and fill grading quantity of 6,000 cubic yards.

Figure 1-A: Project Vicinity Map



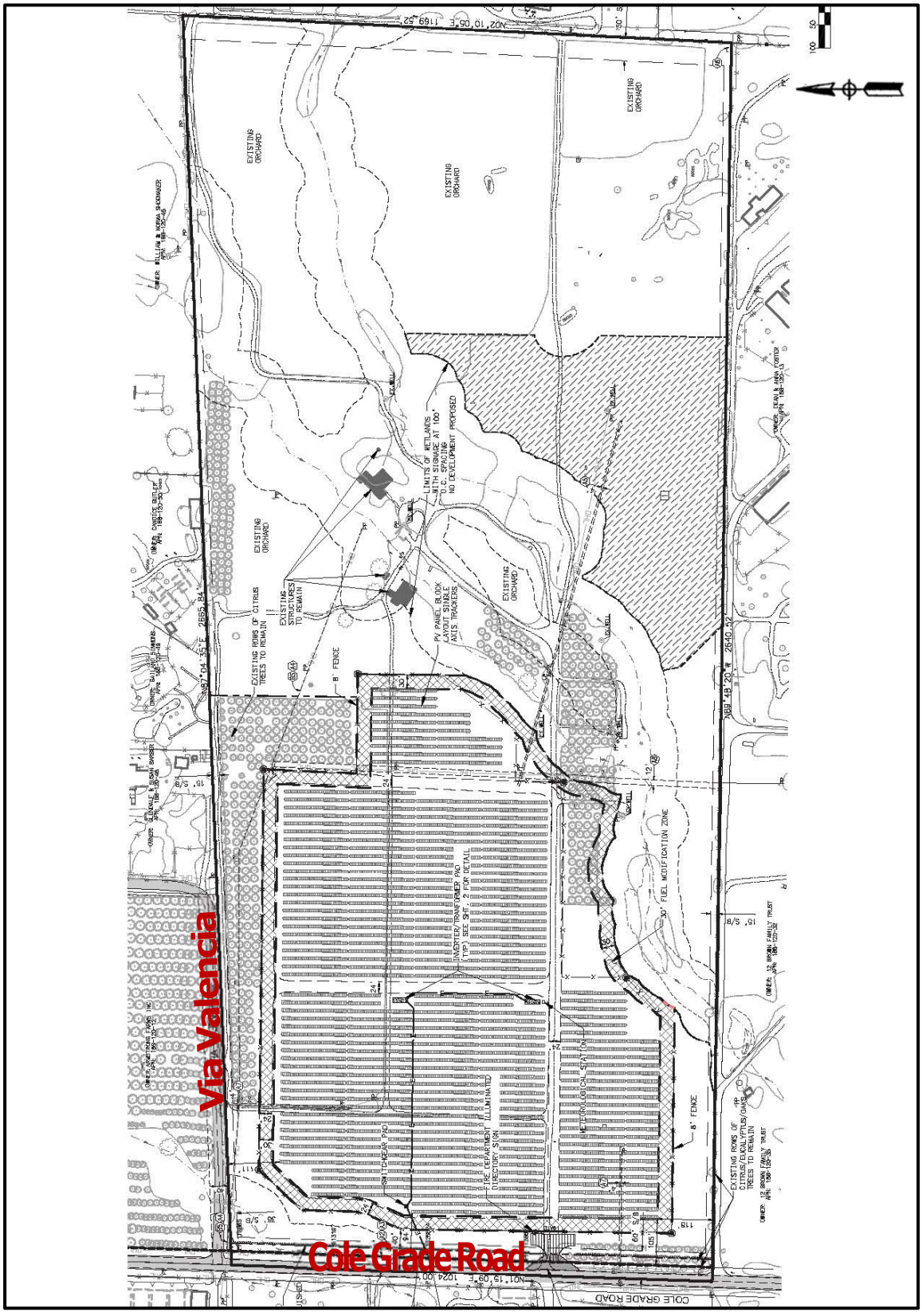
Source: (Google 2015, n.d.)

As a design feature, the Project would include all weather paving and apply roughly 1,700 CY of Class 2 base for all internal fire access roads. The point of interconnection (POI) for transmission purposes will occur at an existing utility pole within the Cole Grade Road right-of-way (ROW) adjacent to the Project boundary. It should be noted that no offsite roadway or gen-tie improvements are required. Permanent access to the site will be from Cole Grade Road. Furthermore, the project would use an onsite water connection for all watering and maintenance activities.

The facilities would be operated and monitored remotely by San Diego Gas & Electric (SDG&E). Maintenance of the facilities would require occasional visual inspections and minor repairs and is assumed to generate 4 trips for 48 days per year. The project would require a contractor to come out and clean the panels at a frequency not greater than once per year. The analysis within this report includes an additional 375 trips for a worst-case panel cleaning scenario as well. It's assumed that this work would not require more than 25 trips per day for no more than 15 days. Given this, the project could generate a maximum of 567 trips per year with a maximum worst-case daily trip generation of 25 trips. Based on this and a 30 mile trip assumption, the project would generate 17,010 VMT per year.

The ultimate arrangement/number of PV solar panels, racking, inverter pads and structures, and internal access driveways are shown on the MUP Plot Plan to illustrate the general configuration of the proposed solar collection system; however, this layout is subject to modification at final engineering design. The project site configuration and layout is provided in Figure 1-B on the following page.

Figure 1-B: Overall Project Layout



2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Existing Setting

The subject property currently supports agricultural land (citrus grove). Many of the citrus trees have previously been removed from the property, and the land is generally devoid of vegetation. The site is generally flat, and onsite elevations range from approximately 1,465 feet above mean sea level (AMSL) to 1,530 feet AMSL. Several small structures and infrastructure supporting the former agricultural uses (e.g. house and storage sheds, etc.) are located east of the proposed PV facility and will remain in place. The project site is mostly surrounded by residential and agricultural land consisting of agricultural groves. The closest residential receptor to the site is roughly 60 meters (197 feet) from the project centroid.

2.2 Climate and Meteorology

Climate within the San Diego Air Basin (SDAB) area varies dramatically over short geographical distances due to size and topography. Most of southern California is dominated by high-pressure systems for much of the year, which keeps the high desert mostly sunny and warm. Typically, during the winter months, the high pressure system drops to the south and brings cooler, moister weather from the north. Prevailing winds are generally westerly flowing towards the east for most of the year; however, during the autumn and winter, it is common for strong warm dry winds originating in the desert having a more easterly flow characteristic.

It is common for inversion layers to develop within high-pressure areas, which mostly define pressure patterns over the SDAB. These inversions are caused when a thin layer of the atmosphere increases in temperature with height. An inversion acts like a lid preventing vertical mixing of air through convective overturning. Average temperatures in Valley Center range from about 54 degrees in the winter to over 74 in summer and annual rainfall is just over 14 inches per year (City-Data, 2015).

2.3 Regulatory Standards

2.3.1 Federal Standards and Definitions

The Federal Air Quality Standards were developed per the requirements of The Federal Clean Air Act, which is a federal law that was passed in 1970 and further

amended in 1990. This law provides the basis for the national air pollution control effort. An important element of the act included the development of national ambient air quality standards (NAAQS) for major air pollutants.

The Clean Air Act established two types of air quality standards otherwise known as primary and secondary standards. ***Primary Standards*** set limits for the intention of protecting public health, which includes sensitive populations such as people with asthma, children and the elderly. ***Secondary Standards*** set limits to protect public welfare to include protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards for principal pollutants, which are called "criteria" pollutants. These pollutants are defined below:

1. ***Carbon Monoxide (CO):*** *is a colorless, odorless, and tasteless gas and is produced from the partial combustion of carbon-containing compounds, notably in internal-combustion engines. Carbon monoxide usually forms when there is a reduced availability of oxygen present during the combustion process. Exposure to CO near the levels of the ambient air quality standards can lead to fatigue, headaches, confusion, and dizziness. CO interferes with the blood's ability to carry oxygen.*
2. ***Lead (Pb):*** *is a potent neurotoxin that accumulates in soft tissues and bone over time. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Because lead is only slowly excreted, exposures to small amounts of lead from a variety of sources can accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient air quality standard include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms can include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children.*
3. ***Nitrogen Dioxide (NO_2):*** *is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract and is one of the nitrogen oxides emitted from high-temperature combustion, such as those occurring in trucks, cars, power plants, home heaters, and gas stoves. In the presence of other air contaminants, NO_2 is usually visible as a reddish-brown air layer over urban areas. NO_2 along with other traffic-related pollutants is associated with respiratory symptoms, respiratory illness and respiratory impairment. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO_2 above the level of the current state air quality standard. Clinical studies of human subjects suggest that NO_2 exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children.*
4. ***Particulate Matter (PM_{10} or $PM_{2.5}$):*** *is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary in shape, size and chemical composition, and can be made up of multiple materials such as metal, soot, soil, and dust. PM_{10}*

particles are 10 microns (µm) or less and $PM_{2.5}$ particles are 2.5 (µm) or less. These particles can contribute significantly to regional haze and reduction of visibility in California. Exposure to PM levels exceeding current air quality standards increases the risk of allergies such as asthma and respiratory illness.

5. ***Ozone (O_3)**: is a highly oxidative unstable gas capable of damaging the linings of the respiratory tract. This pollutant forms in the atmosphere through reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Exposure to ozone above ambient air quality standards can lead to human health effects such as lung inflammation, tissue damage and impaired lung functioning. Ozone can also damage materials such as rubber, fabrics and plastics.*
6. ***Sulfur Dioxide (SO_2)**: is a gaseous compound of sulfur and oxygen and is formed when sulfur-containing fuel is burned by mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Effects from SO_2 exposures at levels near the one-hour standard include bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most susceptible to these symptoms. Continued exposure at elevated levels of SO_2 results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.*

2.3.2 State Standards and Definitions

The State of California Air Resources Board (CARB) sets the laws and regulations for air quality at the state level. The California Ambient Air Quality Standards (CAAQS) are either the same as or generally more restrictive then the NAAQS and also regulate four additional contaminants. Table 2.1 on the following page identifies both the NAAQS and CAAQS. Additional contaminants as regulated by the CAAQS are defined below.

