APPENDIX W
AIR QUALITY AND GREENHOUSE GAS TECHNICAL REPORT

AIR QUALITY AND GREENHOUSE GAS TECHNICAL STUDY

FOR THE
DESERT QUARTZITE SOLAR PROJECT

RIVERSIDE COUNTY, CALIFORNIA

Prepared for:

Desert Quartzite, LLC
135 Main Street, 6th Floor
San Francisco, California 94105

Prepared by:

URS
4225 Executive Square, Suite 1600
La Jolla, California 92037
(858) 812-8277 ⬍ Fax: (858) 812-9293

URS Project Number 60419825.28907534.30001

December 2015

TABLE OF CONTENTS

Section **Page**

1.0 PROJECT OVERVIEW 1-1

1.1 INTRODUCTION 1-1
1.2 PROJECT BACKGROUND 1-3

2.0 REGULATORY FRAMEWORK 2-1

2.1 INTRODUCTION 2-1
2.2 POLLUTANTS AND HEALTH EFFECT 2-1

2.2.1 Criteria Pollutants 2-1
2.2.2 Toxic Air Contaminants 2-4
2.2.3 Greenhouse Gases 2-5
2.2.4 Odors 2-5
2.2.5 Health Effects 2-6

2.3 FEDERAL REGULATIONS 2-10

2.3.1 National Environmental Policy Act 2-10
2.3.2 Clean Air Act 2-10

2.4 STATE REGULATIONS 2-16

2.4.1 California Environmental Quality Act 2-16
2.4.2 ARB Requirements 2-17
2.4.3 Health & Safety Code §39500 *et seq.* State Implementation Plan 2-18
2.4.4 HSC §40910 – 40930 – California Clean Air Act 2-18
2.4.5 HSC §39650 – 39675 – Toxic Air Contaminant Program 2-18
2.4.6 Title 17, California Code of Regulations, §93115 – Airborne Toxic Control Measure for Stationary Compression-ignition Engines 2-19
2.4.7 California Health & Safety Code §41700 – Nuisance Regulation 2-19
2.4.8 Stats. 2006, Ch. 488 and California Health & Safety Code § 38500–38590 – California Climate Change Regulatory Program 2-19
2.4.9 Pavley Regulations 2-21

2.5 LOCAL REGULATIONS 2-21

Section **Page**

2.5.1 HSC §40914 – Mojave Desert Air Quality Plans 2-22
2.5.2 MDAQMD's CEQA Significance Thresholds (MDAQMD 2011) 2-22
2.5.3 HSC §4000 *et seq*., HSC §40200 et seq., Indicated MDAQMD Rules – MDAQMD Rules and Regulations (MDAQMD 2015) 2-23

3.0 EXISTING BASELINE CONDITIONS 3-1

3.1 INTRODUCTION 3-1
3.2 REGIONAL CLIMATE 3-2
3.3 EXISTING AMBIENT AIR QUALITY 3-3

4.0 IMPACT ASSESSMENT 4-1

4.1 IMPACT THRESHOLDS AND ASSESSMENT CRITERIA 4-1
4.2 ASSUMPTIONS AND METHODOLOGY 4-1
4.3 PROJECT EMISSION CONTROL MEASURES 4-3
4.4 IMPACT ASSESSMENT RESULTS 4-4
4.5 FINDINGS 4-4

5.0 REFERENCES 5-1
6.0 LIST OF PREPARERS 6-1

Tables **Page**

Table 2-1 National and California Ambient Air Quality Standards 2-12
Table 2-2 Attainment Status for the Portion of Riverside County within MDAQMD with Respect to National and California Ambient Air Quality Standards 2-14
Table 2-3 Federal General Conformity *De Minimis* Levels 2-15
Table 2-4 MDAQMD's CEQA Significant Emissions Thresholds 2-22
Table 3-1 Average Temperature and Precipitation Data at Blythe (1949–2010) 3-2
Table 3-2 Air Quality Data for the Blythe Project Area (2011–2013) 3-4
Table 4-1 Project Construction Daily Emission Estimations (Lbs/Day) 4-5
Table 4-2 Project Construction Annual Emission Estimations (Tons/Year) 4-5
Table 4-3 Project Operational Annual Emission Estimations (Tons/Year) 4-6
Table 4-4 Project GHG Emission Estimations – Annual (Tons/Year and Metric Tons/Year) 4-6

Figures **Follows Page**

Figure 1 Regional Vicinity Map 1-3
Figure 2 Preliminary Site Plan 1-3
Figure 3 MDAQMD Boundary and Project Vehicle Miles 2-23
Figure 4 Annual Wind Rose (Blythe, CA 2006–2010) 3-4

Appendices

Appendix A Project Construction Emission Estimations
Appendix B Project Operational Emission Estimations

SECTION 1.0
PROJECT OVERVIEW

1.1 INTRODUCTION

Desert Quartzite, LLC (Applicant) proposes to develop and construct a 300-megawatt (MW) alternating current photovoltaic solar facility known as the Desert Quartzite Solar Project (Project). The overall Project includes the solar generation facility, an on-site substation, and the generation-tie (gen-tie) line. The proposed Project is located in eastern Riverside County near Blythe, California. The proposed solar facility and the approximately 3-mile-long, 230-kilovolt (kV) gen-tie line interconnection to the existing Southern California Edison (SCE) Colorado River Substation (CRSS) are located primarily on lands administered by the U.S. Department of the Interior, Bureau of Land Management (BLM) (BLM CACA# 04937; 5,115 acres). The Project site also includes 160 acres of private land (APN 879-110-001). The overall Project site encompasses approximately 5,275 acres. The proposed solar facility would be constructed within an approximately 3,714-acre fenced portion of the overall Project site. The gen-tie line study corridor encompasses approximately 445 acres of BLM lands within the overall Project site. A vicinity map of the proposed Project (i.e., including BLM and privately-owned lands) is presented on Figure 1 and the proposed preliminary site layout is presented on Figure 2. Figures 1 and 2 are presented at the end of Section 1.0.

Site access will be via Interstate 10 (I-10) at the State Route (SR)-78 to SR-78 (south)/ Neighbours Boulevard to 16th Avenue/Seeley Avenue (west). Project construction is anticipated to require from approximately 25 to 48 months to complete, and is expected to start in late 2016. This analysis is based on an assumed approximately 25-month construction timeframe which is considered to be worst case for impact assessment purposes. The construction workforce is estimated to result in an average of 450 (round trip) vehicle trips per day (21 working days per month), with a maximum of 810 (round trip) vehicle trips per day during peak construction. The workforce is expected to commute to the site from within an average distance of 35 miles from the Project site and is expected to arrive at the Project site by 7 a.m. and to depart at 5 p.m. each day (i.e., avoid 7–9 a.m. peak traffic period but not the 4–6 p.m. peak period); it is common that a fairly large portion of the workforce voluntarily carpools regularly. In addition to commute trips by construction workers, approximately 14,400 truck deliveries (i.e., 14,400 round trips or 28,800 one way trips) of equipment, materials, and fuel for on-site construction equipment are estimated to be required over the course of the construction period. Construction of the proposed Project is expected to require a total of up to 10-15 oversize loads for transformers and motor graders. Equipment, material, and fuel deliveries are planned to occur during non-peak traffic hours. Construction phase-related truck deliveries are estimated to require one-way distances (within the boundaries of the Mojave Desert Air Quality Management District) as follows: equipment and material deliveries at 30.5 miles; aggregate and concrete at 13 miles; and fuel at 10 miles.

Construction activities will include site preparation and grading, solar array foundation installation (which may include post driving), equipment installation, on-site substation and operations and maintenance building construction, gen-tie poles and conductor installation along the gen-tie route, equipment testing, and site cleanup and restoration. Typical construction equipment considered in this analysis includes graders, scrapers, dozers, loaders, tractors, tractor discs, skid steers, roller/vibrator/padders, trenchers, post drivers, forklifts, pumps, generators, and trucks. Construction of the proposed Project will include site preparation activities involving clearing of vegetation/surface disturbance and cut-and-fill activities as itemized by construction activity in Appendix A (Project Construction Emission Estimations). The operational workforce is anticipated to be five employees.

It is currently estimated that the maximum water usage for an approximate 25-month construction timeframe is 1,400 acre feet (AF) or approximately 700 AF per year on average. During construction, water will be needed primarily for dust control and soil compaction, with small amounts used for sanitary and other purposes. During operations, the Project will use no water directly for electricity generation. The operational phase of the Project is expected to require up to 38 AF per year (AFY) of water, including an estimated 18 AFY for two annual panel washings. The Project plans to utilize groundwater from either existing local well(s) or via installation of on-site groundwater wells. The applicant is also considering trucking water to the Project Site for at least the initial months of construction if an on-site water supply well(s) is not yet installed and functional. It is possible that trucking water to the Project Site could be required for the entire length of construction which would potentially require up to approximately 57,000 water deliveries (assuming 8,000-gallon capacity water trucks). All water deliveries to the Project site would be required by the applicant to occur during non-peak traffic hours. It is assumed that water deliveries would originate from a water supply source within 10 miles of the Project site. The worst-case water trucking scenario is included in the emission estimations.

The purpose of this study is to provide scientific information and technical data regarding the existing environmental baseline conditions within the study area and the potential air quality and greenhouse gas (GHG) impacts from the proposed Project. The Project information supporting these analyses is primarily based on the Applicant's revised Desert Quartzite Solar Project Plan of Development (POD) submitted to the BLM in May 2014, as amended. The POD will continue to be updated by the Applicant to provide current and accurate Project information. If warranted, Applicant measures are proposed in this study to address adverse changes to the air quality as a result of the Project. This study will be submitted to the BLM and Riverside County to support their independent review and evaluation of the environmental impacts of the Project pursuant to applicable Federal, State, and local laws. The POD is part of the BLM Right-of-Way (ROW) grant application process which for this Project includes preparation of an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA). Because part of the Project would be on private land, the proposed Project is also expected to require a Conditional Use Permit (CUP)

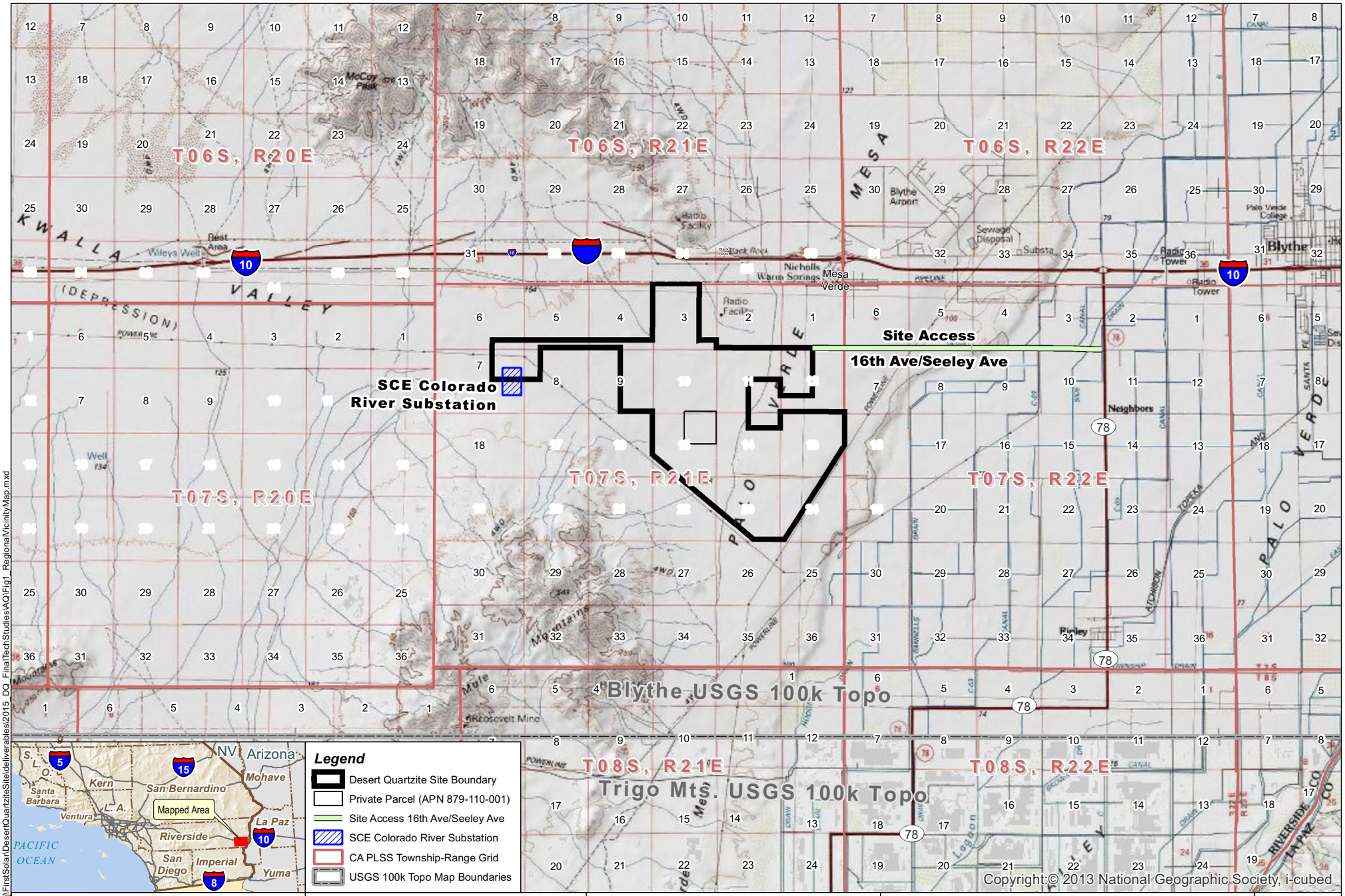
from Riverside County. A CUP would necessitate compliance with the California Environmental Quality Act (CEQA), for which an Environmental Impact Report (EIR) is expected to be required. Therefore, it is currently assumed that a joint EIS/EIR will be prepared by the BLM and Riverside County.

1.2 PROJECT BACKGROUND

The fundamental purpose of the Project is to construct and operate a clean, renewable source of solar electricity that helps meet California's growing demand for power and helps fulfill national and State renewable energy and clean power goals. Solar energy provides a sustainable, renewable source of power that helps reduce fossil fuel dependence and GHG emissions. The proposed Project will help California meet its Renewable Portfolio Standard (RPS) goal, which is currently 50 percent[1] of electrical power retail sales by 2030 under Senate Bill (SB) 350. The Project supports Secretary of the Interior Salazar's Orders 3283 and 3285, which make developing renewable energy a top national priority. The Project will also help California achieve the 2006 Global Warming Solutions Act (Assembly Bill [AB] 32) GHG reduction targets, which require California's GHG emissions to be reduced to 1990 levels by 2020.

The electricity generated by the Project will be sold to one or more utilities or other retail customers. When fully operational, the 300 MW Project will deliver over 1.5 billion kilowatt-hours of clean, renewable energy annually. This generation is equivalent to the amount of energy needed to serve over 90,000 California homes each year. When compared to the carbon dioxide (CO_2) emissions that would be emitted if the same amount of electricity was generated from fossil fuels, implementing the Project will avoid emissions of over 165,000 metric tons of CO_2 annually – the equivalent of taking almost 32,000 automobiles off the road.

[1] SB 350 was signed into law by California Governor Brown on October 8, 2015. This legislation increases California's RPS to 50 percent by 2030.



Desert Quartzite Solar Project
Riverside County, CA

URS Corporation

0 0.5 1 1.5 2 Miles

0 5,000 10,000 Feet

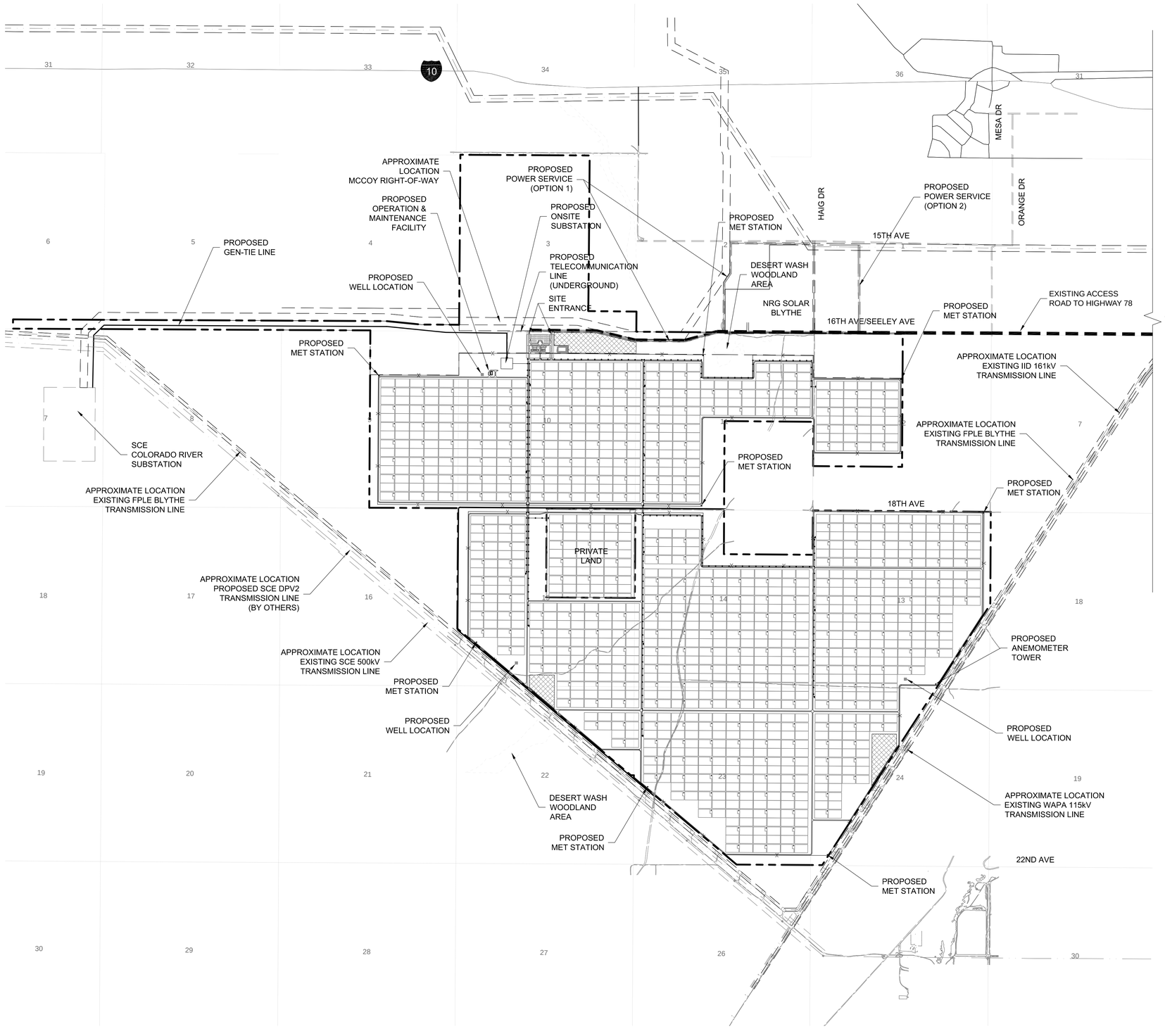
Source: [1] Bing Maps Aerial Imagery Web Mapping Service - (c) 2010 Microsoft Corporation and its datas upplier (Image Date: 3/13/2011), [2] California Geospatial Information Library PLS, [3] ESRI StreetMap USA (2007).

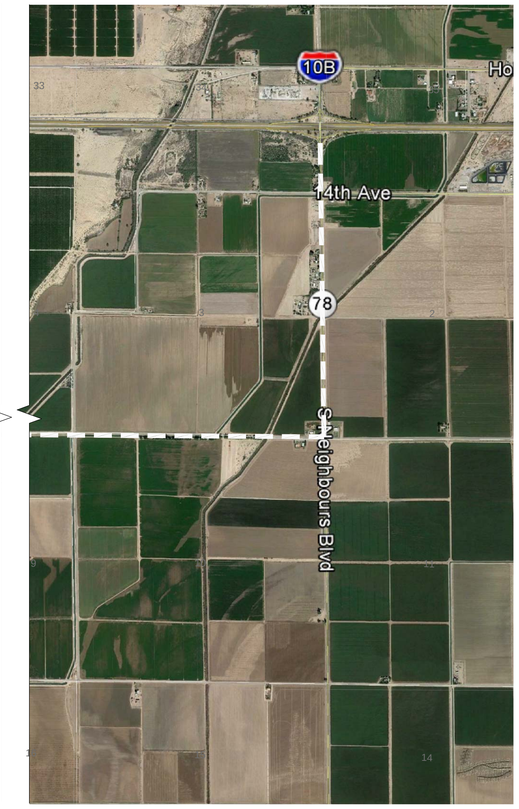
Figure 1. Regional Vicinity Map

2015

V:\Projects\GIS_Proj\FirstSolar\DesertQuartziteSite\deliverables\2015_DQ_FinalTechStudies\AO\Fig1_RegionalVicinityMap.mxd

V:\Projects\GIS_Proj\Local\FirstSolar\DesertQuartzite\1015-0738





LEGEND

- PROPOSED PROJECT SITE BOUNDARY
- PROPOSED GEN-TIE
- PROPOSED PERIMETER FENCE
- PROPOSED ACCESS ROAD
- PROPOSED WELL LOCATION (GROUNDWATER)
- TYPICAL PV ARRAY
- CONSTRUCTION STAGING AREA
- EXISTING ROADS
- EASEMENTS/RIGHT-OF-WAY BY OTHERS
- EXISTING/PROPOSED TRANSMISSION LINE

NORTH

3000' 1500' 0 3000'

THIS PRINT IS NOT TO BE USED FOR CONSTRUCTION UNLESS NOTED AND SIGNED OK FOR CONSTRUCTION ABOVE LAST REVISION.

DESERT QUARTZITE, LLC
135 MAIN STREET, 6TH FLOOR
SAN FRANCISCO, CALIFORNIA 94105
PHONE: (415) 935-2500

DESERT QUARTZITE
SOLAR PROJECT
RIVERSIDE COUNTY
CALIFORNIA

REV	DATE	REVISION DESCRIPTION	BY	CHK	APP

FS JOB #:

PROJ. DEVT. ENGR: RH

PROJ. MGR. ENV.:

SCALE: 1"=1500' @ 24"x36" SHEET

COPYRIGHT BY: DESERT QUARTZITE, LLC

SHEET TITLE

FIGURE 2
PRELIMINARY SITE PLAN

SHEET 2 OF 14

THIS PUBLICATION CONTAINS VALUABLE PROPRIETARY AND CONFIDENTIAL INFORMATION OF FIRST SOLAR, INC. ("FIRST SOLAR") WHO RETAINS ALL COPYRIGHT RIGHTS TO IT UNDER 17 U.S.C. SECTION 106 AND IS PROTECTED BY U.S. AND INTERNATIONAL LAW. ANY REPRODUCTION, PREPARATION OF DERIVATIVE WORKS, DISTRIBUTION, PUBLIC PERFORMANCE OR DISPLAY, DISCLOSURE, AND/OR USE OF ALL, OR ANY PORTION, OF THIS PUBLICATION IN ANY FORM OR MEDIUM WITHOUT SPECIFIC WRITTEN AUTHORIZATION FROM FIRST SOLAR IS STRICTLY PROHIBITED.

COPYRIGHT © 2014 DESERT QUARTZITE, LLC ALL RIGHTS RESERVED

SECTION 2.0
REGULATORY FRAMEWORK

2.1 INTRODUCTION

Each level of government – federal, state, and local—has adopted specific laws, ordinances, regulations, and standards (LORS) that regulate emissions and protect the health and welfare of the general public from specific air pollutants. The applicable LORS related to the potential air quality effects from the Project are described below. These LORS are administered (either independently or cooperatively) by the U.S. Environmental Protection Agency (EPA) Region 9, California Air Resources Board (ARB), and Mojave Desert Air Quality Management District (MDAQMD).

2.2 POLLUTANTS AND HEALTH EFFECT

2.2.1 Criteria Pollutants

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by the EPA and ARB as being of concern both on a nationwide and statewide level: ozone (O_3); carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM), which is subdivided into two classes based on particle size: Respirable PM equal to or less than 10 micrometers in diameter (PM_{10}) and Fine PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). Because the air quality standards for these air pollutants are regulated using human health and environmentally based criteria, they are commonly referred to as "criteria air pollutants."

2.2.1.1 <u>Ozone</u>

Ozone is the principal component of smog and is formed in the atmosphere through a series of reactions involving volatile organic compounds (VOC) and nitrogen oxides (NO_x) in the presence of sunlight. VOC and NO_x are called precursors of ozone. NO_x includes various combinations of nitrogen and oxygen, including nitric oxide (NO), NO_2, and others. Ozone is a principal cause of lung and eye irritation in the urban environment. Significant ozone concentrations are usually produced only in the summer, when atmospheric inversions are greatest and temperatures are high. VOC and NO_x emissions are both considered critical in ozone formation.

2.2.1.2 <u>Carbon Monoxide</u>

CO is a colorless and odorless gas that, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high

concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Vehicle traffic emissions can cause localized CO impacts, and severe vehicle congestion at major signalized intersections can generate elevated CO levels, called "hot spots," which can be hazardous to human receptors adjacent to the intersections.

2.2.1.3 Nitrogen Dioxide

NO_2 is a product of combustion and is generated in vehicles and in stationary sources, such as power plants and boilers. It is also formed when ozone reacts with NO in the atmosphere. As noted above, NO_2 is part of the NO_x family and is a principal contributor to ozone and smog generation. It is also a major contributor to $PM_{2.5}$.

2.2.1.4 Sulfur Dioxide

SO_2 is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO_2 is also a product of diesel engine combustion. SO_2 in the atmosphere contributes to the formation of $PM_{2.5}$ and acid rain.

2.2.1.5 Lead

Lead is a highly toxic metal that may cause a range of human health effects. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. EPA began working to reduce lead emissions soon after its inception, issuing the first reduction standards in 1973. Lead emissions have significantly decreased due to the near elimination of leaded gasoline use.

2.2.1.6 Particulate Matter

Particulate matter (PM) is a complex mixture of extremely small particles and liquid droplets. Particulate matter is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of particulate matter include windblown dust and ocean spray. The size of particulate matter is directly linked to the potential for causing health problems. EPA is concerned about particles that are 10 micrometers in diameter or smaller, because these particles generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Health studies have shown a significant association between exposure to particulate matter and premature death. Other important effects include aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems, such as heart attacks and irregular heartbeat. Individuals particularly sensitive to fine particle exposure include older adults,

people with heart and lung disease, and children. As previously discussed, EPA groups particulate matter into two categories, which are described below.

2.2.1.7 $PM_{2.5}$

Fine particles, such as those found in smoke and haze, are $PM_{2.5}$. Sources of fine particles include all types of combustion activities (motor vehicles, power plants, wood burning, etc.) and certain industrial processes. $PM_{2.5}$ is also formed through reactions of gases, such as SO_2 and nitrogen oxides, in the atmosphere. $PM_{2.5}$ is the major cause of reduced visibility (haze) in California.

2.2.1.8 PM_{10}

PM_{10} includes both fine and coarse dust particles; the fine particles are $PM_{2.5}$. Coarse particles, such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. Sources of coarse particles include crushing or grinding operations and dust from paved or unpaved roads. Control of PM_{10} is primarily achieved through the control of dust at construction and industrial sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads.

2.2.1.9 Other Pollutants

Besides the six primary criteria pollutants discussed above for which there are both Federal and State health standards, California has also adopted standards for sulfates (SO_4^{2-}), hydrogen sulfide (H_2S), visibility reducing particles, and vinyl chloride. As described below, these pollutants would either not be emitted or would not be of concern related to construction and operation of the proposed Project. The typical sources and health effects of these pollutants are summarized below for informational purposes.

Sulfates. Sulfates (SO_4^{2-}) are a particulate product that comes from the combustion of sulfur-containing fossil fuels. Major sources include fossil fueled power plants. In the presence of oxygen and a metal ion, SO_2 can form sulfates. The health effects associated with sulfates include respiratory illnesses, decreased pulmonary disease resistance and aggravation of cardiovascular diseases. For the proposed Project, sulfate emissions from combustion of fossil fuels in construction and operations phase vehicles and equipment would be minimal due in part to the low sulfur content in fuels (maximum 15 ppm sulfur by weight), pollution controls, and the low sulfate formation rate from combustion of applicable fuels.

Hydrogen Sulfide. H_2S emissions often are associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. At low concentrations H_2S, which has a characteristic “rotten egg” smell, may cause irritation to

the eyes, mucous membranes and respiratory system, dizziness and headaches. In high concentrations (800 ppm can cause death) hydrogen sulfide is extremely hazardous, especially in enclosed spaces. H_2S would not be emitted during construction and operation of the proposed Project.

Visibility Reducing Particles. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. Except for Lake County (which is designated attainment), California's attainment status with respect to visibility reducing particles is currently designated as unclassified. CARB has not established a method for measuring visibility with the precision and accuracy needed to designate areas as attainment or nonattainment. The proposed Project would limit emissions of fugitive dust and would not be a major contributor of visibility reducing particles during the construction or operational phases of the Project.

Vinyl Chloride. Vinyl chloride monomer is a sweet-smelling, colorless gas at ambient temperature. Landfills, wastewater treatment plants, and polyvinyl chloride (PVC) production are the major identified sources of vinyl chloride emissions in California. In humans, epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers. Vinyl chloride would not be produced by construction or operation of the proposed Project.

2.2.2 Toxic Air Contaminants

Toxic air contaminants (TAC) are substances that have the potential to be emitted into the ambient air that have been determined to present some level of chronic or acute health risk (cancer or non-cancer) to the general public. These pollutants may be emitted in trace amounts from various types of sources, including combustion sources.

Since no safe levels of TACs can be determined, there are no ambient air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) apply to facilities that use, produce, or emit toxic chemicals. Facilities that are subject to the toxic emission inventory requirements of the act must prepare and submit toxic emission inventory plans and reports and periodically update those reports.

The main TACs that are emitted from mobile sources such as those that would be operating to construct and operate the Project include those substances that the EPA and the Federal Highway Administration (FHWA) have identified as Mobile Source Air Toxics. The EPA reviewed the list of TACs and identified a group of 21 TAC's as Mobile Source Air Toxics (MSAT), which are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates

or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. EPA refined the list further, compiling a subset of six priority MSATs identified as having the greatest influence on health. These included: benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and diesel particulate matter (DPM). The most critical TAC in this MSATs group is DPM from the diesel exhaust.

2.2.3 Greenhouse Gases

Constituent gases of the Earth's atmosphere, called atmospheric GHGs, play a crucial role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent GHGs contributing to this process include CO_2, methane (CH_4), water vapor, nitrous oxide (N_2O), perfluorocarbons (PFC), hydrofluorocarbons (HFC), sulfur hexafluoride (SF6), and chlorofluorocarbons (CFC). This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these GHGs in excess of natural ambient concentrations are responsible for the enhancement of the greenhouse effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses.

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas" (EPA 2015). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main greenhouse gases that have been attributed to human activity include CH_4, which has a GWP of 28, and N_2O, which has a GWP of 265. Transportation is responsible for 37 percent of California's greenhouse gas emissions, followed by electricity generation. Emissions of O_2 and N_2O are byproducts of fossil fuel combustion. SF6 is used in electrical transformers. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of O_2, where O_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. (ARB 2015a)

2.2.4 Odors

Odors are considered an air quality issue both at the local level (e.g., odor from wastewater treatment) and at the regional level (e.g., smoke from wildfires). Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

Several examples of common land use types that generate substantial odors include wastewater treatment plants, landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants.

2.2.5 Health Effects

2.2.5.1 Criteria Pollutants

Ozone. Individuals exercising outdoors, children, and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible sub-groups for ozone effects. Short-term exposure (lasting for a few hours) to ozone can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. An increased risk for asthma has been found in children who participate in multiple sports and live in communities with high ozone levels.

Particulate Matter. A consistent correlation between elevated PM_{10} and $PM_{2.5}$ levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. Some studies have reported an association between long term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in $PM_{2.5}$ concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children, and to increased medication use in children and adults with asthma. Studies show lung function growth in children is reduced with long-term exposure to particulate matter. The elderly, people with pre-existing respiratory or cardiovascular disease, and children appear to be more susceptible to the effects of high levels of PM_{10} and $PM_{2.5}$.

Carbon Monoxide. Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of decreased oxygen (O_2) supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport. Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include fetuses, patients with diseases involving heart and blood vessels, and patients with chronic hypoxemia (oxygen deficiency) as seen at high altitudes.

Nitrogen Dioxide. Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children, is associated with long-

term exposure to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in southern California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2 in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

Sulfur Dioxide. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, are observed after acute exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO_2. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Lead. Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. Exposure to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death; although, it appears that there are no direct effects of lead on the respiratory system.

Other Pollutants. As discussed in Section 2.2.1.9, California has adopted standards for SO_4, H_2S, visibility reducing particles, and vinyl chloride. Project-related emission of these pollutants would be negligible or non-existent and, thus, the associated health effects of these pollutants related to the proposed Project are not addressed herein.

2.2.5.2 Toxic Air Contaminants

The following specific descriptions of health effects for each of the criteria air pollutants associated with project construction and operations are based on information on health effects of TACs from the California Office of Environmental Health Hazard Assessment (OEHHA 2012) and the EPA (USEPA 2012).

Diesel Particulate Matter. Diesel particulate matter (DPM) is emitted from both mobile and stationary sources. In California, on-road diesel-fueled engines contribute approximately 24 percent of the statewide total, with an additional 71 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about five percent of total DPM. Diesel exhaust includes over 40 substances that are listed by the EPA as hazardous air pollutants and by the ARB as toxic air contaminants. Fifteen of these substances are listed by the

International Agency for Research on Cancer (IARC) as carcinogenic to humans, or as a probable or possible human carcinogen. Some of these substances are: acetaldehyde; antimony compounds; arsenic; benzene; beryllium compounds; bis (2-ethylhexyl)phthalate; dioxins and dibenzofurans; formaldehyde; inorganic lead; mercury compounds; nickel; polycyclic organic matter (POM, including polycyclic aromatic hydrocarbon compounds [PAHs]); and styrene. Almost all of the diesel particle mass is in the fine particle range of 10 microns or less in diameter (PM_{10}). Approximately 94 percent of the mass of these particles are less than 2.5 microns in diameter. Because of their small size, these particles can be inhaled and a portion will eventually become trapped within the small airways and alveolar regions of the lung.

A number of adverse short-term health effects have been associated with exposures to diesel exhaust. Occupational exposures to diesel exhaust particles have been associated with significant cross-shift decreases in lung function. Increased cough, labored breathing, chest tightness, and wheezing have been associated with exposure to diesel exhaust in bus garage workers. A significant increase in airway resistance and increases in eye and nasal irritation were observed in human volunteers following one-hour chamber exposure to diesel exhaust. In acute or subchronic animal studies, exposure to diesel exhaust particles induced inflammatory airway changes, lung function changes, and increased the animals' susceptibility to infection. A number of adverse long-term non-cancer effects have been associated with exposure to diesel exhaust. Occupational studies have shown that there may be a greater incidence of cough, phlegm and chronic bronchitis among those exposed to diesel exhaust than among those not exposed. Reductions in pulmonary function have also been reported following occupational exposures in chronic studies. Exposure to diesel exhaust has also shown cellular changes in laboratory animals.

Over 30 human epidemiological studies have investigated the potential carcinogenicity of diesel exhaust. These studies, on average, found that long-term occupational exposures to diesel exhaust were associated with a 40 percent increase in the relative risk of lung cancer. The lung cancer findings are consistent and the association is unlikely to be due to chance. These epidemiological studies strongly suggest a causal relationship between occupational diesel exhaust exposure and lung cancer.

Acrolein. Acrolein is usually formed from the burning of organic matter including tobacco or from the burning of fuels such as gasoline. Acrolein is a powerful irritant. Due to its highly reactive nature, the effects of acrolein are generally limited to the site of contact; skin, eyes and mucous membranes. Inhalation exposure to low levels (≤ 1 part per million [ppm]) causes irritation of the eyes, nose and throat. Acute exposures to levels above 1 ppm result in mucous hypersecretion and exacerbation of allergic airway response in animal models. Moderately higher exposures may result in severe lacrimation, and irritation of the mucous membranes of the respiratory tract. Death due to respiratory failure has been associated with high level exposures. Long term exposure to acrolein may result in structural and functional

changes in the respiratory tract, including lesions in the nasal mucosa, and pulmonary inflammation.

1,3–Butadiene. Motor vehicle exhaust is a constant source of 1,3-butadiene. Although 1,3-butadiene breaks down quickly in the atmosphere, it is usually found in ambient air at low levels in urban and suburban areas. Acute (short-term) exposure to 1,3-butadiene by inhalation in humans results in irritation of the eyes, nasal passages, throat, and lungs. Epidemiological studies have reported a possible association between 1,3-butadiene exposure and cardiovascular diseases. Epidemiological studies of workers in rubber plants have shown an association between 1,3-butadiene exposure and increased incidence of leukemia. Animal studies have reported tumors at various sites from 1,3-butadiene exposure. The EPA has classified 1,3-butadiene as carcinogenic to humans by inhalation.

Benzene. Approximately 84 percent of the benzene emitted in California comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. Currently, the benzene content of gasoline is less than one percent. Benzene is found in the air from emissions from burning coal and oil, gasoline service stations, and motor vehicle exhaust. Acute (short-term) inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidence of leukemia (cancer of the tissues that form white blood cells) have been observed in humans occupationally exposed to benzene. The EPA has classified benzene as a human carcinogen.

Formaldehyde. Exposure to formaldehyde may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air. Acute (short-term) and chronic (long-term) inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. The EPA considers formaldehyde a probable human carcinogen. The non-cancer adverse health effects of formaldehyde are largely a manifestation of its ability to irritate mucous membranes. As a result of its solubility in water and high reactivity, formaldehyde is efficiently absorbed into the mucus layers protecting the eyes and respiratory tract where it rapidly reacts, leading primarily to localized irritation. Acute high exposure may lead to eye, nose and throat irritation, and in the respiratory tract, nasal obstruction, pulmonary edema and dyspnea. Prolonged or repeated exposures have been associated with allergic sensitization, respiratory symptoms (coughing, wheezing, shortness of breath), histopathological changes in respiratory epithelium, and decrements in lung function. Children, especially those with diagnosed asthma, may be more

likely to show impaired pulmonary function and symptoms than are adults following chronic exposure to formaldehyde.

2.2.5.3 Odors

Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the VOCs that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance, by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

2.3 FEDERAL REGULATIONS

2.3.1 National Environmental Policy Act

NEPA establishes a public, interdisciplinary framework for Federal agencies reviewing projects under their jurisdiction to consider environmental impacts. NEPA's basic policy is to assure that all branches of government give proper consideration to the environment prior to undertaking any major Federal action that significantly affects the environment.

The BLM, as lead Federal agency for the Project, is responsible for preparation of an EIS in compliance with NEPA to evaluate the environmental impacts of the portions of the Desert Quartzite Solar Project on Federal lands (BLM 2008). The Desert Quartzite Solar Project and the Project gen-tie line are located on lands administered and managed by the BLM. Therefore, NEPA compliance will be required for these portions of the Project through preparation of a Draft and Final EIS. BLM is also responsible for Native American consultation, including government-to-government consultation.

2.3.2 Clean Air Act

The EPA implements and enforces the requirements of many of the Federal environmental laws. EPA Region 9, which has its offices in San Francisco, administers Federal air programs in California. The Federal Clean Air Act (CAA) of 1970, 42 United States Code 7401 *et seq*., as amended in 1977 and 1990, is the basic Federal statute governing air pollution and its control. The provisions of the CAA that are potentially relevant to this Project are listed below and their applicability is discussed in the following sections:

- Air Quality Control Regions
- National Ambient Air Quality Standards
- General Conformity Compliance
- Greenhouse Gas Endangerment

- Clean Vehicles

The Project is not expected to have any stationary sources of emissions during the operational phase and will not store or handle substantive quantities hazardous materials during its construction and operation. Therefore, the Project will not be subject to the Federal stationary source regulations and requirements, such as Prevention of Significant Deterioration (PSD), New Source Review (NSR), New Source Performance Standards (NSPS), Maximum Achievable Control Technology (MACT), Federally Mandated Operating Permits, and Risk Management Plan (RMP).

2.3.2.1 Air Quality Control Regions

Because air pollution is a regional problem and not limited to political or state boundaries, the Federal CAA established Air Quality Control Regions. This is a method of dividing the country into regional air basins. The Project Site is located in the Southeast Desert Sea Intrastate Air Quality Control Region (40 CFR Part 81.167).