1. ***Visibility Reducing Particles**: Particles in the Air that obstruct the visibility.*
2. ***Sulfates**: are salts of Sulfuric Acid. Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. They increase the acidity of the atmosphere and form acid rain.*
3. ***Hydrogen Sulfide (H_2S)**: is a colorless, toxic and flammable gas with a recognizable smell of rotten eggs or flatulence. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. Usually, H_2S is formed from bacterial breakdown of organic matter. Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulfide (greater than 500 ppm) can cause a loss of consciousness and possibly death.*
4. ***Vinyl Chloride:** also known as chloroethene and is a toxic, carcinogenic, colorless gas with a sweet odor. It is an industrial chemical mainly used to produce its polymer, polyvinyl chloride (PVC).*

Table 2.1: Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	**Average Time**	**California Standards[1]**		**Federal Standards[2]**		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m3)		0.075 ppm (147 µg/m3)		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m3	Gravimetric or Beta Attenuation	150 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m3		-		
Fine Particulate Matter PM2.5	24 Hour	No Separate State Standard		35 µg/m3	Same as Primary	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m3	Gravimetric or Beta Attenuation	12 µg/m3	15 µg/m3	
Carbon Monoxide (CO)	8 hour	9.0 ppm (10mg/m3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m3)	-	Non-Dispersive Infrared Photometry
	1 hour	20 ppm (23 mg/m3)		35 ppm (40 mg/m3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m3)		-	-	-
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m3)[8]	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m3)		0.100 ppm[8] (188/ µg/m3)	-	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.30 ppm (for Certain Areas)	-	Ultraviolet Flourescence; Spectrophotometry (Pararoosaniline Method)[9]
	24 Hour	0.04 ppm (105 µg/m3)		0.14 ppm (for Certain Areas) (See Footnote 9)	-	
	3 Hour	-		-	0.5 ppm (1300 µg/m3)	
	1 Hour	0.25 ppm (655 µg/m3)		75 ppb (196 µg/m3)	-	
Lead[10]	30 Day Average	1.5 µg/m3	Atomic Absorption	-		-
	Calendar Quarter	-		1.5 µg/m3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	-		0.15 µg/m3		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more (0.07 -30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape				
Sulfates	24 Hour	25 µg/m3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m3)	Ultraviolet Fluorescence			
Vinyl Chloride[10]	24 Hour	0.01 ppm (26 µg/m3)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing articles, 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 averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration 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 µg/m3 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 U.S. EPA for further clarification and current federal 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 procedure 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 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 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 SO2 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 SO2 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.
10. 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.
11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 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.
12. 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.

Source: California Air Resources Board (6/14/13)

2.3.3 Regional Standards

The State of California has 35 specific air districts, which are each responsible for ensuring that the criteria pollutants are below the NAAQS and CAAQS. Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants are designated as "non-attainment areas" for that pollutant. Currently, there are 18 non-attainment areas for the federal ozone standard, 10 non-attainment areas for the federal PM_{10} standard, and seven non-attainment areas for the federal $PM_{2.5}$ standard in California. The state created the California State Implementation Plan (SIP), which is designed to provide control measures needed for California Air basins to attain ambient air quality standards.

The San Diego Air Pollution Control District (SDAPCD) is the government agency which regulates sources of air pollution within San Diego County. The SDAPCD developed a Regional Air Quality Strategy (RAQS) to provide control measures to achieve attainment status. Currently, San Diego is in "non-attainment" status for federal O_3 and the State PM_{10} and $PM_{2.5}$ standards; however, an attainment plan is only available for O_3. The RAQS was adopted in 1992 and has been updated as recently as 2009 which was the latest update incorporating minor changes to the prior 2004 update.

The RAQS is largely based on population predictions by the San Diego Association of Governments (SANDAG). Projects that produce less growth than predicted by SANDAG would generally conform to the RAQS and projects that create more growth than projected by SANDAG may create a significant impact especially if the project produces unmitigable emission generation in excess of the regional standards. Also the project would be considered a significant impact if the project makes a considerable contribution to a cumulative impact.

The 2009 update to RAQS clarifies and enhances emission reductions by implementing new Volatile Organic Compounds and Nitrous Oxide (VOC and NO_X) reduction measures. The criteria pollutant standards are generally attained when each monitor within the region has had no exceedances during the previous three calendar years. A complete listing of the current attainment status with respect to both federal and state standards for criteria pollutants for San Diego County is shown in Table 2.2 on the following page.

Table 2.2: San Diego County Air Basin Attainment Status by Pollutant

San Diego County Air Basin Attainment Status by Pollutant			
Pollutant	Average Time	California Standards	Federal Standards
Ozone (O_3)	1 Hour	Non-attainment	No Federal Standard
	8 Hour		Basic Non-attainment
Respirable Particulate Matter (PM10)	24 Hour	Non-attainment	Unclassified[1]
	Annual Arithmetic Mean	No State Standard	Unclassified[2]
Fine Particulate Matter PM2.5	24 Hour	No State Standard	Attainment
	Annual Arithmetic Mean	Non-attainment	Attainment
Carbon Monoxide (CO)	8 hour	Attainment	Maintenance Area[3]
	1 hour		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	No State Standard	Attainment
	1 Hour	Attainment	No Federal Standard
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	No State Standard	Attainment
	24 Hour	Attainment	Attainment
	1 Hour	Attainment	No Federal Standard
Lead	30 Day Average	Attainment	No Federal Standard
	Calendar Quarter	No State Standard	Attainment
Visibility Reducing Particles	8 Hour (10AM to 6PM, PST)	Unclassified	No Federal Standard
Sulfates	24 Hour	Attainment	No Federal Standard
Hydrogen Sulfide	1 Hour	Unclassified	No Federal Standard

1. Data reflects status as of January, 2010 (Source: http://www.sdapcd.org/info/facts/attain.pdf).

2. Unclassified; indicates data are not sufficient for determining attainment or nonattainment.

3. Maintenance Area (defined by U.S. Department of Transportation) is any geographic region of the United States previously designated nonattainment pursuant to the CAA Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended.

2.4 California Environmental Quality Act (CEQA) Significance Thresholds

The California Environmental Quality Act Guidelines provide a checklist to identify the significance of air quality impacts. These guidelines are found in Appendix G of the CEQA guidelines and are as follows:

AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

A: Conflict with or obstruct implementation of the San Diego Regional Air Quality Strategy (RAQS) or applicable portions of the State Implementation Plan (SIP)?

B: Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation?

C: Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or State ambient air quality standard (PM_{10}, $PM_{2.5}$ or exceed quantitative thresholds for O_3 precursors, oxides of nitrogen [NO_X] and Volatile Organic Compounds [VOCs])?

D: Expose sensitive receptors (including, but not limited to, residential uses, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations?

E: Create objectionable odors affecting a substantial number of people?

2.5 SDAPCD - Air Quality Impact Assessment Screening Thresholds

The SDAPCD has established thresholds in Rule 20.2 (NON - MAJOR STATIONARY SOURCES) for the preparation of Air Quality Impact Assessments (AQIA) and are for new or modified stationary sources. The County's Guidelines for Determining Significance and Report Format and Content Requirements direct the use of SDAPCD's screening level thresholds in Rule 20.2 for compliance with CEQA as well. The thresholds for VOCs are based on significance thresholds from South Coast Air Quality Management District for the Coachella Valley. Should emissions be found to exceed these thresholds, additional modeling is required to demonstrate that the project's total air quality impacts are below the state and federal ambient air quality standards. These screening thresholds for construction and daily operations are shown in Table 2.3 on the following page.

Non Criteria pollutants such as Hazardous Air Pollutants (HAPs) or Toxic Air Contaminants (TACs) are also regulated by the SDAPCD. Rule 1200 (Toxic Air Contaminants - New Source Review) adopted on June 12, 1996, requires evaluation of potential health risks for any new, relocated, or modified emission unit which may increase emissions of one or more toxic air contaminants. The rule requires that projects that would increase cancer risk to between 1 and 10 in one million need to implement toxics best available control technology (T-BACT) or impose the most effective emission limitation, emission control device or control technique to reduce the cancer risk. At no time shall the project increase the cancer risk to over 10 in one million or a health hazard index (chronic and acute) greater than one. Projects creating cancer risks less than one in one million are not required to implement T-BACT technology.

Table 2.3: Screening Threshold for Criteria Pollutants

Pollutant	Total Emissions (Pounds per Day)
Construction Emissions	
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	100 and 55
Nitrogen Oxide (NO_x)	250
Sulfur Oxide (SO_X)	250
Carbon Monoxide (CO)	550
Volatile Organic Compounds (VOCs)	75
Reactive Organic Gases (ROG) (from SCAQMD)	75
Operational Emissions	
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	100 and 55
Nitrogen Oxide (NO_x)	250
Sulfur Oxide (SO_X)	250
Carbon Monoxide (CO)	550
Lead and Lead Compounds	3.2
Volatile Organic Compounds (VOCs)	75
Reactive Organic Gases (ROG) (from SCAQMD)	75