2.3.2.2 National Ambient Air Quality Standards

EPA, in response to the Federal CAA of 1970, established National Ambient Air Quality Standards (NAAQS) in 40 CFR Part 50. The NAAQS include both primary and secondary standards for six "criteria" pollutants. These criteria pollutants are O_3, CO, NO_2, SO_2, respirable and fine particulate matter (PM_{10} and $PM_{2.5}$), and lead.

Primary standards were established to protect human health, and secondary standards were designed to protect property and natural ecosystems from the effects of air pollution.

The State of California has adopted California Ambient Air Quality Standards (CAAQS) that are in some cases more stringent than the NAAQS and which regulate the allowable air concentrations of additional pollutants. The CAAQS and NAAQS are summarized in Table 2-1, National and California Ambient Air Quality Standards (ARB 2015b), and include standards for H_2S and vinyl chloride which are not relevant to the Project.

The EPA, ARB, and the local air districts determine air quality attainment status by comparing local ambient air quality measurements from the State or local ambient air monitoring stations with the NAAQS and CAAQS. Those areas that are below the standards are classified as "attainment" areas; areas that equal or exceed the standards are classified as "nonattainment" areas. Areas that have insufficient air quality data may be identified as unclassifiable areas. These attainment designations are determined on a pollutant-by-pollutant basis. The Project vicinity is designated as a State nonattainment area for O_3 and PM_{10} based on air quality monitoring data showing exceedances of the State standards.

TABLE 2-1
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

		California Standards [a]	National Standards [b]	
Pollutant	Averaging Time	Concentration [c]	Primary [c, d]	Secondary [e]
Ozone	1 hour	0.09 ppm (180 µg/m^3)	–	Same as primary standard
	8 hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Respirable particulate matter (PM_{10}) [f]	24 hour	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	–	
Fine particulate matter ($PM_{2.5}$) [f]	24 hour	–	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	12.0 µg/m^3	15 µg/m
Carbon monoxide (CO)	8 hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
	8 hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
Nitrogen dioxide (NO_2) [g]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary standard
	1 hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None
Sulfur dioxide (SO_2) [h]	Annual arithmetic mean	–	0.030 ppm (for certain areas) [h]	–
	24 hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas) [h]	–
	3 hour	–	–	0.5 ppm (1,300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–
Lead [i, j]	30-day average	1.5 µg/m^3	–	–
	Calendar quarter	–	1.5 µg/m^3 (for certain areas) [j]	Same as primary standard
	Rolling 3-month average	–	0.15 µg/m^3	
Visibility-reducing particles [k]	8 hour	See footnote k	No national standards	
Sulfates	24 hour	25 µg/m^3	No national standards	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)	No national standards	
Vinyl chloride [i]	24 hour	0.01 ppm (26 µg/m^3)	No national standards	

TABLE 2-1 (CONTINUED)
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Notes:
mg/m^3 = milligrams per cubic meter; ppb = parts per billion; ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standards.

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

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

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

[f] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[g] 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. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from 100 ppb to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 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. 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 of 0.075 ppm.

[i] 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.

[j] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until 1 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 standards are approved.

[k] In 1989, 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 the “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: California ARB 2015b.

Table 2-2, Attainment Status for the eastern portion of Riverside County with respect to NAAQS and CAAQS, presents the attainment status of the MDAQMD with respect to both Federal and State ambient standards (ARB 2015c). Figure 3, MDAQMD Boundary and Project Vehicle Miles, presents the boundary of MDAQMD jurisdiction boundary relative to the Project site and area roadways.

TABLE 2-2
ATTAINMENT STATUS FOR THE PORTION OF RIVERSIDE COUNTY WITHIN MDAQMD WITH RESPECT TO NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Federal Attainment Status	State Attainment Status
O_3	Unclassified/Attainment	Nonattainment
CO	Unclassified/Attainment	Unclassified
NO_2	Unclassified/Attainment	Attainment
SO_2	Unclassified	Attainment
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Unclassified/Attainment	Unclassified
Lead	Unclassified/Attainment	Attainment

Source: National Area Designations and State Area Designations, ARB, 2015 (http://www.arb.ca. gov/desig/adm/adm.htm).

2.3.2.3 General Conformity Compliance

Section 176 of the CAA requires that Federal agency activities, including licensing and permitting, within EPA-designated nonattainment or maintenance areas must comply with applicable General and Transportation Conformity Rules/Regulations. 40 CFR 93 § 153 defines the General Conformity *de minimis* levels, which are the minimum thresholds for which a conformity determination must be performed, for various criteria pollutants in various areas. The General Conformity *de minimis* levels are summarized in Table 2-3.

The General Conformity Rules ensure that the actions taken by Federal agencies in nonattainment and maintenance areas are consistent with ("conform to") a State's plans to attain the NAAQS. The BLM has a responsibility to conduct General Conformity analyses (and when applicable, issue formal conformity determinations) prior to conducting or approving activities within designated non-attainment or maintenance areas.

The MDAQMD has been the delegated local authority by the EPA to implement and enforce most Federal requirements that are applicable to the Project. Compliance with the MDAQMD regulations assures compliance and consistency with the corresponding Federal requirements as well.

TABLE 2-3
FEDERAL GENERAL CONFORMITY *DE MINIMIS* LEVELS

Pollutant	Area Type	Tons/Year
Ozone (VOC or NO_x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO_x)	Marginal and moderate nonattainment inside an ozone transport region	100
	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
CO, SO_2 and NO_2	All nonattainment and maintenance	100
PM_{10}	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
$PM_{2.5}$ – direct emissions, SO_2, NO_x (unless determined not to be a significant precursor), VOC or ammonia (if determined to be significant precursors)	All nonattainment and maintenance	100
Lead (Pb)	All nonattainment and maintenance	25

2.3.2.4 Greenhouse Gas Endangerment

On December 2, 2009, the EPA announced that GHGs threaten the public health and welfare of the American people. The EPA also stated that GHG emissions from on-road vehicles contribute to that threat. The decision was based on Massachusetts v. EPA (Supreme Court Case 05-1120) which argued that GHGs are air pollutants covered by the Clean Air Act and that the EPA has authority to regulate those emissions.

2.3.2.5 Clean Vehicles

Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce greenhouse gas emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applied to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They required these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO_2 level solely through fuel economy improvements. Together, these standards would cut CO_2 emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The second phase of the national program would involve proposing new fuel economy and GHG standards for model years 2017 through 2025.

On October 25, 2010, the EPA and the U.S. Department of Transportation proposed the first national standards to reduce greenhouse gas emissions and improve fuel efficiency of heavy-duty trucks and buses. For combination tractors, the agencies require engine and vehicle standards that begin in the 2014 model year and are expected to achieve up to a 20 percent reduction in carbon dioxide emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies require separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and are expected to achieve up to a 10 percent reduction for gasoline vehicles and 15 percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively, if accounting for air conditioning leakage). Lastly, for vocational vehicles, the agencies require engine and vehicle standards starting in the 2014 model year which are expected to achieve up to a 10 percent reduction in fuel consumption and carbon dioxide emissions by 2018 model year.

2.4 STATE REGULATIONS

2.4.1 California Environmental Quality Act

The CEQA Guidelines (OPR 2014) define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in the environment.” To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated. The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines. A significant impact would occur if the project would:

1. Conflict with or obstruct implementation of the applicable air quality plan
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)

4. Expose sensitive receptors to substantial pollutant concentrations
5. Create objectionable odors affecting a substantial number of people

Likewise, the following greenhouse gas significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 97. A significant impact would occur if the project would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment
2. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases

Riverside County, in cooperation with MDAQMD, will be the lead agency implementing CEQA for the Project. CEQA requires agencies to identify the significant environmental impacts of a project, and to avoid or mitigate those impacts, if feasible. The MDAQMD's CEQA thresholds are discussed in the Section 2.5. In addition, for the GHG, Riverside County utilizes a significance threshold of 3,000 metric ton of carbon dioxide equivalents (CO_2e) per year. For projects exceeding the threshold, project-specific mitigation is needed and should demonstrate a 25 percent reduction from the business as usual scenario. The future EIR work will comply with the procedures of Riverside County and the MDAQMD for implementing CEQA.

2.4.2 ARB Requirements

The California ARB's primary responsibilities are to develop, adopt, implement, and enforce the State's motor vehicle pollution control program; to administer and coordinate the State's air pollution research program; to adopt and update, as necessary, the CAAQS; to review the operations of the local air quality management districts (AQMD); and to review and coordinate preparation of the State Implementation Plan (SIP) for achievement of the NAAQS and CAAQS. Both the NAAQS and CAAQS are shown in Table 2-1. ARB has implemented the following State or Federal stationary source regulatory programs in accordance with the requirements of the Federal Clean Air Act and California Health & Safety Code (HSC):

- SIP
- California Clean Air Act
- Toxic Air Contaminant Program
- Airborne Toxic Control Measure for Stationary Compression-ignition Engines
- Nuisance Regulation
- Air Toxics "Hot Spots" Act

- Climate Change Regulatory Program

2.4.3 Health & Safety Code §39500 *et seq.* State Implementation Plan

Required by the Federal CAA, the SIP must demonstrate the means by which all areas of the State will attain and maintain NAAQS within the federally mandated deadlines. The local air districts prepare the SIP and ARB reviews and coordinates preparation of the SIP. Local districts must adopt new rules (and/or revise existing rules) and demonstrate that the resulting emission reductions, in conjunction with reductions in mobile source emissions, will result in the attainment of NAAQS. The relevant MDAQMD Rules and Regulations that have also been incorporated into the SIP are discussed in Section 2.5 (Local Regulations).

2.4.4 HSC §40910 – 40930 – California Clean Air Act

Established in 1989, the California Clean Air Act requires local districts to attain and maintain both national and State ambient air quality standards at the "earliest practicable date." Local districts must prepare air quality plans demonstrating the means by which the ambient air quality standards will be attained and maintained. The relevant components of the MDAQMD Air Quality Plan are discussed with the local regulations in Section 2.5.

2.4.5 HSC §39650 – 39675 – Toxic Air Contaminant Program

Established in 1983, the TAC Identification and Control Act created a two-step process to identify toxic air contaminants and control their emissions. ARB identifies and prioritizes the pollutants to be considered for identification as toxic air contaminants, and also assesses the potential for human exposure to a substance; the Office of Environmental Health Hazard Assessment (OEHHA) evaluates the corresponding health effects. Both agencies collaborate in the preparation of a risk assessment report, which concludes whether a substance poses a significant health risk and should be identified as a toxic air contaminant. In 1993, the Legislature amended the program to identify the 187 Federal hazardous air pollutants as toxic air contaminants. ARB reviews the emission sources of an identified toxic air contaminant and, if necessary, develops air toxics control measures to reduce the emissions.

TACs in California are regulated primarily through the Tanner Air Toxics Act (Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act (Chapter 1252, Statutes of 1987). Assembly Bill 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review must occur before ARB can designate a substance as a TAC. The Air Toxics Hot Spots Information and Assessment Act requires that TAC emissions from stationary sources be quantified and compiled into an inventory according to criteria and guidelines developed by ARB, and if directed to do so by the local air district, a health risk assessment (HRA) must be prepared to determine the potential health impacts of such emissions.

OEHHA recently published its Revised Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments on March 6, 2015. ARB also adopted this guidance and issued its Hotspots Analysis and Reporting Program Version 2 (HARP 2), which is an updated software suite used to assist with the programmatic requirements of the Air Toxics "Hot Spots" Program for the permitting and the compliance of AB2588.

2.4.6 Title 17, California Code of Regulations, §93115 – Airborne Toxic Control Measure for Stationary Compression-ignition Engines

The purpose of the airborne toxic control measure (ATCM) is to reduce DPM and criteria pollutant emissions from stationary Diesel-fueled compression ignition engines. The ATCM applies to stationary compression-ignition engines with a rating greater than 50 brake horsepower. The ATCM requires the use of ARB-certified Diesel fuel or equivalent, and limits emissions from, and operations of, compression ignition engines. Owners or Operators of portable engines and certain other types of equipment can register their units under the ARB's Statewide Portable Equipment Registration Program (PERP) in order to operate their equipment throughout California without having to obtain individual permits from local air districts.

2.4.7 California Health & Safety Code §41700 – Nuisance Regulation

This regulation provides that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

2.4.8 Stats. 2006, Ch. 488 and California Health & Safety Code § 38500–38590 – California Climate Change Regulatory Program

The State of California adopted the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) on September 27, 2006, which requires sources within the State to reduce carbon emissions by approximately 25 percent by the year 2020. The California Climate Action Registry had already published protocols for voluntary reporting of GHG emissions from a number of sectors of the economy, and ARB has adopted regulations to limit GHG emissions from electric power plants and other specific source categories. In addition, ARB has issued guidance with recommended emission factors for calculating GHG emissions.

AB 32 also sets the following milestone dates for ARB to take specific actions:

- **June 30, 2007.** Identify a list of discrete early action GHG emission reduction measures (first report published April 20, 2007, with additional measures adopted on October 25, 2007).

- **January 1, 2008.** Establish a statewide GHG emission cap for 2020 that is equivalent to 1990 emissions.
- **January 1, 2008.** Adopt mandatory reporting rules for significant sources of GHGs.
- **January 1, 2009.** Adopt a scoping plan that will indicate how GHG emission reductions will be achieved from significant GHG sources through regulations, market-based compliance mechanisms, and other actions, including recommendation of a de minimis threshold for GHG emissions, below which sources would be exempt from reduction requirements.
- **January 1, 2011.** Adopt regulations to achieve maximum technologically feasible and cost-effective GHG emission reductions, including provisions for both market-based and alternative compliance mechanisms.
- **January 1, 2012.** Regulations adopted prior to January 1, 2010, become effective.
- **January 1, 2013.** Cap-and-Trade program begins.
- **May 22, 2014.** ARB approves its First Update to the Climate Change Scoping Plan.
- **December 31, 2020.** Deadline for achieving 2020 GHG emissions cap.

The ARB Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the California's strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (California Air Resources Board 2008). The measures in the Scoping Plan have been in place since 2012.

In May 2014, ARB released its First Update to the Climate Change Scoping Plan (ARB 2014). This Update identifies the next steps for California's leadership on climate change. While California continues on its path to meet the near-term 2020 greenhouse gas limit, it must also set a clear path toward long-term, deep GHG emission reductions. This report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. ARB approved its First Update to the Climate Change Scoping Plan on May 22, 2014.

Senate Bill (SB) 97, adopted August 21, 2007, required the California Office of Planning and Research (OPR) to develop CEQA guidelines "for the mitigation of GHG emissions or the effects of GHG emissions" by July 1, 2009. SB 97 further required the Resources Agency Secretary to adopt these CEQA guidelines by January 1, 2010. Finally, SB 97 removes GHG emissions as a cause of action under CEQA for specified State-financed infrastructure projects until January 1, 2010.

The Project EIR/EIS is required to include the Project's emission rates of greenhouse gases (CO_2, CH_4, N_2O, and SF_6) from all on-site and off-site (direct and indirect) emission sources, including diesel equipment, delivery trucks, worker vehicles, maintenance vehicles, and the diesel firewater pump (if any).

2.4.9 Pavley Regulations

California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. The regulation was stalled by automaker lawsuits and by the EPA's denial of an implementation waiver. On January 21, 2009, the ARB requested that the EPA reconsider its previous waiver denial. On January 26, 2009, President Obama directed that the EPA assess whether the denial of the waiver was appropriate. On June 30, 2009, the EPA granted the waiver request.

The standards phase in during the 2009 through 2016 model years. When fully phased in, the near term (2009–2012) standards will result in about a 22-percent reduction compared with the 2002 fleet, and the mid-term (20132016) standards will result in about a 30-percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.

2.5 LOCAL REGULATIONS

When California's air pollution statutes were reorganized in the mid-1960s, local districts were required to be established in each county of the State. There are three different types of districts: county, regional (including the MDAQMD), and unified. In addition, special air quality management district (AQMD), with more comprehensive authority over non-vehicular sources, as well as transportation and other regional planning responsibilities, have been established by the Legislature for several regions in California. Local districts have principal responsibility to do the following:

- Develop plans for meeting the NAAQS and CAAQS
- Develop control measures for non-vehicular sources of air pollution necessary to achieve and maintain both state and federal air quality standards
- Implement permit programs established for the construction, modification, and operation of sources of air pollution
- Enforce air pollution statutes and regulations governing non-vehicular sources

- Develop programs to reduce emissions from indirect sources

2.5.1 HSC §40914 – Mojave Desert Air Quality Plans

Air quality plans define the proposed strategies, including stationary source and transportation control measures and new source review rules that will be implemented to attain and maintain the State ambient air quality standards. The proposed Project is located in the southern and eastern portion of MDAQMD's jurisdictional area. There is no applicable MDAQMD air quality plan or SIP for this area. However, the relevant MDAQMD requirements are discussed with Rules and Regulations in the following Section.

2.5.2 MDAQMD's CEQA Significance Thresholds (MDAQMD 2011)

Any project in the MDAQMD area will be determined significant if it triggers or exceeds the most appropriate evaluation criteria listed in MDAQMD's "CEQA and Federal Conformity Guidelines (August 2011)". The criteria are summarized as follows. In general, the emissions comparison (criteria number 1) is sufficient:

1. Generates total emissions (direct and indirect) in excess of the thresholds given in Table 2-4

TABLE 2-4
MDAQMD'S CEQA SIGNIFICANT EMISSIONS THRESHOLDS[1]

Pollutant	Annual Threshold (Tons)	Daily Threshold (Pounds)
Greenhouse gases (CO_2e)	100,000	548,000
Carbon monoxide (CO)	100	548
Oxides of nitrogen (NO_x)	25	137
Volatile organic compounds (VOC)	25	137
Oxides of sulfur (SO_x)	25	137
Particulate matter (PM_{10})	15	82
Particulate matter ($PM_{2.5}$)	15	82
Hydrogen Sulfide (H_2S)	10	54
Lead (Pb)	0.6	3

[1] Source: MDAQMD CEQA and Federal Conformity Guidelines, 2011.

2. Generates a violation of any ambient air quality standard when added to the local background
3. Does not conform with the applicable attainment or maintenance plan(s)

4. Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1 (*refer to the Sensitive Receptor Land Use discussion above)

The MDAQMD requires projects with significant emissions to incorporate mitigation sufficient to reduce its impact to a level that is not significant. A project that cannot be mitigated to a level that is not significant must incorporate all feasible mitigation. Note that the emission thresholds are given as a daily value and an annual value, so that multi-phased projects (such as a project with a construction phase and a separate operational phase) with phases shorter than one year can be compared to the daily value.