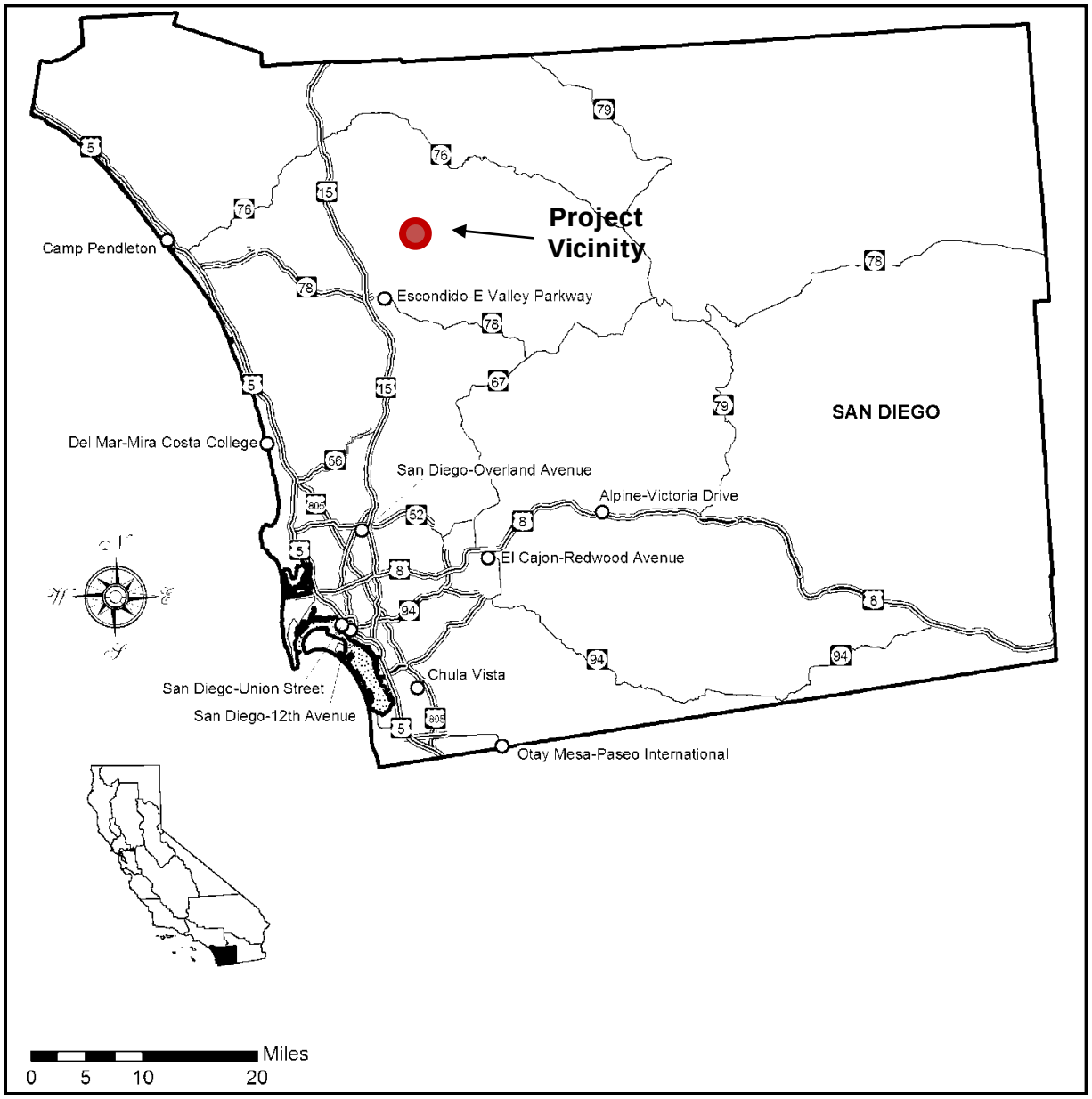
The U.S. Environmental Protection Agency (U.S. EPA) uses the term Volatile Organic Compounds (VOC) and the California Air Resources Board's (CARB's) Emission Inventory Branch (EIB) uses the term Reactive Organic Gases (ROG) to essentially define the same pollutant(s). There are minor deviations between compounds that define each term; however, for purposes of this study it is assumed they are essentially the same due to the fact that SCAQMD interchanges these words and because CalEEMod directly calculates ROG in place of VOC.

2.6 Local Air Quality

Criteria pollutants are measured continuously throughout the SDAB. This data is used to track ambient air quality patterns throughout the County. As mentioned earlier, this data is also used to determine attainment status when compared to the NAAQS and CAAQS.

The SDAPCD is responsible for monitoring and reporting monitoring data. The District operates 10 monitoring sites that collect data on criteria pollutants as shown in Figure 2-A below:

Figure 2-A: Ambient Air Quality Monitoring Stations within SDAB – CARB



Four additional sites collect meteorological data which is used by the District to assist with pollutant forecasting, data analysis and characterization of pollutant transport. SDAPCD published the five-year air quality summary for all of the monitoring stations within the San Diego area air basin (San Diego Air Pollution Control District, 2014). The proposed project is closest to the Escondido monitoring station which is approximately 9.0 miles southwest of the project site. Table 2.4 identifies the criteria pollutants monitored at the aforementioned station.

Table 2.4: Three-Year Ambient Air Quality Summary near the Project Site

Pollutant	Closest Recorded Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2011	2012	2013
O_3 (ppm)	Escondido-E Valley Parkway	1 Hour	0.09 ppm	-	0.10	0.08	0.08
	Escondido-E Valley Parkway	8 Hour	0.070 ppm	0.075 ppm	0.09	0.07	0.07
PM_{10} ($\mu g/m^3$)	Escondido-E Valley Parkway	24 Hour	50 µg/m3	150 µg/m3	40	33	80
	Escondido-E Valley Parkway	Annual Arithmetic Mean	20 µg/m3	50 µg/m3	18.8	18	23.1
PM2.5 ($\mu g/m^3$)	Escondido-E Valley Parkway	24 Hour	-	35 µg/m3	27	71	56.3
	Escondido-E Valley Parkway	Annual Arithmetic Mean	12 µg/m3	12 µg/m3	10.4	10.5	10.5
NO_2 (ppm)	Escondido-E Valley Parkway	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.013	0.012	0.012
	Escondido-E Valley Parkway	1 Hour	0.18 ppm	-	0.062	0.062	0.061
CO (ppm)	Escondido-E Valley Parkway	8 Hour	9 ppm	9 ppm	2.3	3.8	2.6
	Escondido-E Valley Parkway	1 Hour	20 ppm	35 ppm	3.5	4.4	3.2
All ambient emissions reported are assumed to be taken by the air district in compliance with both the NAAQS and CAAQS. Methodologies for those measurements are discussed in Table 2.1 of this report.							

2.7 Greenhouse Gas Significance Thresholds

In January 2015, the County developed the latest recommended approach to addressing climate change in CEQA documents (County of San Diego Planning and Development Services, 1/21/15). In that document the County recommends using screening thresholds published by the California Air Pollution Control Officers Association (CAPCOA) for determining the need for additional analysis and mitigation for GHG-related impacts under CEQA. The guidance states that projects producing less than 900 Metric Tons of GHG gases in CO_2 equivalent would be considered less than significant. Projects exceeding this would require further analysis and potentially mitigation (California Air Pollution Control Officers Association, 2008).

Greenhouse Gasses of concern as analyzed in this study are Carbon Dioxide (CO_2), Methane (CH_4), and Nitrous Oxide (N_2O). To simplify greenhouse gas calculations, both CH_4 and N_2O can be converted to an equivalent amount of CO_2 or CO_2e. CO_2e is calculated by multiplying the calculated levels of CH_4 and N_2O by a Global Warming Potential (GWP). The U.S. Environmental Protection Agency publishes GWPs for various GHGs and reports that the GWP for CH_4 and N_2O is 21 and 310, respectively. This analysis was completed using CO_2e unless otherwise specified.

3.0 METHODOLOGY

3.1 Construction Emissions Calculations

Air Quality impacts related to construction and daily operations were calculated using the latest CalEEMod air quality model, which was developed by ENVIRON International Corporation for South Coast Air Quality Management District (SCAQMD) in 2013. The construction module in CalEEMod is used to calculate the emissions associated with the construction of the project and uses methodologies presented in the US EPA AP-42 document with emphasis on Chapter 11.9. The CalEEMod input/output model is shown in Attachment A to this report.

The latest Health Risk assessment methodologies are presented by the Office Of Environmental Health Hazard Assessment **Invalid source specified.** though are generally intended to address health risks from airborne contaminants released by stationary sources and in some instances is also used for construction too.

OEHHA recommends that an exposure duration (residency time) of 30 years be used to estimate individual cancer risk for the Maximally Exposed Individual Resident (MEIR). OEHHA also recommends that the 30-year exposure duration be used as the basis for public notification and risk reduction audits and plans. Exposure durations of 9-years and 70-years are also recommended to be evaluated for the MEIR to show the range of cancer risk based on residency periods. If a facility is notifying the public regarding cancer risk, the 9-and 70-year cancer risk estimates are useful for people who have resided in their current residence for periods shorter and longer than 30 years.

Non-Cancer risks or risks defined as chronic or acute are also known with respect to DPM and are determined by the hazard index. To calculate hazard index, DPM concentration is divided by its Reference Exposure Levels (REL). Where the total equals or exceeds one, a health hazard is presumed to exist. RELs are published by the Office of Environmental Health Hazard Assessment (OEHHA, 2014). Diesel Exhaust has a REL of 5 $\mu g/m^3$ and targets the respiratory system.

3.2 Construction Assumptions

The Project will complete rough grading in approximately one month, which would include all grubbing and grading required to prepare the site for the construction of the solar panel arrays. It is expected that approximately 6,000 CY of balanced earthwork is required. Additionally, an import of 1,700 CY of rock or decomposed granite is required for onsite fire access roads. Trenching and construction of the PV System would then begin. Finally, the installation of the photovoltaic system would be expected to be completed in just over four months. The total construction would be expected to be completed in approximately 150 calendar days. Table 3.1 shows the proposed durations. Worker and Vendor trips were estimated by CalEEMod and manually adjusted to a trip distance of 100 miles each which would be considered conservative.

Table 3.1: Expected Construction Equipment and Durations

Equipment Identification	Proposed Start	Proposed Completion	Quantity	Hours per day
Mass Site Grading	4/1/2016	5/1/2016		
Graders			1	8
Tractors/Loaders/Backhoes			2	8
Water Trucks			1	8
Rubber Tired Dozers			1	8
Trenching	5/2/2016	6/15/2016		
Tractors/Loaders/Backhoes			3	8
Trenchers			2	8
Water Trucks			1	8
Building Construction (PV Installation)	6/16/2016	10/30/2016		
Cranes			2	8
Air Compressors			2	7
Forklifts			1	8
Generator Sets			1	8
Other Industrial Equipment (Hydraulic Pile Driver)			1	8
Welders			1	8

This equipment list is based upon equipment inventory within CalEEMod. The quantity and types are based upon assumptions from projects of similar size and scope.

3.3 Operational Assumptions

The facilities would be operated and monitored remotely by SDG&E. Maintenance of the facilities would require occasional visual inspections and minor repairs which would generate roughly 4 trips per visit with no more than 48 visits per year. Additionally, an operation and maintenance contractor may wash the panels on any given year using a four-man crew. Estimated trip generation would be between 10 and 25 on a worst-case day for no more than 15 days per year. As a worst-case analysis, the following trip assumptions will be used. Maintenance trips by SDG&E would generate 4 trips per day for 48 days or 192 trips total. Contracted maintenance trips which would involve panel washing would generate 25 daily trips for no more than 15 days per year or 375 trips per year. Given these assumptions the worst case trip generation for a single day would be 25 trips and the worst case annual trip generation would be 375+192 or 567 trips. Assuming a worst-case trip distance of 30 miles, the project would generate 17,010 vehicle miles per year.

These operations can generate dust onsite from onsite service roads. Dust emissions from onsite roads are estimated using the AP-42 emission factors. The AP-42 is the EPA's response to the Clean Air Act of 1990 and is the principal means by which the EPA documents emission factors by reference. (Environmental Protection Agency, 2006). Equation 2 below is used to determine the onsite dust from maintenance access.

Equation 2 $$E = k\,(s/12)^{a} \times (W/3)^{b}$$

Where, E = size-specific emission factor (lb/VMT)
k = for ($PM_{2.5}$; k=0.15), for (PM_{10}; k=1.5)
s = surface material silt content (%); Construction Site = (8.5%)
a = 0.9
W = mean vehicle weight (tons) – 3 tons (largest truck onsite)
b = .45
Source: (Environmental Protection Agency, 2006)

Onsite vehicle miles traveled (VMT) is expected to be minimal. From the project entrance to the furthest point onsite would be no more than 0.25 miles. If we assumed a worst-worst case of 25 vehicles traversing the site on unpaved sections of road 0.5 miles each would generate 12.5 VMTs during maintenance onsite.

4.0 FINDINGS

4.1 Construction Findings

The Project will complete grading in approximately one month, which would include all grubbing and grading required to the site for the construction of the solar panel arrays. It is expected that approximately 6,000 CY of balanced earthwork is required. Additionally, an import of 1,700 CY of rock or decomposed granite is required for onsite fire access roads. Trenching and construction of the PV System would then begin. Finally, the installation of the photovoltaic system would be expected in just over four months. The total construction would be expected to be completed in approximately 150 calendar days.

A summary of the construction emissions is shown in Table 4.1 below. Given these findings, the Project construction would not exceed SDAPCD air quality standards of 100 and 55 lbs/day for PM_{10} and $PM_{2.5}$ and would not require mitigation to comply. It should be noted however, the Project would be required to follow any grading ordinances and utilize grading best management practices such as wetting the site as needed **Invalid source specified.**. This effort will further reduce the emissions reported in Table 4.1 below.

Table 4.1: Expected Construction Emissions Summary

Year	ROG	NO_x	CO	SO_2	PM_{10} (Dust)	PM_{10} (Exhaust)	PM_{10} (Total)	$PM_{2.5}$ (Dust)	$PM_{2.5}$ (Exhaust)	$PM_{2.5}$ (Total)
2016 (lb/day) Unmitigated	6.806	77.244	52.062	0.077	8.031	3.564	11.595	3.683	3.279	6.962
Significance Threshold (lb/day)	75	250	550	250	-	-	100	-	-	55
SDAPCD Impact?	**No**	**No**	**No**	**No**	**-**	**-**	**No**	**-**	**-**	**No**

4.2 Health Risk

The proposed project construction duration would be limited to no more than 150 days within the construction year. During this period, diesel particulates from off-road equipment exhaust would be expected. The initial grading operation, which will

only last a month, would be the most intensive. After grading, the amount of equipment and emissions would be reduced during the trenching and PV panel installation phases. Additionally, the project is spread out over a 20 acre site within a rural environment with receptors that are sparsely located around the site. Under these conditions, the diesel particulates would dissipate rapidly with distance from the source. Since OEHHA recommends using a 30 year exposure to determine cancer risk for public notification, the limited construction onsite would not necessarily warrant an in depth health risk evaluation.

As a design measure however, the proposed project would incorporate Tier II diesel equipment which would also include diesel particulate filters with the exhaust system. These filters and engine categories have been shown to significantly reduce the concentration of particulate matter in equipment exhaust. Given that the proposed project doesn't propose highly intensive grading and construction activities and since the project will be conditioned to use Tier II equipment with diesel particulate filters, no health risk impacts would be expected.

Furthermore, the project environmental documents identified that cumulative projects exist within a five mile radius from the project site though the nearest cumulative project is 1,500 meters from the project site. Since project construction emissions are so low and sing the nearest cumulative project is 1,500 meters from the project site, no cumulative construction impacts are expected.

4.3 Operational Impacts from Onsite Dust Generation and roadway operations

The proposed project site would be accessed from maintenance vehicles primarily. It is estimated that the largest truck would be 3-tons. For purposes of this analysis, it is assumed that the largest truck would represent all trucks onsite. Given this and using the equation identified in Section 3.3 of this report, the emission factor for PM_{10} and $PM_{2.5}$ is:

$$E_{PM10} = 1.5\,(8.5/12)^{0.9} \times (3/3)^{0.45} = 1.10\ lb/VMT$$
$$E_{PM2.5} = 0.15\,(8.5/12)^{0.9} \times (3/3)^{0.45} = 0.110\ lb/VMT$$

Therefore, the emissions generated from onsite vehicle maintenance crews would be 13.75 lbs/day for PM_{10} and 1.375 lbs/day for $PM_{2.5}$. Pollutant and dust emission are

calculated from the worst case daily trips of 25 per day and are shown in Table 4.2 below. Based on this, no significant operational air quality impacts are expected.

Table 4.2: Expected Daily Pollutant Generation

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Summer Scenario (Lb/Day)						
Mobile (Based on 25 trips per day)	0.118	0.357	1.586	0.004	0.293	0.082
Onsite Dust Generation	0	0	0	0	13.75	1.375
Total (Unmitigated)	0.118	0.357	1.586	0.004	0.293	0.082
SCAQMD Thresholds	**75**	**250**	**550**	**250**	**100**	**55**
Significant?	**No**	**No**	**No**	**No**	**No**	**No**
Daily pollutant generation assumes trip distances within CalEEMod						

Given this, no operational dust impacts are expected and no onsite access roadway mitigation is necessary. Though dust mitigation is not required, the proposed Project would install design features to include decomposed granite or crushed rock on all internal access roads and would also spray long lasting soil binders around the panels.

4.4 Regional Impacts

The proposed Project would create around 2.5 MW AC renewable energy source within an area which was previously used for agricultural purposes. The proposed project would not significantly increase vehicular trips from the previous agricultural uses. As shown in Section 4.3 above, operational air quality emissions are significantly lower than screening thresholds since operational vehicular trips are so low. Given this, the proposed project, would not create impacts to the RAQS, in fact, the Project would decrease statewide emissions from combustible energy sources and would also reduce greenhouse gases. Finally, the Project would not generate significant amounts of ozone precursors.

4.5 Odor Impact Findings

The Project may create temporary construction odors from combustion engine equipment but would not be considered significant due to the highly dispersive nature of diesel exhaust. Operational odors would not be expected during Project operation. Therefore, no significant odor impacts are expected from the proposed Project.

4.6 Greenhouse Gas Emissions

Construction

Utilizing the CalEEMod inputs for the model as shown in Table 4.1 above, we find that grading and construction of the project will produce approximately 401.82 Metric tons of CO_2e as shown from the annual outputs. Given the fact that the total emissions will ultimately contribute to 2020 cumulative levels, it is acceptable to amortize the total construction emission over a 20 year period (SCAQMD 2008). Based on this it is expected that the construction would add 20.09 metric tons annually and is shown in Table 4.3.

Table 4.3: Expected Construction Emissions Summary

Year	CO_2
2016 (tons)	401.83
Yearly Average (2020)*	**20.09 tons/year over 20 years**

Expected Construction emissions are based upon CalEEMod modeling assumptions identified in Chapter 4 of this report.
*Total Construction related CO_2 averaged over a 20-year span.
Data is presented in decimal format and may have rounding errors.

Operations

Operational emissions from daily maintenance activities from vehicular trips and water usage will ultimately generate greenhouse gases and can be calculated as follows. It is expected that vehicular trips from site visits and maintenance activities would generate 17,010 VMTs annually. Vehicular emission levels for greenhouse

gases (CO_2, CH_4 and N_2O) can be calculated using the CalEEMod emission model which estimates these emissions and is based on an annual VMT of 17,010 miles.

A second operational GHG source would be from the usage of water for dust control, cleaning of PV panels, and irrigation each year. The project is estimated to require 4,028,939 gallons of water annually which would be provided from a metered valve onsite. CalEEMod inputs were updated to reflect these assumptions.

Solar Generation Operations

The Project would be capable of producing approximately 2.5 megawatts (MW) of power at peak production periods. The project engineer estimates that the solar facility will produce 4,845 megawatt hours (MWH) annually. The electricity generated from the PV facility will not require the consumption of fossil fuels, and will not emit GHGs. Therefore, this electricity production would likely offset utility GHG emissions from fossil-fuel fired electricity generation. Estimation of the GHG offsets was completed using the Climate Registry General Reporting Protocol V2.0 and included the latest eGRID Sub region emissions (United States EPA, February 2014) as shown in Equation 3:

Equation 3: $$GHG(Metric\ Tons) = \frac{Electricity\ Use\ (kWh) \times Electricity\ Emission\ Factor\ \left(\frac{lbs\ GHG}{kWh}\right)}{2{,}204\ \frac{lbs}{metric\ ton}}$$

This method will be used to estimate GHG offsets since the electricity generated is likely to offset emissions otherwise produced by carbon emitting generators. The project GHG offsets can be seen in Table 4.4.