2.5.3 HSC §4000 et seq., HSC §40200 *et seq*., Indicated MDAQMD Rules – MDAQMD Rules and Regulations (MDAQMD 2015)

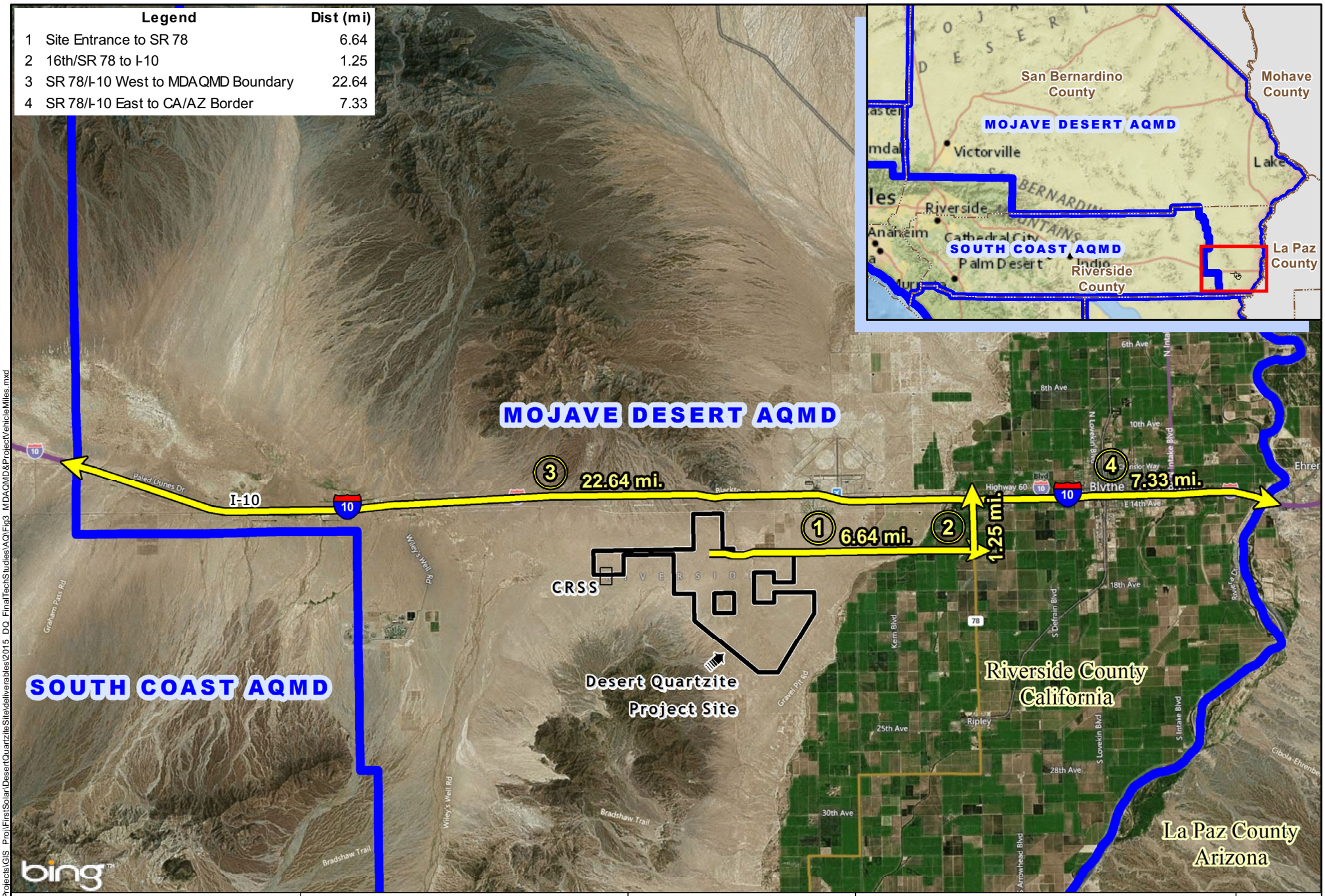
The MDAQMD has jurisdiction over the Desert Quartzite Solar Project, as discussed above. The general prohibitory rules in Regulation IV applicable to the Project are summarized below:

- **Rule 401 – Visible Emissions.** Prohibits visible emissions as dark as, or darker than, Ringelmann No. 1 for periods greater than three minutes in any hour.

- **Rule 402 – Nuisance.** Prohibits the discharge from a facility of air pollutants that cause injury, detriment, nuisance, or annoyance to the public, or that damage business or property.

- **Rule 403 – Fugitive Dust.** Prohibits visible dust emissions off property due to transport, handling, construction, or storage activity. Requires dust minimization during grading and clearing of land. Limits the difference between upwind and downwind PM concentrations of 100 $\mu g/m^3$ (5 hour average). Requires removal of particulate matter from equipment prior to movement on paved streets.

In addition, the MDAQMD's Regulation XX – Conformity (Federal General Conformity Rules) is also applicable to the Project.



Document Path: V:\Projects\GIS Proj\FirstSolar\DesertQuartziteSite\deliverables\2015 DQ FinalTechStudies\AQ\Fig3 MDAQMD&ProjectVehicleMiles.mxd

Air Quality Technical Study **Desert Quartzite Solar Project** **Riverside County, CA** **URS Corporation**	0 1 2 3 4 5 Miles 0 2 4 6 8 Kilometers	**Source:** [1] Bing Maps Aerial Imagery Web Mapping Service - (c) 2010 Microsoft Corporation and its datas upplier (Image Date: 3/13/2011).	**Figure 3.** MDAQMD Boundary and Project Vehicle Miles	2015

SECTION 3.0
EXISTING BASELINE CONDITIONS

3.1 INTRODUCTION

As discussed in Section 1.1, the Project is proposed to be located within an overall Project site encompassing approximately 5,275 acres, including the 445-acre gen-tie line study corridor in the Blythe area of Riverside County. The solar facility is proposed to be constructed within an approximately 3,714-acre fenced portion of the overall site.

Sensitive receptors are people who are considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health conditions, age, proximity to emissions sources, or duration of exposure to air pollutants. Schools, hospitals, and convalescent homes are considered to be sensitive to poor air quality because children, elderly people, and the infirmed are more susceptible to respiratory distress and other air quality related health problems than the general public. Residential areas are considered sensitive to poor air quality because people are located in one place for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses may also be considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human breathing rates and respiratory system.

The Project area was surveyed for sensitive air quality receptors (e.g., schools, hospitals, churches, and recreational facilities). No schools, hospitals, convalescent homes or any other sensitive receptors are located within 1 mile of the proposed Project. The closest residence (apparent occupied mobile home trailer) is located approximately 3,700 feet north of the northeast corner of the Project boundary. The next two closest sensitive air quality receptors are located in the residential community of Nicholls Warm Springs/Mesa Verde approximately 5,200 and 5,350 feet north of the northeast corner of the Project site boundary.

Areas that do not meet the NAAQS or CAAQS (see Table 2-2 for designations) for a given criteria pollutant are designated as “nonattainment areas” by the EPA and/or the ARB. Further classifications are given to nonattainment areas to identify the severity and number of violations experienced, and the year in which attainment is anticipated based on implementation of attainment plans. The Project area is located in a portion of the Mojave Desert air basin considered an unclassified/attainment area for all of the NAAQS. The Project area is designated a moderate nonattainment area for the O_3 CAAQS and a nonattainment area for the PM_{10} CAAQS. The Project area is designated as unclassified/attainment for all CAAQS for the other criteria pollutants.

3.2 REGIONAL CLIMATE

Consistent with the typical weather of the interior deserts of Southern California, eastern Riverside County generally has an arid climate characterized by very low precipitation, hot summers, and mild winters. Temperature inversions may occur, but they not as strong as in coastal areas, where the marine influence plays an important role. The area's climatic conditions are strongly influenced by the large-scale sinking and warming of air in the semi-permanent subtropical high-pressure center over the eastern Pacific. This high-pressure system effectively blocks out most mid-latitude storms, except in winter when the ridge is weaker and farther south. The coastal mountains to the west also have a major influence on climate, serving as a meteorological boundary that effectively removes moisture from the marine air flowing from the Pacific.

The nearest full-time meteorological monitoring station to the proposed Project site is maintained at the Blythe Airport approximately 2.5 miles northeast of the Project site at latitude 33°37'N, longitude 114°43'W. Based on 86 years of climate data available from the U.S. Historical Climatological Network (1909-1994), the annual average temperature measured at Blythe is 70 degrees Fahrenheit (°F). Temperatures of 32°F or below rarely occur at this station, but temperatures of 100°F or above are more frequent, occurring from June through September. During the fall, Santa Ana winds can last for several days. These are strong, dry northerly winds from the Great Basin and result in high temperatures (greater than 90°F) and low relative humidity (often below 20 percent) in the Project area.

The average temperature and precipitation data collected at National Weather Service Blythe Airport station over a 60-year period (1949–2010) are presented in Table 3-1. The hottest month, July, has an average maximum temperature of 108.4°F and an average minimum temperature of 81.1°F. The coldest month, January, has an average maximum temperature of 66.8°F and an average minimum temperature of 41.6°F.

TABLE 3-1
AVERAGE TEMPERATURE AND PRECIPITATION DATA AT BLYTHE (1949–2010)

Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Avg. max. temp. (°F)	66.8	72.0	78.4	86.4	95.2	104.5	108.4	106.7	101.4	89.8	76.0	66.6	87.7
Avg. min. temp. (°F)	41.6	45.4	50.2	56.5	64.5	72.7	81.1	80.2	73.1	60.8	48.6	41.2	59.7
Avg. total precipitation (in.)	0.49	0.44	0.36	0.15	0.02	0.02	0.23	0.62	0.35	0.26	0.20	0.41	3.54

Source: Western Regional Climate Center (http://www.wrcc.dri.edu) (WRCC 2015).

Monthly mean precipitation amounts at Blythe range from 0.02 inch in May or June to 0.62 inch in August. Relative humidity levels are generally low. In the summer, relative humidity averages 20 to 40 percent in the early morning and 10 to 30 percent in the afternoon. In winter, relative humidity averages 30 to 50 percent in the early morning and 10 to 30 percent in the afternoon. Wind speeds are normally light or calm.

Eastern Riverside County receives a portion of its annual rainfall from November to March, when the semi-permanent high-pressure system over the eastern Pacific Ocean moves south, allowing storms to move through the area; and another portion of its annual rainfall at the height of summer, when the southwestern monsoon is present. In August, the boundary between the easterly, tropical trade winds and the mid-latitude westerlies sometimes moves north of the Project site, and thunderstorms can develop and move into the vicinity. The average annual precipitation at the Blythe meteorological station is about 3.5 inches. Local wind circulations are channeled north-south through the Colorado River Valley. Winds are typically of light to moderate strength from either the northwest or the south. An annual wind rose is presented on Figure 4.

3.3 EXISTING AMBIENT AIR QUALITY

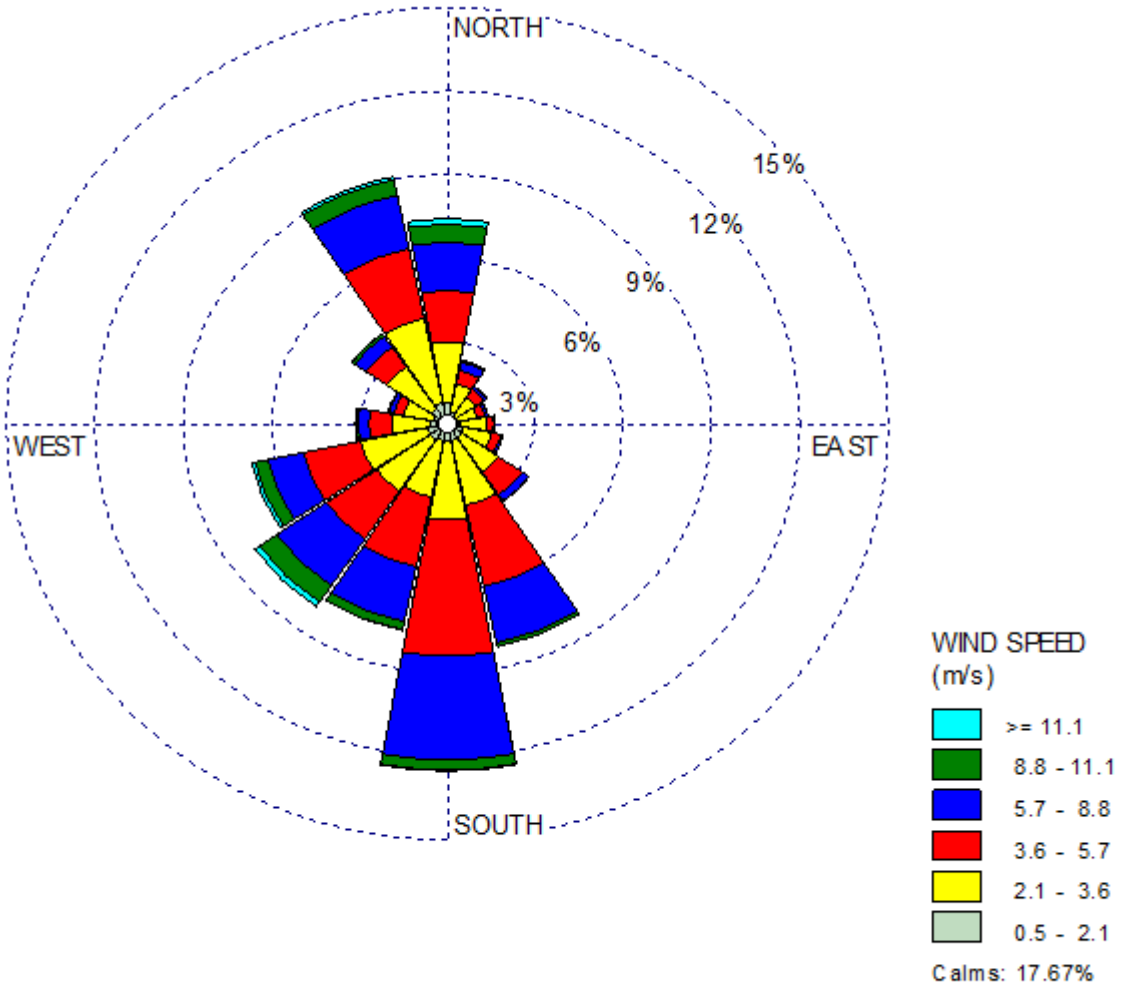
Ambient air concentrations of O_3, NO_2, SO_2, CO, PM_{10}, and $PM_{2.5}$ are recorded at monitoring stations in Riverside County operated by ARB and/or MDAQMD. Ambient air quality monitoring data for O_3, PM_{10}, $PM_{2.5}$, CO, NO_2, and SO_2 were compared to the most stringent applicable standards for the years 2011 through 2013 at the most representative monitoring stations for each pollutant in Table 3-2. O_3 data are from the Blythe-445 West Murphy Street monitoring station; PM_{10}, $PM_{2.5}$, NO_2, and CO data are from the Palm Springs Fire Station monitoring station; and SO_2 data are from the Victorville-14306 Park Avenue monitoring station.

TABLE 3-2
AIR QUALITY DATA FOR THE BLYTHE PROJECT AREA (2011–2013)

Pollutant	Parameter	2011	2012	2013
Ozone (O_3)	Peak 1-hour value (ppm)	0.073	0.084	0.065
	Days above the CAAQS (0.09 ppm)	0	0	0
	Peak 8-hour value CAAQS (ppm)	0.068	0.077	0.061
	Design value 8-hour NAAQS (ppm)	ND	0.068	0.066
	Days above the CAAQS (0.070 ppm)	0	12	0
	Days above the NAAQS (0.075 ppm)	0	2	0
Nitrogen dioxide (NO_2)	Peak 1-hour value (ppb)	45	45	52
	Design value 1-hour NAAQS (ppb)	39	39	39
	Days above the CAAQS (180 ppb)	0	0	0
	Days above the NAAQS (100 ppb)	0	0	0
	Annual Average (ppb)	8	8	7
Respirable Particulate matter less than or equal to 10 microns in diameter (PM_{10})	Peak 24-hour value (µg/m^3)	42	37	129
	High second high 24-hour value (µg/m^3)	38	30	83
	Days above CAAQS (50 µg/m^3)	0	0	2
	Days above NAAQS (150 µg/m^3)	0	0	0
	Annual Average (µg/m^3)	18.1	16.1	22.1
Fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$)	Design value 24-hour NAAQS (µg/m^3)	13	13	13
	Days above NAAQS (35 µg/m^3)	0	0	0
	Annual average (µg/m^3)	6	6.5	6.5
	Design value annual NAAQS (µg/m^3)	6.2	6.1	6.3
Carbon monoxide (CO)	Peak 1-hour value (ppm)	3	0.9	3.2
	Days above the NAAQS (35 ppm)	0	0	0
	Peak 8-hour value (ppm)	0.65	0.45	ND
	Days above the CAAQS (9.0 ppm)	0	0	0
	Days above the NAAQS (9 ppm)	0	0	0
Sulfur dioxide (SO_2)	Peak 1-hour value (ppm)	0.013	0.006	0.004
	Days above the CAAQS (0.25 ppm)	0	0	0
	Days above the NAAQS (0.075 ppm)	0	0	0
	Peak 24-hour value (ppm)	0.007	0.003	0.002
	Days above the CAAQS (0.04 ppm)	0	0	0

Notes:
ND = no data available.
Monitoring data from EPA and ARB monitoring databases http://www.epa.gov/airdata/ and http://www.arb.ca.gov/adam/.
O_3 data are from Blythe; PM_{10}, $PM_{2.5}$, NO_2, and CO data are from Palm Springs; and SO_2 data are from Victorville.
2014 air quality monitoring data have not been fully QA/QC by ARB at the time this report was prepared. Therefore, these data are not presented in this Table.

Wind Speed/Direction (blowing from)



Air Quality Technical Study **Desert Quartzite Solar Project** **Riverside County, CA** URS Corporation	**Source:** Blythe Airport, 2006-2010	**Figure 4.** Annual Wind Rose (Blythe, CA 2006-2010)	2015

V:\Projects\GIS_Proj\FirstSolar\DesertQuartziteSite\deliverables\2015_DQ_FinalTechStudies\AQ\Fig4_AnnualWindRose.mxd

SECTION 4.0
IMPACT ASSESSMENT

4.1 IMPACT THRESHOLDS AND ASSESSMENT CRITERIA

Emission estimates have been prepared to evaluate air quality impacts from Project construction and operational activities under CEQA and NEPA. Effects due to the Project activities would be considered significant if they would exceed an applicable CEQA significant threshold or an applicable NEPA Federal general conformity de minimis level. These thresholds and criteria were discussed in Section 2.0. The specific Federal NEPA, Riverside County CEQA, and MDAQMD's CEQA thresholds for the Project were discussed in the Sections 2.3, 2.4, and 2.5 and presented in Tables 2-3 and 2-4. The Project data and assumptions used in the analyses, the methodology used in the emission calculations, the results, and findings from the analyses are described and are presented in the following sections.

4.2 ASSUMPTIONS AND METHODOLOGY

Project construction is anticipated to start in late 2016 for a 25-month construction timeframe which is considered to be the worst case for impact assessment purposes. The estimated construction workforce is expected to result in up to 450 vehicle trips per day, with a maximum of 810 vehicle trips per day during peak construction. The workforce is assumed to commute to the site from within 35 miles on average from the Project site and within the southern portion of the MDAQMD; it is common for a large portion of the workforce to voluntarily carpool regularly. In addition to commute trips by construction workers, approximately 14,400 truck deliveries of equipment, materials and fuel were estimated to be required over the course of the construction period. Construction phase-related truck deliveries are estimated to require one-way distances (within the boundaries of the MDAQMD) as follows: equipment and material deliveries at 30.5 miles; aggregate and concrete at 13 miles; and fuel at 10 miles. Construction activities will include site preparation and grading, solar array foundation installation, equipment installation, and gen-tie line tower and conductor installation along the gen-tie route. The Project plans to utilize groundwater from either local well(s) or via installation of on-site groundwater wells. Alternately, trucking water to the Project site from an off-site source(s) may be required for the entire assumed 25-month construction period, which would potentially require up to approximately 57,000 water deliveries. The worst-case water trucking scenario is included in the emission estimations. Construction of the proposed solar facilities would occur primarily within the approximately 3,714-acre fenced area and is estimated to involve up to 838,000 yards of balanced on-site cut-and-fill.

The primary emission sources during the construction of the Project would include exhaust from heavy construction equipment and vehicles and fugitive dust generated in areas

disturbed by grading, excavating, earth moving, and the movement of various construction vehicles around the site.

Fuel combustion emissions during construction would result from:

- Exhaust from the off-road construction equipment, including diesel construction equipment used for site grading, excavation, and construction of on-site structures, generators, and water trucks used to control construction dust emissions
- Exhaust from on-road construction vehicles, including diesel fuel trucks and water trucks used to transport fuel and water between Blythe local area and the construction site, and from diesel trucks used to deliver concrete, material, equipment, and construction supplies to the construction site
- Exhaust from vehicles used by workers to commute to the construction site

Fugitive dust emissions from the construction of the Project would result from:

- Site grading/excavation activities at the construction site
- Installation of the 230 kV gen-tie line foundations
- Installation of conductors along the gen-tie route
- Installation of solar array foundation and related equipment installation
- On-site vehicle and equipment travel on unpaved surfaces
- Off-site travel of worker vehicles and trucks on unpaved and paved roads

Construction equipment and vehicle exhaust emissions were estimated using equipment lists and construction scheduling information provided in the attached construction summary tables in the Appendix A. Mass emissions of all criteria pollutants and greenhouse gases from on-site diesel-fueled construction equipment were estimated using equipment-specific OFFROAD2011/2007 software published by the ARB. ARB's EMFAC2014 model was used to generate vehicle class specific emission factors for criteria pollutants and greenhouse gases for diesel and gasoline fueled on-road vehicles.