Table 4.4: Annual Total GHG Emissions Saved (PV Output)

GHG	Emission Factor eGRID Subregion WECC California (lbs/MWh)	Energy Production (MWh)	Conversion lbs/metric ton	CO_2e (Metric Tons)
CO_2e	613.28	4,845	2,204.62	**1,347.78**
Note: Data is presented in decimal format and may have rounding errors.				

4.7 Operational GHG Impacts

Using the equation data from Section 3.3 of this report, the operational emissions for the estimated 17,010 yearly VMTs would be 7.04 $MTCO_2e$. Construction emissions would generate 20.09 $MTCO_2e$ and water consumption would produce 14.68 $MTCO_2e$. Given this, the project would generate 41.81 metric tons of GHGs annually. Based on this, the project would not exceed the 900 MT screening threshold and would not require mitigation.

The proposed project would generate renewable GHGs. If the proposed project energy was to offset equivalent power generation from combustion based sources, the project would reduce GHG emissions by 1,347.78 $MTCO_2e$ or a combined reduction of 1,305.97 $MTCO_2e$ which is shown in Table 4.5 below.

Table 4.5: Annual Total GHG Emissions Saved

Source	CO_2e (Metric Tons)
Vehicular Emissions	7.04
Construction (annual average)	20.09
Water Usage	14.68
Project Operations Total	41.81
Solar PV Equivalent Combustion Power Generation GHGs	-1,347.78
Equivalent Power Combustion Offsets	**-1,305.97**
Note: Data is presented in decimal format and may have rounding errors.	

4.8 Conclusion of Findings

Based upon our analysis of construction activities for the proposed PV Solar Facility significant air quality impacts are not expected.

During operations of the Project, dust would be expected on all access roads; however, no impacts are expected and mitigation measures would not be required. It should be noted that even though impacts are not expected, the project applicant would install crushed rock on all internal fire access roads and would also spray long lasting soil binders as needed around the panels to reduce dust.

The proposed project would generate renewable GHGs. If the proposed project energy was to offset equivalent power generation from combustion based sources, the project would reduce GHG emissions by 1,347.78 $MTCO_2e$ or a combined reduction of 1,305.97 $MTCO_2e$.

A Summary of the design measures are as follows:

AQ DM1: As a condition to this project, the project applicant will add roughly 1,700 CY of crushed rock on internal fire access roads and which will serve as an all-weather pavement and reduce any potential dust generated during maintenance activities.

AQ DM2: To avoid hauling water the project would use an onsite water connection for all watering and maintenance activities.

AQ DM3: As a condition to the project, the project would spray long lasting soil binders such as around panels or exposed areas once per year or as needed to prevent onsite dust. The County will require this to be included in the project design operation and maintenance manuals.

AQ DM4: As a condition of the project, the project applicant shall comply with SEC. 87.428 of the County of San Diego's Grading Ordinance. This shall be included on all design documents.

AQ DM5: As a condition of the project, all diesel equipment in excess of 50 HP shall be Tier II or better and shall have diesel particulate filters attached inline to the exhaust system.

5.0 REFERENCES

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6.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the air quality environment and impacts within and surrounding the NLP Valley Center Solar development. The report was prepared by Jeremy Louden; a County approved CEQA Consultant for Air Quality.

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Date September 20, 2015

ATTACHMENT A

CALEEMOD 2013.2.2 - Summer, Annual

NLP Valley Center Solar Project

San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	20.00	User Defined Unit	20.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2017
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 20 Acre Solar Farm

Construction Phase - Proposed Schedule

Off-road Equipment - Proposed Equipment

Off-road Equipment - Proposed Equipment

Off-road Equipment - Proposed Equipment

Trips and VMT - 100 Mile Proposed maximum trip distance per worker

Grading - Proposed Acreage

Vehicle Trips - Proposed Trip Characteristics

Water And Wastewater - Water Usage during operations would be 4028939 gallons

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	96.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	PhaseStartDate	4/30/2016	5/2/2016
tblGrading	AcresOfGrading	52.50	20.00
tblGrading	MaterialImported	0.00	1,700.00
tblLandUse	LotAcreage	0.00	20.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripNumber	213.00	0.00
tblTripsAndVMT	VendorTripLength	7.30	100.00
tblTripsAndVMT	VendorTripLength	7.30	100.00
tblTripsAndVMT	VendorTripLength	7.30	100.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	WorkerTripLength	10.80	100.00
tblTripsAndVMT	WorkerTripLength	10.80	100.00
tblTripsAndVMT	WorkerTripLength	10.80	100.00
tblTripsAndVMT	WorkerTripNumber	18.00	13.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblVehicleTrips	CC_TL	7.30	30.00
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CNW_TL	7.30	30.00
tblVehicleTrips	CW_TL	9.50	30.00

tblVehicleTrips	HW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	0.63
tblWater	OutdoorWaterUseRate	0.00	4,028,939.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	6.8063	77.2439	52.0622	0.0765	8.0312	3.5642	11.5954	3.6829	3.2791	6.9619	0.0000	7,702.1242	7,702.1242	2.0639	0.0000	7,745.4666
Total	**6.8063**	**77.2439**	**52.0622**	**0.0765**	**8.0312**	**3.5642**	**11.5954**	**3.6829**	**3.2791**	**6.9619**	**0.0000**	**7,702.1242**	**7,702.1242**	**2.0639**	**0.0000**	**7,745.4666**

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	6.8063	77.2439	52.0622	0.0765	8.0312	3.5642	11.5954	3.6829	3.2791	6.9619	0.0000	7,702.1242	7,702.1242	2.0639	0.0000	7,745.4666
Total	**6.8063**	**77.2439**	**52.0622**	**0.0765**	**8.0312**	**3.5642**	**11.5954**	**3.6829**	**3.2791**	**6.9619**	**0.0000**	**7,702.1242**	**7,702.1242**	**2.0639**	**0.0000**	**7,745.4666**

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

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	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.1180	0.3572	1.5834	4.2300e-003	0.2888	5.0200e-003	0.2939	0.0771	4.6200e-003	0.0817		356.6447	356.6447	0.0137		356.9332
Total	**0.1182**	**0.3572**	**1.5855**	**4.2300e-003**	**0.2888**	**5.0300e-003**	**0.2939**	**0.0771**	**4.6300e-003**	**0.0817**		**356.6491**	**356.6491**	**0.0138**	**0.0000**	**356.9379**

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	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.1180	0.3572	1.5834	4.2300e-003	0.2888	5.0200e-003	0.2939	0.0771	4.6200e-003	0.0817		356.6447	356.6447	0.0137		356.9332
Total	**0.1182**	**0.3572**	**1.5855**	**4.2300e-003**	**0.2888**	**5.0300e-003**	**0.2939**	**0.0771**	**4.6300e-003**	**0.0817**		**356.6491**	**356.6491**	**0.0138**	**0.0000**	**356.9379**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	4/1/2016	4/29/2016	5	21	
2	Trenching	Trenching	5/2/2016	6/15/2016	5	33	
3	Building Construction	Building Construction	6/16/2016	10/27/2016	5	96	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 20

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Trenching	Trenchers	2	8.00	80	0.50
Building Construction	Air Compressors	2	7.00	78	0.48
Building Construction	Cranes	2	8.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Other General Industrial Equipment	1	8.00	87	0.34
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	7	13.00	0.00	0.00	100.00	100.00	100.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	0.00	0.00	100.00	100.00	100.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	20.00	5.00	0.00	100.00	100.00	100.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 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					7.0435	0.0000	7.0435	3.4210	0.0000	3.4210			0.0000			0.0000
Off-Road	6.6450	76.8040	47.3345	0.0643		3.5576	3.5576		3.2730	3.2730		6,681.9891	6,681.9891	2.0155		6,724.3151
Total	**6.6450**	**76.8040**	**47.3345**	**0.0643**	**7.0435**	**3.5576**	**10.6011**	**3.4210**	**3.2730**	**6.6940**		**6,681.9891**	**6,681.9891**	**2.0155**		**6,724.3151**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1613	0.4399	4.7277	0.0122	0.9878	6.5800e-003	0.9943	0.2619	6.0400e-003	0.2679		1,020.1352	1,020.1352	0.0484		1,021.1515
Total	**0.1613**	**0.4399**	**4.7277**	**0.0122**	**0.9878**	**6.5800e-003**	**0.9943**	**0.2619**	**6.0400e-003**	**0.2679**		**1,020.1352**	**1,020.1352**	**0.0484**		**1,021.1515**

3.2 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0435	0.0000	7.0435	3.4210	0.0000	3.4210			0.0000			0.0000
Off-Road	6.6450	76.8040	47.3345	0.0643		3.5576	3.5576		3.2730	3.2730	0.0000	6,681.9891	6,681.9891	2.0155		6,724.3151
Total	**6.6450**	**76.8040**	**47.3345**	**0.0643**	**7.0435**	**3.5576**	**10.6011**	**3.4210**	**3.2730**	**6.6940**	**0.0000**	**6,681.9891**	**6,681.9891**	**2.0155**		**6,724.3151**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1613	0.4399	4.7277	0.0122	0.9878	6.5800e-003	0.9943	0.2619	6.0400e-003	0.2679		1,020.1352	1,020.1352	0.0484		1,021.1515
Total	**0.1613**	**0.4399**	**4.7277**	**0.0122**	**0.9878**	**6.5800e-003**	**0.9943**	**0.2619**	**6.0400e-003**	**0.2679**		**1,020.1352**	**1,020.1352**	**0.0484**		**1,021.1515**

3.3 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					
Off-Road	3.0754	30.3558	17.9191	0.0294		1.9251	1.9251		1.7711	1.7711		3,057.3279	3,057.3279	0.9222		3,076.6941
Total	**3.0754**	**30.3558**	**17.9191**	**0.0294**		**1.9251**	**1.9251**		**1.7711**	**1.7711**		**3,057.3279**	**3,057.3279**	**0.9222**		**3,076.6941**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1861	0.5076	5.4551	0.0141	1.1397	7.5900e-003	1.1473	0.3022	6.9700e-003	0.3091		1,177.0790	1,177.0790	0.0558		1,178.2518
Total	**0.1861**	**0.5076**	**5.4551**	**0.0141**	**1.1397**	**7.5900e-003**	**1.1473**	**0.3022**	**6.9700e-003**	**0.3091**		**1,177.0790**	**1,177.0790**	**0.0558**		**1,178.2518**

3.3 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	lb/day										lb/day					
Off-Road	3.0754	30.3558	17.9191	0.0294		1.9251	1.9251		1.7711	1.7711	0.0000	3,057.3279	3,057.3279	0.9222		3,076.6941
Total	**3.0754**	**30.3558**	**17.9191**	**0.0294**		**1.9251**	**1.9251**		**1.7711**	**1.7711**	**0.0000**	**3,057.3279**	**3,057.3279**	**0.9222**		**3,076.6941**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1861	0.5076	5.4551	0.0141	1.1397	7.5900e-003	1.1473	0.3022	6.9700e-003	0.3091		1,177.0790	1,177.0790	0.0558		1,178.2518
Total	**0.1861**	**0.5076**	**5.4551**	**0.0141**	**1.1397**	**7.5900e-003**	**1.1473**	**0.3022**	**6.9700e-003**	**0.3091**		**1,177.0790**	**1,177.0790**	**0.0558**		**1,178.2518**

3.4 Building Construction - 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	4.1014	34.3938	19.5117	0.0314		2.1473	2.1473		2.0507	2.0507		3,081.3245	3,081.3245	0.6657		3,095.3032
Total	**4.1014**	**34.3938**	**19.5117**	**0.0314**		**2.1473**	**2.1473**		**2.0507**	**2.0507**		**3,081.3245**	**3,081.3245**	**0.6657**		**3,095.3032**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2857	5.1542	2.0087	0.0151	0.4531	0.0943	0.5474	0.1291	0.0868	0.2159		1,519.8715	1,519.8715	0.0105		1,520.0914
Worker	0.2481	0.6768	7.2734	0.0188	1.5196	0.0101	1.5297	0.4029	9.3000e-003	0.4122		1,569.4387	1,569.4387	0.0745		1,571.0024
Total	**0.5338**	**5.8310**	**9.2821**	**0.0339**	**1.9727**	**0.1044**	**2.0771**	**0.5320**	**0.0961**	**0.6280**		**3,089.3102**	**3,089.3102**	**0.0849**		**3,091.0937**

3.4 Building Construction - 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	4.1014	34.3938	19.5117	0.0314		2.1473	2.1473		2.0507	2.0507	0.0000	3,081.3245	3,081.3245	0.6657		3,095.3032
Total	**4.1014**	**34.3938**	**19.5117**	**0.0314**		**2.1473**	**2.1473**		**2.0507**	**2.0507**	**0.0000**	**3,081.3245**	**3,081.3245**	**0.6657**		**3,095.3032**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2857	5.1542	2.0087	0.0151	0.4531	0.0943	0.5474	0.1291	0.0868	0.2159		1,519.8715	1,519.8715	0.0105		1,520.0914
Worker	0.2481	0.6768	7.2734	0.0188	1.5196	0.0101	1.5297	0.4029	9.3000e-003	0.4122		1,569.4387	1,569.4387	0.0745		1,571.0024
Total	**0.5338**	**5.8310**	**9.2821**	**0.0339**	**1.9727**	**0.1044**	**2.0771**	**0.5320**	**0.0961**	**0.6280**		**3,089.3102**	**3,089.3102**	**0.0849**		**3,091.0937**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1180	0.3572	1.5834	4.2300e-003	0.2888	5.0200e-003	0.2939	0.0771	4.6200e-003	0.0817		356.6447	356.6447	0.0137		356.9332
Unmitigated	0.1180	0.3572	1.5834	4.2300e-003	0.2888	5.0200e-003	0.2939	0.0771	4.6200e-003	0.0817		356.6447	356.6447	0.0137		356.9332

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	25.00	0.00	0.00	97,500	97,500
Total	25.00	0.00	0.00	97,500	97,500

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
User Defined Industrial	30.00	30.00	30.00	0.00	100.00	0.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510423	0.073380	0.192408	0.132453	0.036550	0.005219	0.012745	0.022253	0.001862	0.002079	0.006550	0.000609	0.003468

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003
Unmitigated	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0000e-004**	**2.0000e-005**	**2.0800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.3800e-003**	**4.3800e-003**	**1.0000e-005**		**4.6300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0000e-004**	**2.0000e-005**	**2.0800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.3800e-003**	**4.3800e-003**	**1.0000e-005**		**4.6300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

NLP Valley Center Solar Project

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	20.00	User Defined Unit	20.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2017
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 20 Acre Solar Farm

Construction Phase - Proposed Schedule

Off-road Equipment - Proposed Equipment

Off-road Equipment - Proposed Equipment

Off-road Equipment - Proposed Equipment

Trips and VMT - 100 Mile Proposed maximum trip distance per worker

Grading - Proposed Acreage

Vehicle Trips - Proposed Trip Characteristics

Water And Wastewater - Water Usage during operations would be 4028939 gallons

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	96.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	PhaseStartDate	4/30/2016	5/2/2016
tblGrading	AcresOfGrading	52.50	20.00
tblGrading	MaterialImported	0.00	1,700.00
tblLandUse	LotAcreage	0.00	20.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripNumber	213.00	0.00
tblTripsAndVMT	VendorTripLength	7.30	100.00
tblTripsAndVMT	VendorTripLength	7.30	100.00
tblTripsAndVMT	VendorTripLength	7.30	100.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	WorkerTripLength	10.80	100.00
tblTripsAndVMT	WorkerTripLength	10.80	100.00
tblTripsAndVMT	WorkerTripLength	10.80	100.00
tblTripsAndVMT	WorkerTripNumber	18.00	13.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblVehicleTrips	CC_TL	7.30	30.00
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CNW_TL	7.30	30.00
tblVehicleTrips	CW_TL	9.50	30.00

tblVehicleTrips	HW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	0.11
tblWater	OutdoorWaterUseRate	0.00	4,028,939.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	6.8040	77.2973	51.6338	0.0757	8.0312	3.5642	11.5954	3.6829	3.2791	6.9619	0.0000	7,639.0165	7,639.0165	2.0639	0.0000	7,682.3589
Total	**6.8040**	**77.2973**	**51.6338**	**0.0757**	**8.0312**	**3.5642**	**11.5954**	**3.6829**	**3.2791**	**6.9619**	**0.0000**	**7,639.0165**	**7,639.0165**	**2.0639**	**0.0000**	**7,682.3589**

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	6.8040	77.2973	51.6338	0.0757	8.0312	3.5642	11.5954	3.6829	3.2791	6.9619	0.0000	7,639.0165	7,639.0165	2.0639	0.0000	7,682.3589
Total	**6.8040**	**77.2973**	**51.6338**	**0.0757**	**8.0312**	**3.5642**	**11.5954**	**3.6829**	**3.2791**	**6.9619**	**0.0000**	**7,639.0165**	**7,639.0165**	**2.0639**	**0.0000**	**7,682.3589**

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

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	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0207	0.0639	0.2651	6.7000e-004	0.0485	8.5000e-004	0.0494	0.0130	7.8000e-004	0.0137		57.0129	57.0129	2.3100e-003		57.0614
Total	**0.0209**	**0.0639**	**0.2672**	**6.7000e-004**	**0.0485**	**8.6000e-004**	**0.0494**	**0.0130**	**7.9000e-004**	**0.0137**		**57.0173**	**57.0173**	**2.3200e-003**	**0.0000**	**57.0660**

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	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0207	0.0639	0.2651	6.7000e-004	0.0485	8.5000e-004	0.0494	0.0130	7.8000e-004	0.0137		57.0129	57.0129	2.3100e-003		57.0614
Total	**0.0209**	**0.0639**	**0.2672**	**6.7000e-004**	**0.0485**	**8.6000e-004**	**0.0494**	**0.0130**	**7.9000e-004**	**0.0137**		**57.0173**	**57.0173**	**2.3200e-003**	**0.0000**	**57.0660**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	4/1/2016	4/29/2016	5	21	
2	Trenching	Trenching	5/2/2016	6/15/2016	5	33	
3	Building Construction	Building Construction	6/16/2016	10/27/2016	5	96	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 20

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Trenching	Trenchers	2	8.00	80	0.50
Building Construction	Air Compressors	2	7.00	78	0.48
Building Construction	Cranes	2	8.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Other General Industrial Equipment	1	8.00	87	0.34
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	7	13.00	0.00	0.00	100.00	100.00	100.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	0.00	0.00	100.00	100.00	100.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	20.00	5.00	0.00	100.00	100.00	100.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 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					7.0435	0.0000	7.0435	3.4210	0.0000	3.4210			0.0000			0.0000
Off-Road	6.6450	76.8040	47.3345	0.0643		3.5576	3.5576		3.2730	3.2730		6,681.9891	6,681.9891	2.0155		6,724.3151
Total	**6.6450**	**76.8040**	**47.3345**	**0.0643**	**7.0435**	**3.5576**	**10.6011**	**3.4210**	**3.2730**	**6.6940**		**6,681.9891**	**6,681.9891**	**2.0155**		**6,724.3151**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1590	0.4933	4.2993	0.0115	0.9878	6.5800e-003	0.9943	0.2619	6.0400e-003	0.2679		957.0274	957.0274	0.0484		958.0438
Total	**0.1590**	**0.4933**	**4.2993**	**0.0115**	**0.9878**	**6.5800e-003**	**0.9943**	**0.2619**	**6.0400e-003**	**0.2679**		**957.0274**	**957.0274**	**0.0484**		**958.0438**