Assumptions used in calculating Project construction emissions included a 25-month construction period with 5 construction days per week (21 work-days per month). The weight and speed for equipment and vehicle were assumed from EMFAC/OFFROAD guidance, EPA AP-42, and other similar solar project and construction project experience. An approximate 0.1-mile travel distance from the Project laydown to Project access road entrance was assumed and used for the on-site unpaved road travelling emission calculations. Project-related vehicular traffic along an approximate 5.6-mile-long section of unpaved road from the Project access road site entrance to the east along 16th Avenue/Seeley Avenue prior

to reaching the paved roadway segment west of the intersection with SR-78 was also considered in the emission estimates. The Project-related vehicular traffic distances on off-site paved roads were measured and included in the emission estimates. All of the off-site road travel was assumed to be within the MDAQMD jurisdiction area.

Fugitive dust emissions resulting from on-site soil disturbances were estimated using EPA AP-42 emission factors for activities including bulldozing and dirt-pushing, travel on paved and unpaved roads, and material handling the aggregate materials. $PM_{2.5}$ emissions were scaled from factors determined using guidance from SCAQMD Final Methodology to Calculate $PM_{2.5}$ and $PM_{2.5}$ Significance Thresholds (10/1/2006, Appendix A Updated CEIDARS Table with $PM_{2.5}$ Fractions) (SCAQMD 2006).

For operation, the workforce for Operations and Maintenance (O&M) and security purposes was estimated to be 5 full-time workers. The expected annual demand for water is approximately 38 acre feet per year (AFY). Of this amount, approximately 20 AFY would be used for process water, fire protection, dust control, vegetation management, and at the O&M building, and 18 AFY would be used for up to two annual panel washings. Only limited deliveries would be necessary for replacement PV modules and equipment during Up to 25 daily round trips was estimated for workers and deliveries. The off-road equipment is not expected to be used during the Project operation. The methodology to estimate the operational emissions and construction emissions from the on-road vehicles are identical.

4.3 PROJECT EMISSION CONTROL MEASURES

The emission control measures of frequent watering (at least three times per day), and limiting speeds to 15 miles per hour were assumed to achieve a combined dust control efficiency of 83 percent (SCAQMD 2012) during temporary construction activities for traveling on unpaved surfaces at the Project site and the approximately 5.6-mile off-site unpaved access road (16th Avenue/Seeley Avenue) to SR-78. The 83 percent of combined dust mitigation efficiency from watering and limiting speeds to 15 miles per hour was also used for the bulldozing, grading, dirt piling, and material handling activities. All the dust generated from travelling on paved roads off-site was assumed to be non-mitigated for the purposes of estimating emissions.

The emission control measures of frequent watering (at least three times per day), and limiting speeds to 15 miles per hour were also assumed to achieve a combined dust control efficiency of 83 percent (SCAQMD 2012) for traveling on unpaved surfaces at the Project site and the approximately 5.6-mile off-site unpaved access road (16th Avenue/Seeley Avenue) to SR-78 during the operational phase of the Project. Alternately, and in lieu of watering 3 times daily, the Applicant may apply dust suppressants on unpaved road surfaces on an annual basis during the operational phase which is assumed to achieve the same dust control efficiency.

4.4 IMPACT ASSESSMENT RESULTS

The summary of Project construction emissions within the MDAQMD's jurisdiction and the applicable CEQA thresholds for this Project are presented in Table 4-1 and Table 4-2 below. The detailed construction data and information are presented in Appendix A.

A summary of Project operational emissions within the MDAQMD's jurisdiction and the applicable CEQA thresholds for this Project are presented in Table 4-3 below. The detailed operational data and information can be found in the Appendix B. In addition, a summary of estimated Project GHG emissions within the MDAQMD's jurisdiction and the applicable CEQA thresholds for this Project are presented in Table 4-4. The detailed GHG emissions calculations, data and information are presented in Appendices A and B.

4.5 FINDINGS

The CEQA significance criteria for air quality and GHG from Appendix G (a) of the CEQA Guidelines were listed in Section 2.4.1. A significant air quality impact would occur if the project would:

a. Conflict with or obstruct implementation of the applicable air quality plan
b. 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 nonattainment under an applicable national or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)
d. Expose sensitive receptors to substantial pollutant concentrations
e. Create objectionable odors affecting a substantial number of people

A significant GHG impact would occur if the project would:

f. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment
g. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases

TABLE 4-1
PROJECT CONSTRUCTION DAILY EMISSION ESTIMATIONS (LBS/DAY)

Daily Emissions (Pounds per Day)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
On-site emissions	279.93	14.37	294.30	32.95	13.22	46.17	271.61	0.50	158.55	24.86
Off-site emissions	2,539.00	2.90	2,541.91	261.26	2.76	264.02	151.38	0.85	342.55	19.75
Total	2,818.94	17.27	2,836.21	294.21	15.98	310.19	422.99	1.35	501.10	44.61
MDAQMD CEQA daily threshold	NA	NA	82	NA	NA	82	137	137	548	137
Exceed the thresholds (Yes/No)	NA	NA	Yes	NA	NA	Yes	Yes	No	No	No

Note: NA = Not Applicable.

TABLE 4-2
PROJECT CONSTRUCTION ANNUAL EMISSION ESTIMATIONS (TONS/YEAR)

Annual Emissions (Tons per Year)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
On-site emissions	31.05	1.62	32.67	3.68	1.49	5.17	30.19	0.06	17.96	2.80
Off-site emissions	266.97	0.29	267.26	27.47	0.27	27.75	15.00	0.09	37.13	2.05
Total	298.02	1.91	299.92	31.15	1.76	32.91	45.19	0.15	55.09	4.86
MDAQMD CEQA daily threshold	NA	NA	15	NA	NA	15	25	25	100	25
Exceed the thresholds (Yes/No)	NA	NA	Yes	NA	NA	Yes	Yes	No	No	No

Note: NA = Not Applicable.

TABLE 4-3
PROJECT OPERATIONAL ANNUAL EMISSION ESTIMATIONS (TONS/YEAR)

Annual Emissions (Tons per Year)	Pollutant									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NO_x	SO_x	CO	ROG
On-site emissions	0.16	0.00	0.16	0.02	0.0001	0.02	0.01	0.00001	0.0019	0.0004
Off-site emissions	9.02	0.03	9.04	0.93	0.02	0.96	1.26	0.003	0.61	0.09
Total	9.17	0.03	9.20	0.95	0.02	0.97	1.26	0.003	0.61	0.09
MDAQMD CEQA daily threshold	NA	NA	15	NA	NA	15	25	25	100	25
Exceed the thresholds (yes/no)	NA	NA	No	NA	NA	No	No	No	No	No

Note: NA = Not Applicable.

TABLE 4-4
PROJECT GHG EMISSION ESTIMATIONS – ANNUAL (TONS/YEAR AND METRIC TONS/YEAR)

Annual Emissions	Pollutant			
	CO_2	CH_4	N_2O	Total GHG – CO_2e
On-site emissions in operation (tons/year)	1.31	0.00	0.00	1.3
Off-site emissions in operation (tons/year)	304.16	0.01	0.00	306
Total construction emissions (amortized over 30 years) (tons/year)	463.7	0.03	0.01	468
Total (tons/year)	769.17	0.04	0.01	775
Total (metric tons/year)	697.47	0.04	0.01	703
MDAQMD CEQA annual threshold (tons/year)	NA	NA	NA	100,000
Riverside County CEQA threshold (metric tons/year)	NA	NA	NA	3,000
Exceed the thresholds (yes/no)	NA	NA	NA	No

In addition, MDAQMD's "CEQA and Federal Conformity Guidelines (August 2011) as provided in in Section 2.5.1 of this report are as follows:

1) Generates total emissions (direct and indirect) in excess of the thresholds given in Table 2-4
2) Generates a violation of any ambient air quality standard when added to the local background
3) Does not conform with the applicable attainment or maintenance plan(s)
4) Exposes sensitive receptors to substantial pollutant concentrations, including those resulting in a cancer risk greater than or equal to 10 in a million and/or a Hazard Index (HI) (non-cancerous) greater than or equal to 1

Conformance with these thresholds is summarized below.

The emission estimate results in Tables 4-1 and 4-2 show that the emissions associated with Project construction activities are expected to exceed applicable MDAQMD CEQA thresholds for NO_x, PM_{10}, and $PM_{2.5}$ emissions, and hence have the potential to be a significant impact. The emission estimates in Table 4-3 show that the air quality impacts from operation of the Project would all be below MDAQMD CEQA thresholds and, therefore, the impacts would not be considered significant. In addition, the emission estimates in Table 4-4 show that GHG emissions would be below both the MDAQMD and Riverside County CEQA thresholds and, therefore, GHG impacts would not be considered significant (Appendix G (a), (f), and (g) of the CEQA Guidelines and (1) and (2) of the MDAQMD CEQA Guidelines).

Because the Project is located in the Federal attainment/unclassified area (see Figure 3), there is no applicable air quality plan and SIP from MDAQMD and ARB. Therefore, the Project will not conflict or obstruct implementation of the applicable air quality plan (Appendix G (a), (b) and (c) of the CEQA Guidelines and (3) of the MDAQMD CEQA Guidelines).Since all of the Project's construction and operational activities and travels were assumed to be within the Federal attainment/unclassified area in MDAQMD, there are no applicable Federal General Conformity de minimis levels to compare to the total Project direct and indirect emissions. Therefore, the Project complies with the NEPA and Federal General Conformity Rules.

For the TACs impact and the requirements of the California's Air Toxic "Hot Spots" program, the primarily concerned TAC of the Project is the DPM from the construction and operational activities. The operational PM emissions are estimated to be below CEQA significance thresholds. Although the construction PM emissions exceed the applicable CEQA significant thresholds, the 25-month DPM exposure duration is considered to be a short period of time for DPM's long term health risk cancer impact, therefore, the impact

from the construction DPM is not likely to be significant. DPM does not have an acute health risk, but has cancer risk that is based on long-term exposure which for residences is 30 years (OEHHA 2012). More importantly, since there are no sensitive receptors located within 1,000 feet of the proposed Project site, the HRA is not required as per MDQAMD's CEQA implementation guidelines (MDAQMD 2011) and, therefore, there's no significant impact due to TACs (Appendix G (d) of the CEQA Guidelines and (4) of the MDAQMD CEQA Guidelines).

Operation of the Project would not add any new odor sources. Photovoltaic Solar projects are not typically large generators of odors. As a result, the Project's construction and operational activities would not create objectionable odors affecting a substantial number of people. The odor impact would be less than significant (Appendix G (e) of the CEQA Guidelines).

SECTION 5.0
REFERENCES

Bureau of Land Management (BLM). 2008. H-1790-1 – National Environmental Policy Act Handbook. http://www.blm.gov/style/medialib/blm/wo/Planning_and_Renewable_Resources/NEPS.Par.95258.File.dat/h1790-1-2008-1.pdf.

California Air Resource Board (ARB). 2015a. California Greenhouse Gas Emission Inventory – 2015 Edition. http://www.arb. ca.gov/cc/inventory/data/data.htm.

2015b. Ambient Air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

2015c. National Area Designations and State Area Designations, ARB, http://www.arb.ca.gov/desig/adm/adm.htm.

California Energy Commission (CEC). 2011. Rio Mesa Application for Certification (AFC), http://www.energy.ca.gov/sitingcases/riomesa/documents/index.html.

California Office of Planning and Research (OPR). 2014. CEQA Guidelines Appendix G Environmental Checklist. http://opr.ca.gov/docs/Inital_Study_Checklist_Form.pdf.

Kern County Planning and Development Department. 2014. Final EIR, Beacon Photovoltaic Project. SCH# 2012011029.

Mojave Desert Air Quality Management (MDAQMD). 2011. CEQA and Federal Conformity Guidelines. August. http://www.mdaqmd.ca.gov/Modules/ShowDocument.aspx?documentid=1806.

2015. Rules and Regulations. http://www.mdaqmd.ca.gov/index.aspx?page=138.

Office of Environmental Health Hazard Assessment. 2012. A Risk Assessment Evaluation of New Technology Diesel Engine Exhaust Composition. June. http://www.oehha.ca.gov/public_info/DEEposter.html.

South Coast Air Quality Management District (SCAQMD). 2006. Final – Methodology to Calculate $PM_{2.5}$ and $PM_{2.5}$ Significance Thresholds (10/1/2006, Appendix A – Updated CEIDARS Table with $PM_{2.5}$ Fractions). http%3A%2F%2Fwww.aqmd.gov%2Fdocs%2Fdefault-source%2Fceqa%2Fhandbook%2Flocalized-significance-thresholds%2Fparticulate-matter-(pm)-2.5-significance-thresholds-and-calculation-methodology%2Ffinal-methodology-to-calculate-pm2-5-and-pm2-5-significance-thresholds.doc&usg=AFQjCNGrmgEcIzgMbcBu2dLwTwa4Z7i3lw.

2012. Air Quality Analysis Handbook, Tables XI-A, XI-D, and XI-E. http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust.

United States Environmental Protection Agency (USEPA). 2012. Technology Transfer Air Toxics Website. http://www.epa.gov/ttn/atw/hlthef/hapindex.html.

2015. Understanding Global Warming Potentials. http://epa.gov/climatechange/ghgemissions/gwps.html.

Western Regional Climatic Center (WRCC). 2015. Climate Data for Blythe. www.wrcc.dri.edu.

SECTION 6.0
LIST OF PREPARERS

Name of Preparer	Title	Responsibility
Sam Wang	Senior Air Quality Engineer	Task lead, entire report and appendices
Sara J. Head, QEP	Regional Program Manager	Independent technical review
Lynn Baringer	Air Quality Analyst	Section 1 and Section 3
Erika Michelotti	Environmental Scientist	Detailed check of emissions calculations

APPENDIX A
PROJECT CONSTRUCTION EMISSION ESTIMATIONS

Desert Quartzite Solar Project
Construction Emission Estimations
Emission Inventory Summary
Prepared by URS, September 2015

Project Construction Maximum Annual Emissions (ton/year)

Worse Year (from Month 10th to Month 21th)

Annual Emission (ton per year)	Emissions (tpy)													
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-site														
Off-road Equipment														
5 CY Dump Truck	0.10	0.01	0.11	0.01	0.01	0.02	0.27	0.00	0.11	0.02	52.11	0.00	0.00	52.62
Air Compressor	0.13	0.01	0.14	0.01	0.01	0.02	0.14	0.00	0.16	0.03	16.15	0.00	0.00	16.83
ATV	1.18	0.14	1.32	0.12	0.13	0.25	1.55	0.00	0.44	0.30	106.49	0.01	0.01	108.33
Auger	0.09	0.01	0.10	0.01	0.01	0.01	0.18	0.00	0.09	0.01	47.36	0.00	0.00	47.59
Backhoe/Excavator	0.02	0.03	0.05	0.00	0.03	0.03	0.37	0.00	0.57	0.03	82.30	0.01	0.00	83.64
Cable Plow	0.09	0.02	0.11	0.05	0.01	0.07	0.20	0.00	0.14	0.02	20.59	0.00	0.00	21.08
Cable Trencher	0.11	0.01	0.12	0.06	0.01	0.07	0.09	0.00	0.14	0.02	12.43	0.00	0.00	13.14
Compactor	0.07	0.01	0.08	0.01	0.00	0.01	0.11	0.00	0.13	0.01	23.42	0.00	0.00	23.74
Crane	0.30	0.03	0.33	0.03	0.03	0.06	0.79	0.00	0.28	0.05	112.32	0.01	0.00	113.51
Crawler Tractor	0.02	0.00	0.02	0.00	0.00	0.00	0.06	0.00	0.04	0.00	7.37	0.00	0.00	7.50
Dozer (D6)	0.07	0.02	0.09	0.04	0.02	0.06	0.32	0.00	0.21	0.03	32.60	0.00	0.00	33.27
Forklift	0.07	0.00	0.08	0.01	0.00	0.01	0.08	0.00	0.10	0.01	15.20	0.00	0.00	15.45
Forklift (10 K) (Aerial Lift)	0.40	0.03	0.43	0.04	0.03	0.07	0.52	0.00	0.66	0.03	97.48	0.01	0.00	99.12
Forklift (5 K)	0.20	0.02	0.22	0.02	0.02	0.04	0.34	0.00	0.43	0.02	62.89	0.01	0.00	63.95
Generator	0.03	0.00	0.03	0.00	0.00	0.01	0.03	0.00	0.04	0.01	4.75	0.00	0.00	4.89
Generator (45 kW)	1.08	0.09	1.18	0.11	0.09	0.19	1.04	0.00	1.28	0.20	165.46	0.03	0.01	170.26
Generator (Office)(45 kW)	0.45	0.04	0.49	0.04	0.04	0.08	0.43	0.00	0.53	0.08	68.47	0.01	0.01	70.45
Generator (Security, IT)(30 kW)	0.39	0.04	0.43	0.04	0.04	0.07	0.43	0.00	0.53	0.08	68.47	0.01	0.01	70.45
Loader	0.02	0.01	0.03	0.00	0.01	0.01	0.24	0.00	0.27	0.02	45.95	0.00	0.00	46.46
Man/Aerial Lift	0.03	0.00	0.03	0.00	0.00	0.00	0.02	0.00	0.02	0.00	3.06	0.00	0.00	3.16
Mini Excavator	0.07	0.00	0.07	0.01	0.00	0.01	0.05	0.00	0.10	0.01	9.45	0.00	0.00	9.76
Mini-Trencher	0.44	0.03	0.48	0.24	0.03	0.27	0.36	0.00	0.58	0.07	49.73	0.02	0.01	52.55
Motor Grader	4.08	0.03	4.12	0.44	0.03	0.47	1.01	0.00	0.38	0.06	164.34	0.01	0.00	166.05
Post Machine	0.74	0.07	0.81	0.07	0.06	0.14	0.98	0.00	0.94	0.13	131.28	0.01	0.00	132.61
Roller/Vibrator/Padder	3.48	0.02	3.50	0.38	0.02	0.39	0.43	0.00	0.50	0.03	87.95	0.01	0.00	89.15
Scraper	0.29	0.10	0.38	0.16	0.09	0.25	2.08	0.00	0.56	0.15	205.68	0.02	0.01	208.37
Sheepsfoot Roller	3.68	0.03	3.71	0.40	0.03	0.42	0.38	0.00	0.34	0.03	50.79	0.01	0.00	51.78
Skid Steer	0.14	0.08	0.22	0.02	0.07	0.09	1.39	0.00	1.83	0.09	290.69	0.02	0.01	293.56
Tensioner	0.03	0.00	0.04	0.00	0.00	0.01	0.10	0.00	0.05	0.01	9.39	0.00	0.00	9.48
Tractor	0.09	0.01	0.10	0.01	0.01	0.02	0.14	0.00	0.16	0.01	27.57	0.00	0.00	27.88
Tractor Buster	2.26	0.01	2.27	0.24	0.01	0.26	0.28	0.00	0.31	0.02	53.61	0.00	0.00	54.20
Tractor Disk	0.22	0.01	0.23	0.02	0.01	0.03	0.40	0.00	0.19	0.02	90.80	0.00	0.00	91.58
Truck	0.06	0.01	0.06	0.01	0.01	0.01	0.16	0.00	0.06	0.01	27.88	0.00	0.00	28.17
Truck (Onroad)	3.24	0.38	3.61	0.32	0.35	0.67	8.40	0.02	3.16	0.64	1,442.03	0.09	0.04	1,456.65
Truck Mounted Digger	0.03	0.00	0.03	0.00	0.00	0.00	0.06	0.00	0.03	0.00	16.58	0.00	0.00	16.65
Truck, flatbed (onroad)	0.43	0.05	0.48	0.04	0.05	0.09	1.11	0.00	0.42	0.09	191.21	0.01	0.01	193.15
Water Pull	0.23	0.03	0.26	0.02	0.03	0.05	0.67	0.00	0.25	0.05	114.61	0.01	0.00	115.78
Water Pump	0.24	0.02	0.26	0.02	0.02	0.05	0.26	0.00	0.07	0.05	18.06	0.00	0.00	18.37
Water truck	1.75	0.20	1.96	0.18	0.19	0.36	4.55	0.01	1.71	0.35	780.77	0.05	0.02	788.68
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	0.03	0.00	0.03	0.00	0.00	0.01	0.08	0.00	0.03	0.01	13.28	0.00	0.00	13.41
On-road Vehicles														
Aggregate Base Delivery Trucks	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07
Concrete Delivery Trucks	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.26
Material Delivery Trucks	0.14	0.00	0.14	0.01	0.00	0.01	0.01	0.00	0.00	0.00	1.40	0.00	0.00	1.40
Tracker Deliveries Trucks	0.20	0.00	0.20	0.02	0.00	0.02	0.01	0.00	0.00	0.00	2.00	0.00	0.00	2.01
Water Haul Trucks	1.17	0.00	1.17	0.12	0.00	0.12	0.05	0.00	0.01	0.00	10.06	0.00	0.00	10.08
Worker Vehicles	3.11	0.00	3.11	0.31	0.00	0.31	0.01	0.00	0.10	0.00	19.89	0.00	0.00	20.08
Fuel Trucks	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.08
On-site Emissions Subtotal	**31.05**	**1.62**	**32.67**	**3.68**	**1.49**	**5.17**	**30.19**	**0.06**	**17.96**	**2.80**	**4,854.33**	**0.40**	**0.18**	**4,917.22**