3.2 Grading - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0435	0.0000	7.0435	3.4210	0.0000	3.4210			0.0000			0.0000
Off-Road	6.6450	76.8040	47.3345	0.0643		3.5576	3.5576		3.2730	3.2730	0.0000	6,681.9891	6,681.9891	2.0155		6,724.3151
Total	**6.6450**	**76.8040**	**47.3345**	**0.0643**	**7.0435**	**3.5576**	**10.6011**	**3.4210**	**3.2730**	**6.6940**	**0.0000**	**6,681.9891**	**6,681.9891**	**2.0155**		**6,724.3151**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1590	0.4933	4.2993	0.0115	0.9878	6.5800e-003	0.9943	0.2619	6.0400e-003	0.2679		957.0274	957.0274	0.0484		958.0438
Total	**0.1590**	**0.4933**	**4.2993**	**0.0115**	**0.9878**	**6.5800e-003**	**0.9943**	**0.2619**	**6.0400e-003**	**0.2679**		**957.0274**	**957.0274**	**0.0484**		**958.0438**

3.3 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					
Off-Road	3.0754	30.3558	17.9191	0.0294		1.9251	1.9251		1.7711	1.7711		3,057.3279	3,057.3279	0.9222		3,076.6941
Total	**3.0754**	**30.3558**	**17.9191**	**0.0294**		**1.9251**	**1.9251**		**1.7711**	**1.7711**		**3,057.3279**	**3,057.3279**	**0.9222**		**3,076.6941**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1835	0.5692	4.9607	0.0132	1.1397	7.5900e-003	1.1473	0.3022	6.9700e-003	0.3091		1,104.2624	1,104.2624	0.0558		1,105.4352
Total	**0.1835**	**0.5692**	**4.9607**	**0.0132**	**1.1397**	**7.5900e-003**	**1.1473**	**0.3022**	**6.9700e-003**	**0.3091**		**1,104.2624**	**1,104.2624**	**0.0558**		**1,105.4352**

3.3 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	lb/day										lb/day					
Off-Road	3.0754	30.3558	17.9191	0.0294		1.9251	1.9251		1.7711	1.7711	0.0000	3,057.3279	3,057.3279	0.9222		3,076.6941
Total	**3.0754**	**30.3558**	**17.9191**	**0.0294**		**1.9251**	**1.9251**		**1.7711**	**1.7711**	**0.0000**	**3,057.3279**	**3,057.3279**	**0.9222**		**3,076.6941**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1835	0.5692	4.9607	0.0132	1.1397	7.5900e-003	1.1473	0.3022	6.9700e-003	0.3091		1,104.2624	1,104.2624	0.0558		1,105.4352
Total	**0.1835**	**0.5692**	**4.9607**	**0.0132**	**1.1397**	**7.5900e-003**	**1.1473**	**0.3022**	**6.9700e-003**	**0.3091**		**1,104.2624**	**1,104.2624**	**0.0558**		**1,105.4352**

3.4 Building Construction - 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	4.1014	34.3938	19.5117	0.0314		2.1473	2.1473		2.0507	2.0507		3,081.3245	3,081.3245	0.6657		3,095.3032
Total	**4.1014**	**34.3938**	**19.5117**	**0.0314**		**2.1473**	**2.1473**		**2.0507**	**2.0507**		**3,081.3245**	**3,081.3245**	**0.6657**		**3,095.3032**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2931	5.3342	2.1886	0.0151	0.4531	0.0944	0.5475	0.1291	0.0868	0.2159		1,518.9569	1,518.9569	0.0105		1,519.1772
Worker	0.2446	0.7590	6.6143	0.0176	1.5196	0.0101	1.5297	0.4029	9.3000e-003	0.4122		1,472.3499	1,472.3499	0.0745		1,473.9136
Total	**0.5377**	**6.0931**	**8.8029**	**0.0327**	**1.9727**	**0.1045**	**2.0772**	**0.5320**	**0.0961**	**0.6281**		**2,991.3068**	**2,991.3068**	**0.0850**		**2,993.0908**

3.4 Building Construction - 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	4.1014	34.3938	19.5117	0.0314		2.1473	2.1473		2.0507	2.0507	0.0000	3,081.3245	3,081.3245	0.6657		3,095.3032
Total	**4.1014**	**34.3938**	**19.5117**	**0.0314**		**2.1473**	**2.1473**		**2.0507**	**2.0507**	**0.0000**	**3,081.3245**	**3,081.3245**	**0.6657**		**3,095.3032**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2931	5.3342	2.1886	0.0151	0.4531	0.0944	0.5475	0.1291	0.0868	0.2159		1,518.9569	1,518.9569	0.0105		1,519.1772
Worker	0.2446	0.7590	6.6143	0.0176	1.5196	0.0101	1.5297	0.4029	9.3000e-003	0.4122		1,472.3499	1,472.3499	0.0745		1,473.9136
Total	**0.5377**	**6.0931**	**8.8029**	**0.0327**	**1.9727**	**0.1045**	**2.0772**	**0.5320**	**0.0961**	**0.6281**		**2,991.3068**	**2,991.3068**	**0.0850**		**2,993.0908**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0207	0.0639	0.2651	6.7000e-004	0.0485	8.5000e-004	0.0494	0.0130	7.8000e-004	0.0137		57.0129	57.0129	2.3100e-003		57.0614
Unmitigated	0.0207	0.0639	0.2651	6.7000e-004	0.0485	8.5000e-004	0.0494	0.0130	7.8000e-004	0.0137		57.0129	57.0129	2.3100e-003		57.0614

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	4.20	0.00	0.00	16,380	16,380
Total	4.20	0.00	0.00	16,380	16,380

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
User Defined Industrial	30.00	30.00	30.00	0.00	100.00	0.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510423	0.073380	0.192408	0.132453	0.036550	0.005219	0.012745	0.022253	0.001862	0.002079	0.006550	0.000609	0.003468

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003
Unmitigated	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0000e-004**	**2.0000e-005**	**2.0800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.3800e-003**	**4.3800e-003**	**1.0000e-005**		**4.6300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.0000e-004	2.0000e-005	2.0800e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		4.3800e-003	4.3800e-003	1.0000e-005		4.6300e-003
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0000e-004**	**2.0000e-005**	**2.0800e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**4.3800e-003**	**4.3800e-003**	**1.0000e-005**		**4.6300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Vegetation

NLP Valley Center Solar Project (Annual)

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	20.00	User Defined Unit	20.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2017
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 20 Acre Solar Farm

Construction Phase - Proposed Schedule

Off-road Equipment - Proposed Equipment

Off-road Equipment - Proposed Equipment

Off-road Equipment - Proposed Equipment

Trips and VMT - 100 Mile Proposed maximum trip distance per worker

Grading - Proposed Acreage

Vehicle Trips - Proposed Trip Characteristics .109

Water And Wastewater - Water Usage during operations would be 4028939 gallons

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	300.00	96.00
tblConstructionPhase	NumDays	30.00	21.00
tblConstructionPhase	PhaseStartDate	4/30/2016	5/2/2016
tblGrading	AcresOfGrading	52.50	20.00
tblGrading	MaterialImported	0.00	1,700.00
tblLandUse	LotAcreage	0.00	20.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripLength	20.00	100.00
tblTripsAndVMT	HaulingTripNumber	213.00	0.00
tblTripsAndVMT	VendorTripLength	7.30	100.00
tblTripsAndVMT	VendorTripLength	7.30	100.00
tblTripsAndVMT	VendorTripLength	7.30	100.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	WorkerTripLength	10.80	100.00
tblTripsAndVMT	WorkerTripLength	10.80	100.00
tblTripsAndVMT	WorkerTripLength	10.80	100.00
tblTripsAndVMT	WorkerTripNumber	18.00	13.00
tblTripsAndVMT	WorkerTripNumber	0.00	20.00
tblVehicleTrips	CC_TL	7.30	30.00
tblVehicleTrips	CC_TTP	0.00	100.00
tblVehicleTrips	CNW_TL	7.30	30.00
tblVehicleTrips	CW_TL	9.50	30.00

tblVehicleTrips	HW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	0.11
tblWater	OutdoorWaterUseRate	0.00	4,028,939.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.3474	3.2655	2.2803	4.5900e-003	0.1950	0.1774	0.3724	0.0685	0.1668	0.2353	0.0000	400.4196	400.4196	0.0670	0.0000	401.8263
Total	**0.3474**	**3.2655**	**2.2803**	**4.5900e-003**	**0.1950**	**0.1774**	**0.3724**	**0.0685**	**0.1668**	**0.2353**	**0.0000**	**400.4196**	**400.4196**	**0.0670**	**0.0000**	**401.8263**

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	0.3474	3.2655	2.2803	4.5900e-003	0.1950	0.1774	0.3724	0.0685	0.1668	0.2353	0.0000	400.4194	400.4194	0.0670	0.0000	401.8260
Total	**0.3474**	**3.2655**	**2.2803**	**4.5900e-003**	**0.1950**	**0.1774**	**0.3724**	**0.0685**	**0.1668**	**0.2353**	**0.0000**	**400.4194**	**400.4194**	**0.0670**	**0.0000**	**401.8260**

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

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	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.6600e-003	8.5900e-003	0.0353	9.0000e-005	6.4000e-003	1.1000e-004	6.5100e-003	1.7100e-003	1.0000e-004	1.8200e-003	0.0000	7.0339	7.0339	2.8000e-004	0.0000	7.0398
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	14.6285	14.6285	5.9000e-004	1.2000e-004	14.6786
Total	**2.6800e-003**	**8.5900e-003**	**0.0355**	**9.0000e-005**	**6.4000e-003**	**1.1000e-004**	**6.5100e-003**	**1.7100e-003**	**1.0000e-004**	**1.8200e-003**	**0.0000**	**21.6627**	**21.6627**	**8.7000e-004**	**1.2000e-004**	**21.7188**

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	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.6600e-003	8.5900e-003	0.0353	9.0000e-005	6.4000e-003	1.1000e-004	6.5100e-003	1.7100e-003	1.0000e-004	1.8200e-003	0.0000	7.0339	7.0339	2.8000e-004	0.0000	7.0398
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	14.6285	14.6285	5.9000e-004	1.2000e-004	14.6786
Total	**2.6800e-003**	**8.5900e-003**	**0.0355**	**9.0000e-005**	**6.4000e-003**	**1.1000e-004**	**6.5100e-003**	**1.7100e-003**	**1.0000e-004**	**1.8200e-003**	**0.0000**	**21.6627**	**21.6627**	**8.7000e-004**	**1.2000e-004**	**21.7188**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	4/1/2016	4/29/2016	5	21	
2	Trenching	Trenching	5/2/2016	6/15/2016	5	33	
3	Building Construction	Building Construction	6/16/2016	10/27/2016	5	96	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 20

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders	1	8.00	174	0.41
Grading	Off-Highway Trucks	1	8.00	400	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Off-Highway Trucks	1	8.00	400	0.38
Trenching	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Trenching	Trenchers	2	8.00	80	0.50
Building Construction	Air Compressors	2	7.00	78	0.48
Building Construction	Cranes	2	8.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Other General Industrial Equipment	1	8.00	87	0.34
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	7	13.00	0.00	0.00	100.00	100.00	100.00	LD_Mix	HDT_Mix	HHDT
Trenching	6	15.00	0.00	0.00	100.00	100.00	100.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	20.00	5.00	0.00	100.00	100.00	100.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - 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					0.0740	0.0000	0.0740	0.0359	0.0000	0.0359	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0698	0.8064	0.4970	6.7000e-004		0.0374	0.0374		0.0344	0.0344	0.0000	63.6489	63.6489	0.0192	0.0000	64.0521
Total	**0.0698**	**0.8064**	**0.4970**	**6.7000e-004**	**0.0740**	**0.0374**	**0.1113**	**0.0359**	**0.0344**	**0.0703**	**0.0000**	**63.6489**	**63.6489**	**0.0192**	**0.0000**	**64.0521**

3.2 Grading - 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	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6300e-003	5.1100e-003	0.0456	1.2000e-004	0.0101	7.0000e-005	0.0102	2.6900e-003	6.0000e-005	2.7500e-003	0.0000	9.2082	9.2082	4.6000e-004	0.0000	9.2179
Total	**1.6300e-003**	**5.1100e-003**	**0.0456**	**1.2000e-004**	**0.0101**	**7.0000e-005**	**0.0102**	**2.6900e-003**	**6.0000e-005**	**2.7500e-003**	**0.0000**	**9.2082**	**9.2082**	**4.6000e-004**	**0.0000**	**9.2179**

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					0.0740	0.0000	0.0740	0.0359	0.0000	0.0359	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0698	0.8064	0.4970	6.7000e-004		0.0374	0.0374		0.0344	0.0344	0.0000	63.6488	63.6488	0.0192	0.0000	64.0520
Total	**0.0698**	**0.8064**	**0.4970**	**6.7000e-004**	**0.0740**	**0.0374**	**0.1113**	**0.0359**	**0.0344**	**0.0703**	**0.0000**	**63.6488**	**63.6488**	**0.0192**	**0.0000**	**64.0520**

3.2 Grading - 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	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6300e-003	5.1100e-003	0.0456	1.2000e-004	0.0101	7.0000e-005	0.0102	2.6900e-003	6.0000e-005	2.7500e-003	0.0000	9.2082	9.2082	4.6000e-004	0.0000	9.2179
Total	**1.6300e-003**	**5.1100e-003**	**0.0456**	**1.2000e-004**	**0.0101**	**7.0000e-005**	**0.0102**	**2.6900e-003**	**6.0000e-005**	**2.7500e-003**	**0.0000**	**9.2082**	**9.2082**	**4.6000e-004**	**0.0000**	**9.2179**

3.3 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					
Off-Road	0.0507	0.5009	0.2957	4.9000e-004		0.0318	0.0318		0.0292	0.0292	0.0000	45.7638	45.7638	0.0138	0.0000	46.0536
Total	**0.0507**	**0.5009**	**0.2957**	**4.9000e-004**		**0.0318**	**0.0318**		**0.0292**	**0.0292**	**0.0000**	**45.7638**	**45.7638**	**0.0138**	**0.0000**	**46.0536**

3.3 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	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9600e-003	9.2600e-003	0.0827	2.2000e-004	0.0184	1.3000e-004	0.0185	4.8800e-003	1.2000e-004	4.9900e-003	0.0000	16.6962	16.6962	8.4000e-004	0.0000	16.7137
Total	**2.9600e-003**	**9.2600e-003**	**0.0827**	**2.2000e-004**	**0.0184**	**1.3000e-004**	**0.0185**	**4.8800e-003**	**1.2000e-004**	**4.9900e-003**	**0.0000**	**16.6962**	**16.6962**	**8.4000e-004**	**0.0000**	**16.7137**

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	0.0507	0.5009	0.2957	4.9000e-004		0.0318	0.0318		0.0292	0.0292	0.0000	45.7637	45.7637	0.0138	0.0000	46.0536
Total	**0.0507**	**0.5009**	**0.2957**	**4.9000e-004**		**0.0318**	**0.0318**		**0.0292**	**0.0292**	**0.0000**	**45.7637**	**45.7637**	**0.0138**	**0.0000**	**46.0536**

3.3 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	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9600e-003	9.2600e-003	0.0827	2.2000e-004	0.0184	1.3000e-004	0.0185	4.8800e-003	1.2000e-004	4.9900e-003	0.0000	16.6962	16.6962	8.4000e-004	0.0000	16.7137
Total	**2.9600e-003**	**9.2600e-003**	**0.0827**	**2.2000e-004**	**0.0184**	**1.3000e-004**	**0.0185**	**4.8800e-003**	**1.2000e-004**	**4.9900e-003**	**0.0000**	**16.6962**	**16.6962**	**8.4000e-004**	**0.0000**	**16.7137**

3.4 Building Construction - 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	0.1969	1.6509	0.9366	1.5100e-003		0.1031	0.1031		0.0984	0.0984	0.0000	134.1759	134.1759	0.0290	0.0000	134.7846
Total	**0.1969**	**1.6509**	**0.9366**	**1.5100e-003**		**0.1031**	**0.1031**		**0.0984**	**0.0984**	**0.0000**	**134.1759**	**134.1759**	**0.0290**	**0.0000**	**134.7846**

3.4 Building Construction - 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	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0139	0.2570	0.1021	7.2000e-004	0.0213	4.5300e-003	0.0258	6.0900e-003	4.1700e-003	0.0103	0.0000	66.1659	66.1659	4.6000e-004	0.0000	66.1755
Worker	0.0115	0.0359	0.3207	8.5000e-004	0.0712	4.9000e-004	0.0717	0.0189	4.5000e-004	0.0194	0.0000	64.7609	64.7609	3.2400e-003	0.0000	64.8290
Total	**0.0254**	**0.2929**	**0.4228**	**1.5700e-003**	**0.0925**	**5.0200e-003**	**0.0975**	**0.0250**	**4.6200e-003**	**0.0296**	**0.0000**	**130.9268**	**130.9268**	**3.7000e-003**	**0.0000**	**131.0045**

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	0.1969	1.6509	0.9366	1.5100e-003		0.1031	0.1031		0.0984	0.0984	0.0000	134.1757	134.1757	0.0290	0.0000	134.7844
Total	**0.1969**	**1.6509**	**0.9366**	**1.5100e-003**		**0.1031**	**0.1031**		**0.0984**	**0.0984**	**0.0000**	**134.1757**	**134.1757**	**0.0290**	**0.0000**	**134.7844**

3.4 Building Construction - 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	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0139	0.2570	0.1021	7.2000e-004	0.0213	4.5300e-003	0.0258	6.0900e-003	4.1700e-003	0.0103	0.0000	66.1659	66.1659	4.6000e-004	0.0000	66.1755
Worker	0.0115	0.0359	0.3207	8.5000e-004	0.0712	4.9000e-004	0.0717	0.0189	4.5000e-004	0.0194	0.0000	64.7609	64.7609	3.2400e-003	0.0000	64.8290
Total	**0.0254**	**0.2929**	**0.4228**	**1.5700e-003**	**0.0925**	**5.0200e-003**	**0.0975**	**0.0250**	**4.6200e-003**	**0.0296**	**0.0000**	**130.9268**	**130.9268**	**3.7000e-003**	**0.0000**	**131.0045**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.6600e-003	8.5900e-003	0.0353	9.0000e-005	6.4000e-003	1.1000e-004	6.5100e-003	1.7100e-003	1.0000e-004	1.8200e-003	0.0000	7.0339	7.0339	2.8000e-004	0.0000	7.0398
Unmitigated	2.6600e-003	8.5900e-003	0.0353	9.0000e-005	6.4000e-003	1.1000e-004	6.5100e-003	1.7100e-003	1.0000e-004	1.8200e-003	0.0000	7.0339	7.0339	2.8000e-004	0.0000	7.0398

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	4.36	0.00	0.00	17,020	17,020
Total	4.36	0.00	0.00	17,020	17,020

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
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	Primary	Diverted	Pass-by
User Defined Industrial	30.00	30.00	30.00	0.00	100.00	0.00	100	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510423	0.073380	0.192408	0.132453	0.036550	0.005219	0.012745	0.022253	0.001862	0.002079	0.006550	0.000609	0.003468

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Unmitigated	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0000e-005**	**0.0000**	**1.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**0.0000**	**3.8000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.6000e-004	3.6000e-004	0.0000	0.0000	3.8000e-004
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0000e-005**	**0.0000**	**1.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**0.0000**	**3.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.6285	5.9000e-004	1.2000e-004	14.6786
Unmitigated	14.6285	5.9000e-004	1.2000e-004	14.6786

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 4.02894	14.6285	5.9000e-004	1.2000e-004	14.6786
Total		**14.6285**	**5.9000e-004**	**1.2000e-004**	**14.6786**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 4.02894	14.6285	5.9000e-004	1.2000e-004	14.6786
Total		**14.6285**	**5.9000e-004**	**1.2000e-004**	**14.6786**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Vegetation