Off-site														
On-road Vehicles (unpaved road)														
Aggregate Base Delivery Trucks	0.39	0.00	0.39	0.04	0.00	0.04	0.02	0.00	0.00	0.00	3.93	0.00	0.00	3.94
Concrete Delivery Trucks	1.46	0.00	1.46	0.15	0.00	0.15	0.09	0.00	0.02	0.01	14.75	0.00	0.00	14.80
Material Delivery Trucks	7.81	0.01	7.81	0.78	0.01	0.79	0.46	0.00	0.08	0.03	78.82	0.00	0.00	79.06
Tracker Deliveries Trucks	11.18	0.01	11.20	1.12	0.01	1.13	0.66	0.00	0.12	0.05	112.94	0.00	0.00	113.28
Water Haul Trucks	65.76	0.07	65.83	6.60	0.06	6.66	3.02	0.01	0.40	0.19	567.27	0.01	0.00	568.65
Worker Vehicles	175.46	0.01	175.47	17.58	0.01	17.58	0.53	0.01	5.68	0.21	1,121.94	0.07	0.03	1,132.71
Fuel Trucks	0.55	0.00	0.55	0.06	0.00	0.06	0.03	0.00	0.00	0.00	4.75	0.00	0.00	4.76
On-road Vehicles (paved road)														
Aggregate Base Delivery Trucks	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.01	0.00	5.13	0.00	0.00	5.14
Concrete Delivery Trucks	0.02	0.00	0.02	0.00	0.00	0.01	0.11	0.00	0.02	0.01	19.25	0.00	0.00	19.31
Material Delivery Trucks	0.32	0.04	0.35	0.08	0.04	0.11	2.02	0.00	0.37	0.14	347.44	0.01	0.00	348.48
Tracker Deliveries Trucks	0.45	0.05	0.50	0.11	0.05	0.16	2.90	0.00	0.54	0.20	497.82	0.01	0.00	499.32
Water Haul Trucks	0.38	0.05	0.43	0.10	0.05	0.15	2.34	0.00	0.31	0.14	438.53	0.01	0.00	439.59
Worker Vehicles	3.19	0.05	3.23	0.86	0.04	0.90	2.78	0.06	29.57	1.07	5,840.44	0.35	0.16	5,896.54
Fuel Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	3.67	0.00	0.00	3.68
Off-site Emissions Subtotal	**266.97**	**0.29**	**267.26**	**27.47**	**0.27**	**27.75**	**15.00**	**0.09**	**37.13**	**2.05**	**9,056.68**	**0.46**	**0.21**	**9,129.27**
Grand Total	**298.02**	**1.91**	**299.92**	**31.15**	**1.76**	**32.91**	**45.19**	**0.15**	**55.09**	**4.86**	**13,911.01**	**0.85**	**0.38**	**14,046.49**

MDAQMD CEQA annual threshold (tpy)				15			15	25	25	100	25				100,000.00
Exceed the threshold (YES/NO)				**yes**			**yes**	**yes**	**no**	**no**	**no**				**no**

Project Construction Maximum Daily Emissions (lb/day)

Worse case (Any month from Month 17th to Month 19th)

Daily Emission (pounds per day)	Emissions (lb/day)													
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-site														
Off-road Equipment														
5 CY Dump Truck	0.78	0.08	0.86	0.08	0.08	0.15	2.12	0.00	0.88	0.15	413.58	0.03	0.01	417.61
Air Compressor	1.01	0.10	1.11	0.10	0.09	0.19	1.11	0.00	1.30	0.22	128.17	0.03	0.02	133.59
ATV	9.38	1.11	10.48	0.94	1.02	1.96	12.31	0.01	3.48	2.39	845.15	0.09	0.04	859.74
Auger	0.75	0.04	0.79	0.07	0.04	0.12	1.46	0.00	0.68	0.08	375.87	0.01	0.01	377.66
Backhoe/Excavator	0.21	0.25	0.46	0.03	0.23	0.26	3.42	0.01	5.25	0.29	762.05	0.08	0.03	774.41
Cable Plow	0.74	0.13	0.87	0.41	0.12	0.52	1.61	0.00	1.15	0.15	163.39	0.02	0.01	167.29
Cable Trencher	0.88	0.06	0.94	0.48	0.06	0.54	0.70	0.00	1.14	0.14	98.66	0.04	0.02	104.27
Compactor	0.56	0.04	0.61	0.06	0.04	0.10	0.90	0.00	1.06	0.06	185.84	0.02	0.01	188.39
Crane	2.74	0.31	3.05	0.27	0.28	0.56	7.37	0.01	2.57	0.48	1,043.65	0.07	0.03	1,054.64
Crawler Tractor	0.35	0.06	0.41	0.04	0.06	0.09	1.13	0.00	0.85	0.09	140.45	0.01	0.01	142.82
Dozer (D6)	0.70	0.18	0.88	0.39	0.16	0.55	3.08	0.00	1.99	0.25	310.47	0.04	0.02	316.83
Forklift	0.73	0.04	0.77	0.07	0.04	0.11	0.80	0.00	1.01	0.05	149.75	0.02	0.01	152.25
Forklift (10 K) (Aerial Lift)	3.19	0.23	3.42	0.32	0.21	0.53	4.15	0.01	5.24	0.27	773.68	0.08	0.04	786.63
Forklift (5 K)	1.60	0.15	1.75	0.16	0.14	0.30	2.68	0.01	3.38	0.18	499.15	0.05	0.02	507.50
Generator	0.52	0.05	0.57	0.05	0.05	0.10	0.57	0.00	0.70	0.11	90.56	0.02	0.01	93.19
Generator (45 kW)	10.66	0.92	11.59	1.07	0.85	1.91	10.25	0.02	12.64	1.99	1,630.13	0.30	0.13	1,677.40
Generator (Office)(45 kW)	3.55	0.31	3.86	0.36	0.28	0.64	3.42	0.01	4.21	0.66	543.38	0.10	0.04	559.13
Generator (Security, IT)(30 kW)	3.12	0.31	3.43	0.31	0.28	0.60	3.42	0.01	4.21	0.66	543.38	0.10	0.04	559.13
Loader	0.18	0.12	0.29	0.03	0.11	0.13	2.27	0.00	2.52	0.17	437.60	0.03	0.01	442.47
Man/Aerial Lift	0.25	0.00	0.25	0.02	0.00	0.03	0.14	0.00	0.20	0.01	24.30	0.00	0.00	25.05
Mini Excavator	0.53	0.03	0.56	0.05	0.03	0.08	0.44	0.00	0.79	0.06	74.99	0.02	0.01	77.49
Mini-Trencher	3.52	0.25	3.78	1.94	0.23	2.17	2.82	0.01	4.57	0.54	394.66	0.14	0.06	417.09
Motor Grader	42.03	0.34	42.37	4.54	0.31	4.85	10.39	0.02	3.87	0.61	1,692.07	0.11	0.05	1,709.67
Post Machine	5.91	0.56	6.47	0.59	0.51	1.11	7.75	0.01	7.47	1.05	1,041.90	0.07	0.03	1,052.48
Roller/Vibrator/Padder	29.22	0.17	29.38	3.15	0.16	3.31	3.59	0.01	4.20	0.24	739.05	0.06	0.03	749.18
Scraper	2.82	0.94	3.76	1.55	0.86	2.41	20.35	0.02	5.45	1.43	2,009.11	0.17	0.07	2,035.34
Sheepsfoot Roller	29.22	0.22	29.44	3.15	0.20	3.36	2.98	0.00	2.71	0.27	403.12	0.05	0.02	410.92
Skid Steer	1.12	0.63	1.76	0.17	0.58	0.75	11.24	0.03	14.86	0.72	2,358.33	0.15	0.07	2,381.61
Tensioner	0.63	0.07	0.70	0.06	0.07	0.13	1.88	0.00	0.98	0.11	178.79	0.01	0.00	180.54
Tractor	0.73	0.06	0.79	0.07	0.05	0.13	1.14	0.00	1.26	0.08	218.80	0.02	0.01	221.24
Tractor Buster	21.53	0.14	21.66	2.32	0.12	2.45	2.65	0.01	2.95	0.20	510.53	0.04	0.02	516.22
Tractor Disk	2.08	0.13	2.21	0.21	0.12	0.32	3.81	0.01	1.78	0.22	864.78	0.05	0.02	872.17
Truck	0.78	0.10	0.87	0.08	0.09	0.17	2.21	0.00	0.83	0.17	379.38	0.02	0.01	383.23
Truck (Onroad)	28.95	3.37	32.32	2.90	3.10	6.00	75.16	0.15	28.28	5.74	12,899.01	0.82	0.37	13,029.75
Truck Mounted Digger	0.57	0.04	0.61	0.06	0.03	0.09	1.22	0.00	0.57	0.07	315.73	0.01	0.00	317.24
Truck, flatbed (onroad)	3.41	0.40	3.80	0.34	0.36	0.71	8.84	0.02	3.33	0.68	1,517.53	0.10	0.04	1,532.91
Water Pull	2.15	0.29	2.44	0.22	0.26	0.48	6.36	0.01	2.39	0.49	1,091.56	0.07	0.03	1,102.62
Water Pump	2.08	0.20	2.29	0.21	0.19	0.40	2.28	0.00	0.64	0.44	156.35	0.02	0.01	159.05
Water truck	15.90	1.85	17.75	1.59	1.70	3.29	41.26	0.08	15.52	3.15	7,081.81	0.45	0.20	7,153.59
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	0.57	0.07	0.63	0.06	0.06	0.12	1.47	0.00	0.55	0.11	252.92	0.02	0.01	255.49
On-road Vehicles														
Aggregate Base Delivery Trucks	0.13	0.00	0.13	0.01	0.00	0.01	0.01	0.00	0.00	0.00	1.31	0.00	0.00	1.32
Concrete Delivery Trucks	0.49	0.00	0.49	0.05	0.00	0.05	0.03	0.00	0.01	0.00	4.97	0.00	0.00	4.98
Material Delivery Trucks	1.93	0.00	1.93	0.19	0.00	0.20	0.11	0.00	0.02	0.01	19.47	0.00	0.00	19.53
Tracker Deliveries Trucks	1.57	0.00	1.58	0.16	0.00	0.16	0.09	0.00	0.02	0.01	15.89	0.00	0.00	15.94
Water Haul Trucks	11.57	0.01	11.59	1.16	0.01	1.17	0.53	0.00	0.07	0.03	99.84	0.00	0.00	100.08
Worker Vehicles	28.50	0.00	28.50	2.85	0.00	2.86	0.09	0.00	0.92	0.03	182.25	0.01	0.00	184.00
Fuel Trucks	0.08	0.00	0.08	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.73
On-site Emissions Subtotal	**279.93**	**14.37**	**294.30**	**32.95**	**13.22**	**46.17**	**271.61**	**0.50**	**158.55**	**24.86**	**43,664.06**	**3.53**	**1.58**	**44,224.37**

Off-site														
On-road Vehicles (unpaved road)														
Aggregate Base Delivery Trucks	7.32	0.01	7.33	0.73	0.01	0.74	0.43	0.00	0.08	0.03	73.95	0.00	0.00	74.17
Concrete Delivery Trucks	27.74	0.03	27.77	2.78	0.03	2.81	1.63	0.00	0.30	0.11	280.11	0.01	0.00	280.95
Material Delivery Trucks	108.74	0.12	108.86	10.89	0.11	11.00	6.39	0.01	1.18	0.45	1,098.04	0.02	0.01	1,101.34
Tracker Deliveries Trucks	88.77	0.10	88.86	8.89	0.09	8.98	5.21	0.01	0.96	0.37	896.36	0.02	0.01	899.05
Water Haul Trucks	652.77	0.65	653.42	65.47	0.62	66.10	30.00	0.05	4.01	1.86	5,630.85	0.09	0.04	5,644.52
Worker Vehicles	1,607.54	0.08	1,607.62	161.02	0.07	161.10	4.89	0.10	52.03	1.89	10,279.03	0.62	0.28	10,377.77
Fuel Trucks	4.76	0.00	4.77	0.48	0.00	0.48	0.22	0.00	0.03	0.01	41.09	0.00	0.00	41.19
On-road Vehicles (paved road)														
Aggregate Base Delivery Trucks	0.09	0.01	0.10	0.02	0.01	0.03	0.56	0.00	0.10	0.04	96.50	0.00	0.00	96.79
Concrete Delivery Trucks	0.33	0.04	0.37	0.08	0.04	0.12	2.13	0.00	0.39	0.15	365.54	0.01	0.00	366.63
Material Delivery Trucks	4.39	0.52	4.91	1.11	0.49	1.60	28.15	0.05	5.21	1.97	4,839.96	0.09	0.04	4,854.49
Tracker Deliveries Trucks	3.58	0.42	4.00	0.90	0.40	1.31	22.98	0.04	4.25	1.61	3,950.99	0.07	0.03	3,962.85
Water Haul Trucks	3.74	0.50	4.24	1.00	0.48	1.48	23.19	0.04	3.10	1.43	4,352.93	0.07	0.03	4,363.50
Worker Vehicles	29.20	0.42	29.62	7.88	0.39	8.27	25.45	0.54	270.87	9.83	53,509.30	3.24	1.45	54,023.30
Fuel Trucks	0.03	0.00	0.03	0.01	0.00	0.01	0.17	0.00	0.02	0.01	31.76	0.00	0.00	31.84
Off-site Emissions Subtotal	**2,539.00**	**2.90**	**2,541.91**	**261.26**	**2.76**	**264.02**	**151.38**	**0.85**	**342.55**	**19.75**	**85,446.42**	**4.24**	**1.90**	**86,118.40**
Grand Total	**2,818.94**	**17.27**	**2,836.21**	**294.21**	**15.98**	**310.19**	**422.99**	**1.35**	**501.10**	**44.61**	**129,110.48**	**7.77**	**3.48**	**130,342.77**

MDAQMD CEQA daily threshold (lb/day)				82			82	137	137	548	137				548,000
Exceed the threshold (YES/NO)				**yes**			**yes**	**yes**	**no**	**no**	**no**				**no**

Project Federal General Conformity Compliance

Project Construction Total Direct and Indirect Emissions (ton/year)	Emissions (tpy)									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG
Riverside County - MDAQMD										
2016	4.12	0.05	4.17	0.44	0.04	0.49	1.21	0.00	0.73	0.10
2017	216.23	1.52	217.75	22.66	1.41	24.07	35.07	0.11	40.29	3.69
2018	245.51	1.52	247.03	25.65	1.41	27.06	36.67	0.12	45.11	3.96
Applicable *De Minimis* Levels			N/A			N/A	N/A	N/A	N/A	N/A
Exceed the threshold in any year (YES/NO)			**N/A**			**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
LA-SCAB, CA										
2016	0.07	0.01	0.07	0.02	0.01	0.02	0.42	0.00	0.08	0.03
2017	1.33	0.16	1.48	0.33	0.15	0.48	8.51	0.01	1.58	0.60
2018	1.94	0.23	2.17	0.49	0.22	0.71	12.44	0.02	2.30	0.87
Applicable *De Minimis* Levels			100.00			100.00	10.00	100.00	100.00	10.00
Exceed the threshold in any year (YES/NO)			**NO**			**NO**	**YES**	**NO**	**NO**	**NO**
Phoenix, AZ										
2016	0.01	0.00	0.01	0.00	0.00	0.00	0.04	0.00	0.01	0.00
2017	0.98	0.11	1.09	0.25	0.11	0.36	6.26	0.01	1.16	0.44
2018	0.87	0.10	0.97	0.22	0.10	0.32	5.55	0.01	1.03	0.39
Applicable *De Minimis* Levels			70.00				100.00		100.00	100.00
Exceed the threshold in any year (YES/NO)			**NO**				**NO**		**NO**	**NO**

N/A: not applicable

Desert Quartzite Solar Project
Construction Emission Estimations
TABLE 1 OFF-SITE CONSTRUCTION PHASE TRIPS

TABLE 1 OFF-SITE CONSTRUCTION PHASE TRIPS - ESTIMATED CONSTRUCTION PHASE ONE-WAY TRIPS[1] By MONTH

CONSTRUCTION PHASE TRIPS	Dec 2016 1	Jan 2017 2	Feb 2017 3	Mar 2017 4	Apr 2017 5	May 2017 6	Jun 2017 7	Jul 2017 8	Aug 2017 9	Sept 2017 10	Oct 2017 11	Nov 2017 12	Dec 2017 13	Jan 2018 14	Feb 2018 15	Mar 2018 16	Apr 2018 17	May 2018 18	Jun 2018 19	Jul 2018 20	Aug 2018 21	Sept 2018 22	Oct 2018 23	Nov 2018 24	Dec 2018 25	Total Trips (One-Way)
Activity 1: Move-On (Laydown, Construction Trailers, and Parking Area) (109 acres)																										
Worker Trips (Workers = 60)	2,520	2,520																					-			5,040
Material Delivery Trucks	920	920																								1,840
Aggregate Base	200	200																								400
Off-site Water Haul Trucks	560	560																								1,120
Sub-totals	4,200	4,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8,400
Activity 2, Site Grading (Site Preparations/Clearing/Grading) (3,756 Acres)																										
Worker Trips (Workers = 80)		3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360				-			60,480
Material Delivery Trucks		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20							360
Off-site Water Haul Trucks		2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600							46,800
Sub-totals	-	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980	5,980				-	-	-	107,640
Activity 3, Construction - Solar Array Structural Components																										
Worker Trips (Workers = 160)				6,720	6,720	6,720	6,720	6,720	6,720	6,720	6,720	6,720	6,720	6,720	6,720	6,720	6,720	6,720	6,720	6,720	6,720		-			120,960
Material Delivery Trucks				20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20					360
Off-site Water Haul Trucks				960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960					17,280
Sub-totals	-	-	-	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	7,700	-	-		-	138,600
Activity 4, Trenching - PCS Excavation, PCS Placement, UG Cabling Trenching (Underground Work) (200 acres disturbed)																										
Worker Trips (Workers = 80)					3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	3,360	-			60,480
Material Delivery Trucks					200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200				3,600
Off-site Water Haul Trucks					960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960				17,280
Sub-totals	-	-	-	-	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,520	-		-	81,360
Activity 5, Construction - Solar Module Installation																										
Worker Trips (Workers = 310)						13,020	13,020	13,020	13,020	13,020	13,020	13,020	13,020	13,020	13,020	13,020	13,020	13,020	13,020	13,020	13,020	13,020	13,020			234,360
Material Delivery Trucks (Trackers)						800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800			14,400
Off-site Water Haul Trucks						960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960	960			17,280
Sub-totals	-	-	-	-	-	14,780	14,780	14,780	14,780	14,780	14,780	14,780	14,780	14,780	14,780	14,780	14,780	14,780	14,780	14,780	14,780	14,780	14,780	-	-	266,040
Activity 6, Construction - Substation (7 acres)																										
Worker Trips (Workers = 60)																	2,520	2,520	2,520	2,520	2,520	2,520	-			15,120
Material Delivery Trucks																	480	480	480	480	480	480				2,880
Aggregate Base																	66	67	67	67	67	66				400
Concrete Delivery Trucks																	44	44	44	44	44	44				264
Off-site Water Haul Trucks																	960	960	960	960	960	960				5,760
Sub-totals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,070	4,071	4,071	4,071	4,071	4,070	-	-	-	24,424
Activity 7, Construction - Gen-Tie (10 acres)																										
Worker Trips (Workers = 60)																	2,520	2,520	2,520	2,520	2,520	2,520	-			15,120
Material Delivery Trucks																	100	100	100	100	100	100				600
Concrete Delivery Trucks																	200	200	200	200	200	200				1,200
Off-site Water Haul Trucks																	960	960	960	960	960	960				5,760
Sub-totals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,780	3,780	3,780	3,780	3,780	3,780	-	-	-	22,680
Activity 8, Construction (O&M Building) (Added)																										
Worker Trips (Workers = 60)																	2,520	2,520	2,520	2,520	2,520	2,520	-			15,120
Material Delivery Trucks																	160	160	160	160	160	160				960
Concrete Delivery Trucks																	6	7	7	7	7	6				40
Off-site Water Haul Trucks																	-	-	-	-	-	-				-
Sub-totals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,686	2,687	2,687	2,687	2,687	2,686	-	-	-	16,120
Activity 9, Construction (Testing/Cleanup/Restoration) (Added)																										
Worker Trips (Workers = 60)																				2,520	2,520	2,520	2,520	2,520	2,520	15,120
Material Delivery Trucks																				80	80	80	80	80	80	480
Off-site Water Haul Trucks																				420	420	420	420	420	420	2,520
Sub-totals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		3,020	3,020	3,020	3,020	3,020	3,020	18,120
TOTALS	4,200	10,180	5,980	13,680	18,200	32,980	32,980	32,980	32,980	32,980	32,980	32,980	32,980	32,980	32,980	32,980	43,516	43,518	43,518	40,558	40,558	32,856	17,800	3,020	3,020	**683,384**

NOTES:

[1] Each trip to the Project site (i.e., worker or truck delivery) requires two, one-way trips (i.e., one round trip).
[2] All workers would arrive at the Project site by 7 am, thereby avoiding the AM peak traffic period; all workers are assumed to depart the site at 5 pm during the PM peak period.
[3] Material deliveries are expected to occur primarily during non-peak traffic periods (i.e., avoid 7-9 am and 4-6 pm periods).
[4] All water haul deliveries would occur during non-peak traffic periods.
[5] This table does not include fuel truck trips; see Table 1.1 below for fuel trucks per month.

TABLE 1.1 CONSTRUCTION ONE-WAY PHASE TRIPS TOTAL

	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sept 2017	Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sept 2018	Oct 2018	Nov 2018	Dec 2018	**Totals**
Aggregate Base Delivery Trucks	200	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66	67	67	67	67	66	-	-	-	**800**
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	250	251	251	251	251	250	-	-	-	**1,504**
Material Delivery Trucks	920	940	20	40	240	240	240	240	240	240	240	240	240	240	240	240	980	980	980	1,040	1,040	1,020	80	80	80	**11,080**
Tracker Deliveries Trucks	-	-	-	-	-	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	800	-	-	**14,400**
Water Haul Trucks	560	3,160	2,600	3,560	4,520	5,480	5,480	5,480	5,480	5,480	5,480	5,480	5,480	5,480	5,480	5,480	7,400	7,400	7,400	5,220	5,220	4,260	1,380	420	420	**113,800**
Worker Vehicles	2,520	5,880	3,360	10,080	13,440	26,460	26,460	26,460	26,460	26,460	26,460	26,460	26,460	26,460	26,460	26,460	34,020	34,020	34,020	33,180	33,180	26,460	15,540	2,520	2,520	**541,800**
Fuel Trucks	10	20	10	26	34	48	48	48	48	48	48	48	48	48	48	48	54	54	54	48	48	32	18	6	6	**948**
Total vehicle trips (Incl Water and Fuel)	4,210	10,200	5,990	13,706	18,234	33,028	33,028	33,028	33,028	33,028	33,028	33,028	33,028	33,028	33,028	33,028	43,570	43,572	43,572	40,606	40,606	32,888	17,818	3,026	3,026	**684,332**
UPDATED Vehicle Trips (No Water or Fuel)	3,640	7,020	3,380	10,120	13,680	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	27,500	36,116	36,118	36,118	35,338	35,338	28,596	16,420	2,600	2,600	**569,584**

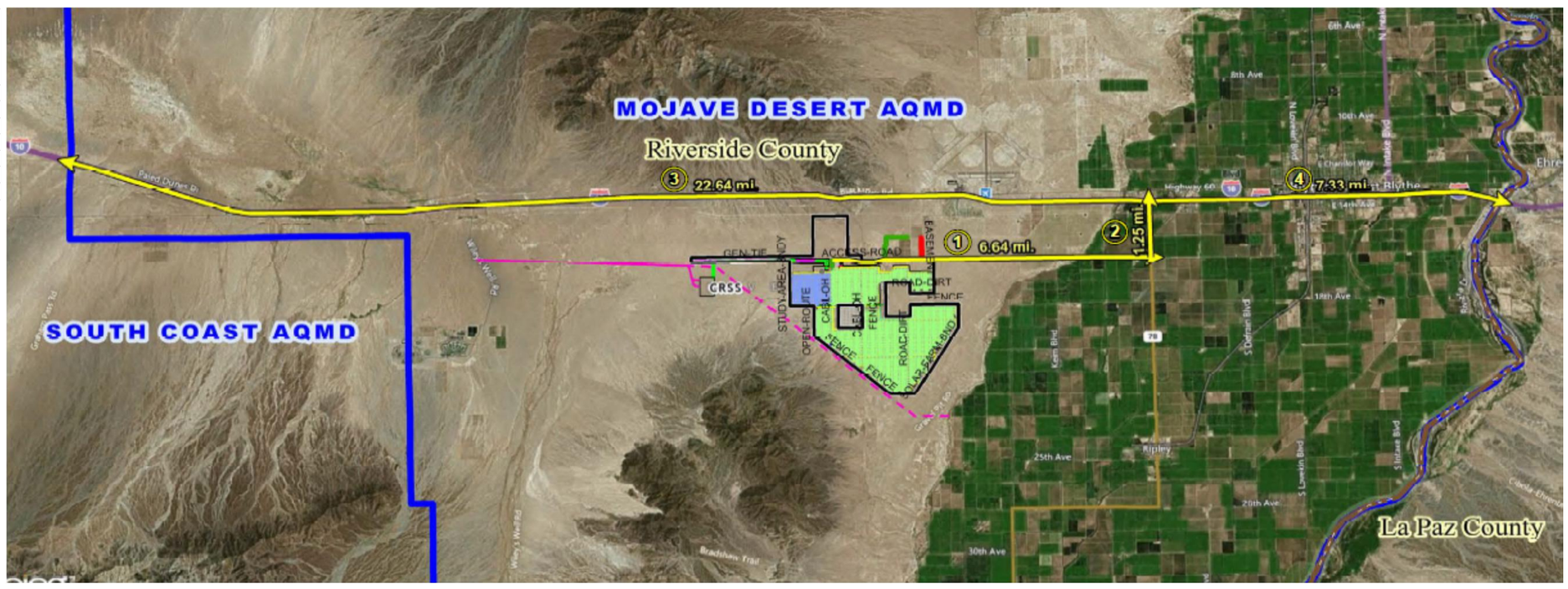
NOTES:

1. Assume the tank capacity for the fuel truck is 4000 gallon.
2. Number of fuel truck is calculated from total hours of construction equipment utilization, fuel tank truck capacity, and average fuel consumption.
3. Assume the average fuel consumption is 4 gallon per hour for each construction equipment.
4. Reference: http://www.epa.gov/cleandiesel/documents/420b10025.pdf

TABLE 1.2 TRIP DISTANCE (1 WAY; R/T = X2)

	Miles unpaved road, onsite laydown area to site entrance (assumption)	Miles unpaved road, site entrance to paved road (eastbound 16th at Stephenson)	Miles paved road in MDAQMD area	Total one way distance (all in MDAQMD area), miles
Aggregate Base Delivery Trucks	0.1	5.64	7.36	13
Concrete Delivery Trucks	0.1	5.64	7.36	13
Material Delivery Trucks	0.1	5.64	24.86	30.5
Tracker Deliveries Trucks	0.1	5.64	24.86	30.5
Water Haul Trucks	0.1	5.64	4.36	10
Worker Vehicles	0.1	5.64	29.36	35
Fuel Trucks	0.1	5.64	4.36	10

All miles in MDAQMD



Desert Quartzite Solar Project
Construction Emission Estimations
TABLE 2 CONSTRUCTION EQUIPMENT UTILIZATION
Prepared by URS-AECOM; updated as of 8/20/15

ESTIMATED CONSTRUCTION ACTIVITY DURATION in MONTHS/EQUIPMENT PIECES per MONTH																														
CONSTRUCTION EQUIPMENT DESCRIPTION	Hours Daily Operation	LOAD FACTOR[1]	HP	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sept 2017	Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sept 2018	Oct 2018	Nov 2018	Dec 2018	TOTAL EQUIPMENT PIECE MONTHS[2]	TOTAL HOURS
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
Activity 1: Move-On (Laydown, Construction Trailers, and Parking Area) (109 acres)																														
Water truck	8	0.38	230	2	2																								4	672
Water Pull	8	0.41	185	2	2																								4	672
Motor Grader	6	0.41	185	3	3																								6	756
Scraper	6	0.4	365	3	3																								6	756
Dozer (D6)	6	0.4	158	1	1																								2	252
Loader	6	0.36	190	2	2																								4	504
Tractor Buster	6	0.42	120	2	2																								4	504
Tractor Disk	6	0.42	300	2	2																								4	504
Roller/Vibrator/Padder	6	0.38	160	1	1																								2	252
Skid Steer	6	0.40	83	3	3																								6	756
Generator (Office)(45 kW)	24	0.74	60	1	1																								2	1,008
Generator (Security, IT)(30 kW)	24	0.74	40	1	1																								2	1,008
Truck (Onroad)	4	0.38	238	10	10																								20	1,680
Water Well Pump	8	0.74	45	2	2																								4	672
			Sub-totals	35	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	9,996
Activity 2, Grading - Site Preparation (2,900 acres, 18 months)(Assumes no onsite electrical connection)																														
Water truck	8	0.38	230		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							36	6,048
Water Pull	8	0.41	185		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							36	6,048
Motor Grader	6	0.41	185		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							54	6,804
Dozer (D6)	6	0.4	158		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							18	2,268
Loader	6	0.36	190		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							36	4,536
Skid Steer	6	0.40	83		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							54	6,804
Tractor Buster	6	0.42	120		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							36	4,536
Tractor Disk	6	0.42	300		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							36	4,536
Truck (onroad)	4	0.38	238		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10							180	15,120
Generator (Office)(45 kW)	24	0.74	60		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							18	9,072
Generator (Security, IT)(30 kW)	24	0.74	40		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							18	9,072
Roller/Vibrator/Padder	6	0.38	160		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							18	2,268
Scraper	6	0.4	365		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3							54	6,804
Water Pump	8	0.74	45		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							36	6,048
			Sub-totals	-	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	-	-	-	-	-	-	630	89,964
Activity 3, Construction - Solar Array Structural Components (18 months)																														
Water truck	8	0.38	238				3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3					54	9,072
ATV	4	0.4	24				20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20					360	30,240
Air Compressor	6	0.48	49				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					18	2,268
Crane	2	0.29	400				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					18	756
Forklift (5 K)	4	0.2	67				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5					90	7,560
Forklift (10 K) (Aerial Lift)	4	0.31	110				5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5					90	7,560
Post Machine	6	0.40	49				7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7					126	15,876
Skid Steer	4	0.4	80				10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10					180	15,120
Truck, flatbed (onroad)	4	0.38	238				2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2					36	3,024
Truck (onroad)	4	0.38	238				15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15					270	22,680
Generator (45 kW)	24	0.74	60				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					18	9,072
			Sub-totals	-	-	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	-	-	-	1,260	123,228

Activity 4, Trenching (Underground Work) (18 months)																														
Water truck	8	0.38	230					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				36	6,048
Backhoe/Excavator	4	0.37	90					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4				72	6,048
Cable Plow	6	0.42	120					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	2,268
Cable Trencher	6	0.5	42					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	2,268
Compactor	4	0.43	180					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	1,512
Roller/Vibrator/Padder	6	0.38	180					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				36	4,536
Mini-Trencher	6	0.5	40					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4				72	9,072
Sheepsfoot Roller	6	0.38	95					3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3				54	6,804
5 CY Dump Truck	4	0.38	480					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	1,512
			Sub-totals	-	-	-	-	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	-	-	-	342	40,068
Activity 5, Construction - Solar Module Installation (18 months)																														
Water truck	8	0.38	230						3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3			54	9,072
ATV	4	0.4	24						20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20			360	30,240
Air Compressor	6	0.48	49						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			18	2,268
Crane	2	0.29	400						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			18	756
Forklift (5 K)	4	0.2	67						5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5			90	7,560
Forklift (10 K) (Aerial Lift)	4	0.31	110						5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5			90	7,560
Post Machine	6	0.40	49						7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7			126	15,876
Skid Steer	4	0.4	80						10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			180	15,120
Truck, flatbed (onroad)	4	0.38	238						2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2			36	3,024
Truck (onroad)	4	0.38	238						15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15			270	22,680
			Sub-totals	-	-	-	-	-	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	-	-	1,242	114,156
Activity 6, Construction - Substation (18 months)																														
Water truck	8	0.38	230					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	3,024
Auger	4	0.5	238					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	1,512
Backhoe/Excavator	4	0.37	90					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	1,512
Crane	5	0.29	400					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	1,890
Forklift	4	0.2	90					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				36	3,024
Mini Excavator	6	0.5	42					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	2,268
Man/Aerial Lift	4	0.31	60					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	1,512
Tractor	6	0.36	190					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	2,268
Truck, flatbed (onroad)	2	0.38	200					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2				36	1,512
Truck (onroad)	2	0.38	200					4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4				72	3,024
Generator (45 kW)	24	0.74	60					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				18	9,072
			Sub-totals	-	-	-	-	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	-	-	-	288	30,618
Activity 7, Construction - Gen-Tie (10 acres, 6 months)																														
Water truck	8	0.38	230																2	2	2	2	2	2				12	2,016
Backhoe/Excavator	4	0.37	90																1	1	1	1	1	1				6	504
Crane	4	0.29	400																1	1	1	1	1	1				6	504
Crawler Tractor	4	0.29	147																1	1	1	1	1	1				6	504
Truck Mounted Digger	4	0.42	190																1	1	1	1	1	1				6	504
Forklift	4	0.2	145																1	1	1	1	1	1				6	504
Generator	4	0.74	45																1	1	1	1	1	1				6	504
Generator (45 kW)	24	0.74	60																1	1	1	1	1	1				6	3,024
Tensioner	4	0.42	238																1	1	1	1	1	1				6	504
Truck (onroad)	4	0.38	200																7	7	7	7	7	7				42	3,528
Wire Truck	4	0.38	238																1	1	1	1	1	1				6	504
			Sub-totals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	18	18	18	18	18	-	-	-	108	12,600
Activity 8, Construction - O&M Building (6 months)																														
Water truck	8	0.38	230																1	1	1	1	1	1				6	1,008
Backhoe/Excavator	1	0.37	90																1	1	1	1	1	1				6	126
Motor Grader	1	0.41	185																1	1	1	1	1	1				6	126
Scraper	1	0.4	365																1	1	1	1	1	1				6	126
Truck	2	0.38	200																3	3	3	3	3	3				18	756
			Sub-totals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	7	7	7	7	-	-	-	42	2,142

Activity 9, Construction - Testing/Cleanup/Restoration (6 months)																															
Water truck	8	0.38	230																				2	2	2	2	2	2	12	2,016
Backhoe/Excavator	4	0.37	90																				1	1	1	1	1	1	6	504
Motor Grader	6	0.41	185																				1	1	1	1	1	1	6	756
Scraper	6	0.4	365																				2	2	2	2	2	2	12	1,512
Truck	2	0.38	200																				3	3	3	3	3	3	18	756
Water Pump	8	0.74	45																				1	1	1	1	1	1	6	1,008
Generator (Office)(45 kW)	24	0.74	60																				1	1	1	1	1	1	6	3,024
Generator (Security, IT)(30 kW)	24	0.74	40																				1	1	1	1	1	1	6	3,024
Sub-totals				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	12	12	12	12	12	72	12,600
TOTAL				35	70	35	105	140	209	209	209	209	209	209	209	209	209	209	234	234	234	211	211	141	81	12	12	4,054	435,372

ESTIMATED CONSTRUCTION ACTIVITY DURATION in MONTHS/EQUIPMENT PIECES per MONTH

activity	CONSTRUCTION EQUIPMENT DESCRIPTION	Hours Daily Operation	LOAD FACTOR[1]	HP	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sept 2017	Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sept 2018	Oct 2018	Nov 2018	Dec 2018	TOTAL EQUIPMENT PIECE MONTHS[2]	TOTAL HOURS
Activity 1: Move-On (Laydown, Construction Trailers, and Parking Area) (109 acres)	Water truck	8	0.38	230	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	672
	Water Pull	8	0.41	185	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	672
	Motor Grader	6	0.41	185	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	756
	Scraper	6	0.40	365	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	756
	Dozer (D6)	6	0.40	158	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	252
	Loader	6	0.36	190	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	504
	Tractor Buster	6	0.42	120	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	504
	Tractor Disk	6	0.42	300	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	504
	Roller/Vibrator/Padder	6	0.38	160	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	252
	Skid Steer	6	0.40	83	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	756
	Generator (Office)(45 kW)	24	0.74	60	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1,008
	Generator (Security, IT)(30 kW)	24	0.74	40	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1,008
	Truck (Onroad)	4	0.38	238	10	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	1,680
	Water Well Pump	8	0.74	45	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	672
Activity 2, Grading - Site Preparation (2,900 acres, 18 months)(Assumes no onsite electrical connection)	Water truck	8	0.38	230	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	36	6,048
	Water Pull	8	0.41	185	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	36	6,048
	Motor Grader	6	0.41	185	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	54	6,804
	Dozer (D6)	6	0.40	158	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	18	2,268
	Loader	6	0.36	190	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	36	4,536
	Skid Steer	6	0.40	83	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	54	6,804
	Tractor Buster	6	0.42	120	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	36	4,536
	Tractor Disk	6	0.42	300	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	36	4,536
	Truck (onroad)	4	0.38	238	-	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	-	-	-	-	-	-	180	15,120
	Generator (Office)(45 kW)	24	0.74	60	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	18	9,072
	Generator (Security, IT)(30 kW)	24	0.74	40	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	18	9,072
	Roller/Vibrator/Padder	6	0.38	160	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	18	2,268
	Scraper	6	0.40	365	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	54	6,804
	Water Pump	8	0.74	45	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	36	6,048
Activity 3, Construction - Solar Array Structural Components (18 months)	Water truck	8	0.38	238	-	-	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	54	9,072
	ATV	4	0.40	24	-	-	-	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	-	-	-	-	360	30,240
	Air Compressor	6	0.48	49	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	18	2,268
	Crane	2	0.29	400	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	18	756
	Forklift (5 K)	4	0.20	67	-	-	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	-	-	-	-	90	7,560
	Forklift (10 K) (Aerial Lift)	4	0.31	110	-	-	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	-	-	-	-	90	7,560
	Post Machine	6	0.40	49	-	-	-	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	-	-	-	-	126	15,876
	Skid Steer	4	0.40	80	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	-	-	-	-	180	15,120
	Truck, flatbed (onroad)	4	0.38	238	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	36	3,024
	Truck (onroad)	4	0.38	238	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	-	-	-	-	270	22,680
	Generator (45 kW)	24	0.74	60	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	18	9,072

Activity 4, Trenching (Underground Work) (18 months)	Water truck	8	0.38	230	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	36	6,048
	Backhoe/Excavator	4	0.37	90	-	-	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	-	-	-	72	6,048
	Cable Plow	6	0.42	120	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	2,268
	Cable Trencher	6	0.50	42	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	2,268
	Compactor	4	0.43	180	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	1,512
	Roller/Vibrator/Padder	6	0.38	180	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	36	4,536
	Mini-Trencher	6	0.50	40	-	-	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	-	-	-	72	9,072
	Sheepsfoot Roller	6	0.38	95	-	-	-	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-	54	6,804
	5 CY Dump Truck	4	0.38	480	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	1,512
Activity 5, Construction - Solar Module Installation (18 months)	Water truck	8	0.38	230	-	-	-	-	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	54	9,072
	ATV	4	0.40	24	-	-	-	-	-	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	-	-	360	30,240
	Air Compressor	6	0.48	49	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	18	2,268
	Crane	2	0.29	400	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	18	756
	Forklift (5 K)	4	0.20	67	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	-	-	90	7,560
	Forklift (10 K) (Aerial Lift)	4	0.31	110	-	-	-	-	-	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	-	-	90	7,560
	Post Machine	6	0.40	49	-	-	-	-	-	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	-	-	126	15,876
	Skid Steer	4	0.40	80	-	-	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	-	-	180	15,120
	Truck, flatbed (onroad)	4	0.38	238	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	36	3,024
	Truck (onroad)	4	0.38	238	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	-	-	270	22,680
Activity 6, Construction - Substation (18 months)	Water truck	8	0.38	230	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	3,024
	Auger	4	0.50	238	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	1,512
	Backhoe/Excavator	4	0.37	90	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	1,512
	Crane	5	0.29	400	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	1,890
	Forklift	4	0.20	90	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	36	3,024
	Mini Excavator	6	0.50	42	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	2,268
	Man/Aerial Lift	4	0.31	60	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	1,512
	Tractor	6	0.36	190	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	2,268
	Truck, flatbed (onroad)	2	0.38	200	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	36	1,512
	Truck (onroad)	2	0.38	200	-	-	-	-	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	-	-	-	72	3,024
	Generator (45 kW)	24	0.74	60	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	18	9,072
Activity 7, Construction - Gen-Tie (10 acres, 6 months)	Water truck	8	0.38	230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	-	-	-	12	2,016
	Backhoe/Excavator	4	0.37	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	504
	Crane	4	0.29	400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	504
	Crawler Tractor	4	0.29	147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	504
	Truck Mounted Digger	4	0.42	190	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	504
	Forklift	4	0.20	145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	504
	Generator	4	0.74	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	504
	Generator (45 kW)	24	0.74	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	3,024
	Tensioner	4	0.42	238	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	504
	Truck (onroad)	4	0.38	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	7	7	7	7	-	-	-	42	3,528
	Wire Truck	4	0.38	238	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	504
Activity 8, Construction - O&M Building (6 months)	Water truck	8	0.38	230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	1,008
	Backhoe/Excavator	1	0.37	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	126
	Motor Grader	1	0.41	185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	126
	Scraper	1	0.40	365	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	-	-	-	6	126
	Truck	2	0.38	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	-	-	-	18	756
Activity 9, Construction - Testing/Cleanup/Restoration (6 months)	Water truck	8	0.38	230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	12	2,016
	Backhoe/Excavator	4	0.37	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	6	504
	Motor Grader	6	0.41	185	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	6	756
	Scraper	6	0.40	365	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	12	1,512
	Truck	2	0.38	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	18	756
	Water Pump	8	0.74	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	6	1,008
	Generator (Office)(45 kW)	24	0.74	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	6	3,024
	Generator (Security, IT)(30 kW)	24	0.74	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	6	3,024

Row Labels	Max of HP	Max of Hours	Max of LOAD	Sum of Dec	Sum of Jan	Sum of Feb	Sum of Mar	Sum of Apr	Sum of May	Sum of Jun	Sum of Jul	Sum of Aug	Sum of Sept	Sum of Oct	Sum of Nov	Sum of Dec	Sum of Jan	Sum of Feb	Sum of Mar	Sum of Apr	Sum of May	Sum of Jun	Sum of Jul	Sum of Aug	Sum of Sept	Sum of Oct	Sum of Nov	Sum of Dec
5 CY Dump Truck	480	4	0.38	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
Air Compressor	49	6	0.48	0	0	0	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	0	0
ATV	24	4	0.4	0	0	0	20	20	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	20	20	0	0
Auger	238	4	0.5	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
Backhoe/Excavator	90	4	0.37	0	0	0	0	5	5	5	5	5	5	5	5	5	5	5	5	7	7	7	8	8	8	1	1	1
Cable Plow	120	6	0.42	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
Cable Trencher	42	6	0.5	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
Compactor	180	4	0.43	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
Crane	400	5	0.29	0	0	0	1	2	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	3	1	0	0
Crawler Tractor	147	4	0.29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0
Dozer (D6)	158	6	0.4	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
Forklift	145	4	0.2	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	0	0	0
Forklift (10 K) (Aerial Lift)	110	4	0.31	0	0	0	5	5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	5	5	0	0
Forklift (5 K)	67	4	0.2	0	0	0	5	5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	5	5	0	0
Generator	45	4	0.74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0
Generator (45 kW)	60	24	0.74	0	0	0	1	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	2	0	0	0
Generator (Office)(45 kW)	60	24	0.74	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Generator (Security, IT)(30 kW)	40	24	0.74	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Loader	190	6	0.36	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0
Man/Aerial Lift	60	4	0.31	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
Mini Excavator	42	6	0.5	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
Mini-Trencher	40	6	0.5	0	0	0	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0
Motor Grader	185	6	0.41	3	6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	2	2	2	1	1	1
Post Machine	49	6	0.4	0	0	0	7	7	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	7	7	0	0
Roller/Vibrator/Padder	180	6	0.38	1	2	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	0	0	0
Scraper	365	6	0.4	3	6	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	3	3	3	2	2	2
Sheepsfoot Roller	95	6	0.38	0	0	0	0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	0	0
Skid Steer	83	6	0.4	3	6	3	13	13	23	23	23	23	23	23	23	23	23	23	23	23	23	23	20	20	10	10	0	0
Tensioner	238	4	0.42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0
Tractor	190	6	0.36	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
Tractor Buster	120	6	0.42	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0
Tractor Disk	300	6	0.42	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0
Truck	200	2	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	6	6	6	3	3	3
Truck (Onroad)	238	4	0.38	10	20	10	25	29	44	44	44	44	44	44	44	44	44	44	44	51	51	51	41	41	26	15	0	0
Truck Mounted Digger	190	4	0.42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0
Truck, flatbed (onroad)	238	4	0.38	0	0	0	2	4	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	4	2	0	0
Water Pull	185	8	0.41	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0
Water Pump	45	8	0.74	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1
Water truck	238	8	0.38	2	4	2	5	8	11	11	11	11	11	11	11	11	11	11	11	14	14	14	14	14	11	5	2	2
Water Well Pump	45	8	0.74	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wire Truck	238	4	0.38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0
Grand Total	**480**	**24**	**0.74**	**35**	**70**	**35**	**105**	**140**	**209**	**209**	**209**	**209**	**209**	**209**	**209**	**209**	**209**	**209**	**209**	**234**	**234**	**234**	**211**	**211**	**141**	**81**	**12**	**12**
				238	476	238	587	786	1111	1111	1111	1111	1111	1111	1111	1111	1111	1111	1111	1242	1242	1242	1104	1104	755	425	100	100

Desert Quartzite Solar Project

Construction Emission Estimations

TABLE 3 ESTIMATED CONSTRUCTION DISTURBANCE SUMMARY

Prepared by URS-AECOM; updated as of 8/20/15

CONSTRUCTION DISTURBANCE BY MONTH[1]																															
Disturbance Breakdown by Activity [1,2]	Dec 2016	Jan 2017	Feb 2017	Mar 2017	Apr 2017	May 2017	Jun 2017	Jul 2017	Aug 2017	Sept 2017	Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sept 2018	Oct 2018	Nov 2018	Dec 2018	Acres Disturbed	Total Months	**Monthly Average Per Activity**		**Total Disturbance by Activity**	
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**						
Activity 1: Grading - Move On (109 Acres) (2 months)																															
Acreage Disturbance (ac)	55	55		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	109	2	55	ac	109	ac
Cut/Fill (cy)	13,500	13,500		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			13,500	cy	27,000	cy
Activity 2, Grading - Site Preparation (3,756 Acres)(18 months)																															
Acreage Disturbance (ac)	-	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209	209				-	-	-	3,756	18	209	ac	3,756	ac
Cut/Fill (cy)	-	42,080	42,080	42,080	42,080	42,080	42,080	42,080	42,080	42,080	42,080	42,080	42,080	42,080	42,080	42,080	42,080	42,080	42,080				-	-	-			42,080	cy	757,440	cy
Activity 3, Construction - Solar Array Structural Components																															
Acreage Disturbance (ac)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ac	-	ac
Cut/Fill (cy)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	cy	-	cy
Activity 4, Trenching - PCS Excavation, PCS Placement, UG Cabling (18 months)																															
Acreage Disturbance (ac)	-	-	-	-	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	-	-	-	200	18	11	ac	200	ac
Cut/Fill (cy)	-	-	-	-	2,241	2,241	2,241	2,241	2,241	2,241	2,241	2,241	2,241	2,241	2,241	2,241	2,241	2,241	2,241	2,241	2,241	2,241	-	-	-			2,241	cy	40,338	cy
Activity 5, Construction - Solar Module Installation (18 months)																															
Acreage Disturbance (ac)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	ac	-	ac
Cut/Fill (cy)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	cy	-	cy
Activity 6, Construction - Substation (7 acres) (6 months)																															
Acreage Disturbance (ac)																	1	1	1	1	1	1				7	6	1.2	ac	7.0	ac
Cut/Fill (cy)	-	-	-	-													235	235	235	235	235	235						235	cy	1,410	cy
Activity 7, Construction - Gen-Tie (10 acres) (6 months)																															
Acreage Disturbance (ac)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	-	-	-	10	6	2	ac	10	ac
Cut/Fill (cy)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,017	2,017	2,017	2,017	2,017	2,017	-	-	-			2,017	cy	12,102	cy
Activity 8, Construction - O&M Building (6 months)																															
Acreage Disturbance (ac)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							-	-	-		-	-	ac	-	ac
Cut/Fill (cy)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							-	-	-			-	cy	-	cy
Activity 9, Construction - Testing/Cleanup/Restoration (6 months)																															
Acreage Disturbance (ac)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							-	-	-		-	-	ac	-	ac
Cut/Fill (cy)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							-	-	-			-	cy	-	cy
Totals (Activities 1 - 9)																															
Disturbance (ac)	55	263	209	209	220	220	220	220	220	220	220	220	220	220	220	220	223	223	223	14	14	14	-	-	-		24	**Total Disturbance**		**Total Cut/Fill**	
Cut/Fill (cy)	13,500	55,580	42,080	42,080	44,321	44,321	44,321	44,321	44,321	44,321	44,321	44,321	44,321	44,321	44,321	44,321	46,573	46,573	46,573	4,493	4,493	4,493	-	-	-			4,082	ac	838,290	cy

NOTES:

[1] Disturbance numbers (acres and cubic yards) are averaged on a monthly basis over the duration of the Activity and could vary on a month-to-month basis.

[2] Cut and fill volumes are for balanced, onsite cut and fill operations.

Desert Quartzite Solar Project
Construction Emission Estimations
Emission Factors
Prepared by URS-AECOM; updated as of August 2015

1. Mobile Source (off-road Equipment and on-road vehicles) - Exhaust Emission Factors

				Emission Factors									
Equipment	HP	EF source	EF source name (hp)	Exhausted PM_{10}	Exhausted $PM_{2.5}$	NO_x	SO_x	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Off-road Equipment (unit: lb/hr)													
5 CY Dump Truck	480	OFFROAD2011/2007	Off-Highway Trucks (500)	0.05	0.05	1.39	0.00	0.58	0.10	272.09	0.02	0.01	274.74
Air Compressor	49	OFFROAD2011/2007	Other Construction Equipment/Air Compressor (50)	0.02	0.02	0.19	0.00	0.23	0.04	22.25	0.01	0.00	23.19
ATV	24	OFFROAD2011/2007	Other Construction Equipment (50/25)	0.02	0.02	0.19	0.00	0.05	0.04	13.21	0.00	0.00	13.43
Auger	238	OFFROAD2011/2007	Bore/Drill Rigs (250)	0.02	0.02	0.73	0.00	0.34	0.04	187.93	0.01	0.00	188.83
Backhoe/Excavator	90	OFFROAD2011/2007	Excavators (120)	0.02	0.02	0.33	0.00	0.51	0.03	73.56	0.01	0.00	74.75
Cable Plow	120	OFFROAD2011/2007	Trencher (120)	0.05	0.05	0.64	0.00	0.46	0.06	64.84	0.01	0.00	66.38
Cable Trencher	42	OFFROAD2011/2007	Trencher (50)	0.02	0.02	0.23	0.00	0.38	0.05	32.89	0.01	0.01	34.76
Compactor	180	OFFROAD2011/2007	Rollers (175)	0.02	0.02	0.53	0.00	0.61	0.03	108.05	0.01	0.00	109.53
Crane	400	OFFROAD2011/2007	Cranes (500)	0.05	0.05	1.27	0.00	0.44	0.08	179.94	0.01	0.01	181.83
Crawler Tractor	147	OFFROAD2011/2007	Crawler Tractors (175)	0.05	0.05	0.97	0.00	0.74	0.07	121.08	0.01	0.01	123.12
Dozer (D6)	158	OFFROAD2011/2007	Rubber Tired Dozers (175)	0.07	0.07	1.29	0.00	0.83	0.10	129.36	0.02	0.01	132.01
Forklift	145	OFFROAD2011/2007	Rough Terrain Forklifts (120)	0.02	0.02	0.33	0.00	0.42	0.02	62.39	0.01	0.00	63.44
Forklift (10 K) (Aerial Lift)	110	OFFROAD2011/2007	Rough Terrain Forklifts (120)	0.02	0.02	0.33	0.00	0.42	0.02	62.39	0.01	0.00	63.44
Forklift (5 K)	67	OFFROAD2011/2007	Rough Terrain Forklifts (120)	0.02	0.02	0.33	0.00	0.42	0.02	62.39	0.01	0.00	63.44
Generator	45	OFFROAD2011/2007	Other Construction Equipment /Generator Set (50)	0.02	0.02	0.19	0.00	0.24	0.04	30.60	0.01	0.00	31.48
Generator (45 kW)	60	OFFROAD2011/2007	Other Construction Equipment /Generator Set (50)	0.02	0.02	0.19	0.00	0.24	0.04	30.60	0.01	0.00	31.48
Generator (Office)(45 kW)	60	OFFROAD2011/2007	Other Construction Equipment /Generator Set (50)	0.02	0.02	0.19	0.00	0.24	0.04	30.60	0.01	0.00	31.48
Generator (Security, IT)(30 kW)	40	OFFROAD2011/2007	Other Construction Equipment /Generator Set (50)	0.02	0.02	0.19	0.00	0.24	0.04	30.60	0.01	0.00	31.48
Loader	190	OFFROAD2011/2007	Tractors/Loaders/Backhoes (175)	0.03	0.02	0.53	0.00	0.58	0.04	101.30	0.01	0.00	102.42
Man/Aerial Lift	60	OFFROAD2011/2007	Aerial Lifts (50)	0.00	0.00	0.12	0.00	0.16	0.01	19.60	0.00	0.00	20.20
Mini Excavator	42	OFFROAD2011/2007	Excavators (50)	0.01	0.01	0.15	0.00	0.26	0.02	25.00	0.01	0.00	25.83
Mini-Trencher	40	OFFROAD2011/2007	Trencher (50)	0.02	0.02	0.23	0.00	0.38	0.05	32.89	0.01	0.01	34.76
Motor Grader	185	OFFROAD2011/2007	Grader (250)	0.03	0.03	1.06	0.00	0.39	0.06	171.96	0.01	0.01	173.75
Post Machine	49	OFFROAD2011/2007	Bore/Drill Rigs (50)	0.02	0.02	0.23	0.00	0.22	0.03	31.01	0.00	0.00	31.32
Roller/Vibrator/Padder	180	OFFROAD2011/2007	Rollers (175)	0.02	0.02	0.53	0.00	0.61	0.03	108.05	0.01	0.00	109.53
Scraper	365	OFFROAD2011/2007	Scrapers (250)	0.10	0.09	2.12	0.00	0.57	0.15	209.28	0.02	0.01	212.01
Sheepsfoot Roller	95	OFFROAD2011/2007	Rollers (120)	0.03	0.03	0.44	0.00	0.40	0.04	58.94	0.01	0.00	60.08
Skid Steer	83	OFFROAD2011/2007	Skid Steer Loaders (120)	0.01	0.01	0.20	0.00	0.27	0.01	42.72	0.00	0.00	43.15
Tensioner	238	OFFROAD2011/2007	Other Construction Equipment (250/175)	0.04	0.04	1.12	0.00	0.59	0.07	106.42	0.01	0.00	107.46
Tractor	190	OFFROAD2011/2007	Tractors/Loaders/Backhoes (175)	0.03	0.02	0.53	0.00	0.58	0.04	101.30	0.01	0.00	102.42
Tractor Buster	120	OFFROAD2011/2007	Tractors/Loaders/Backhoes (175)	0.03	0.02	0.53	0.00	0.58	0.04	101.30	0.01	0.00	102.42
Tractor Disk	300	OFFROAD2011/2007	Tractors/Loaders/Backhoes (250)	0.03	0.02	0.76	0.00	0.35	0.04	171.58	0.01	0.00	173.05
Truck	200	OFFROAD2011/2007	Off-Highway Trucks (250)	0.04	0.04	0.97	0.00	0.36	0.07	166.40	0.01	0.00	168.08
Truck (Onroad)	238	OFFROAD2011/2007	Off-Highway Trucks (250)	0.04	0.04	0.97	0.00	0.36	0.07	166.40	0.01	0.00	168.08
Truck Mounted Digger	190	OFFROAD2011/2007	Bore/Drill Rigs (250)	0.02	0.02	0.73	0.00	0.34	0.04	187.93	0.01	0.00	188.83
Truck, flatbed (onroad)	238	OFFROAD2011/2007	Off-Highway Trucks (250)	0.04	0.04	0.97	0.00	0.36	0.07	166.40	0.01	0.00	168.08
Water Pull	185	OFFROAD2011/2007	Off-Highway Trucks (250)	0.04	0.04	0.97	0.00	0.36	0.07	166.40	0.01	0.00	168.08
Water Pump	45	OFFROAD2011/2007	Other Construction Equipment (50/25)	0.02	0.02	0.19	0.00	0.05	0.04	13.21	0.00	0.00	13.43
Water truck	238	OFFROAD2011/2007	Off-Highway Trucks (250)	0.04	0.04	0.97	0.00	0.36	0.07	166.40	0.01	0.00	168.08
Water Well Pump	45	OFFROAD2011/2007	Other Construction Equipment (50/25)	0.02	0.02	0.19	0.00	0.05	0.04	13.21	0.00	0.00	13.43
Wire Truck	238	OFFROAD2011/2007	Off-Highway Trucks (250)	0.04	0.04	0.97	0.00	0.36	0.07	166.40	0.01	0.00	168.08
On-road Vehicle - Running Exhaust (unit: lb/mile)													
Aggregate Base Delivery Trucks		EMFAC2014	T7 tractor construction	0.00	0.00	0.02	0.00	0.00	0.00	4.17	0.00	0.00	4.18
Concrete Delivery Trucks		EMFAC2014	T7 tractor construction	0.00	0.00	0.02	0.00	0.00	0.00	4.17	0.00	0.00	4.18
Material Delivery Trucks		EMFAC2014	T7 tractor construction	0.00	0.00	0.02	0.00	0.00	0.00	4.17	0.00	0.00	4.18
Tracker Deliveries Trucks		EMFAC2014	T7 tractor construction	0.00	0.00	0.02	0.00	0.00	0.00	4.17	0.00	0.00	4.18
Water Haul Trucks		EMFAC2014	T6 Instate Construction Heavy	0.00	0.00	0.02	0.00	0.00	0.00	2.83	0.00	0.00	2.84
Worker Vehicles		EMFAC2014	LDA/LDT1/LDT2	0.00	0.00	0.00	0.00	0.01	0.00	1.13	0.00	0.00	1.14
Fuel Trucks		EMFAC2014	T6 Instate Construction Heavy	0.00	0.00	0.02	0.00	0.00	0.00	2.83	0.00	0.00	2.84
On-road Vehicle - Starting Exhaust (unit: lb/trip)													
Worker Vehicles		EMFAC2014	LDA/LDT1/LDT2	0.00	0.00	0.00	0.00	0.01	0.00	0.25	0.00	0.00	0.26

NOTE:

1. Assume all construction equipment use diesel.
2. Use aggregated fuel in EMFAC2014 for all vehicles.
3. All emission factors for on-road vehicles from EMFAC2014, except N2O EFs which are scaled from CH4.
4. Onsite speed is limited to 15 mph
   Offsite speed is limited to 55 mph, for freeway
   Offsite speed is limited to 40 mph, for local paved road
   Offsite speed is limited to 30 mph, for local unpaved road
5. The load factors in Table 2 are usage factor in the emissions calculations.
6. Assume the emissions from wind erosion are negligible between the project construction and the current site condition.
7. $PM_{2.5}$ emission factors determined using guidance from SCAQMD Final - Methodology to Calculate $PM_{2.5}$ and $PM_{2.5}$ Significance Thresholds 10/1/2006, Appendix A - Updated CEIDARS Table with $PM_{2.5}$ Fractions
   - $PM_{2.5}$ Fraction of PM_{10}, Brake wear = 0.429
   - $PM_{2.5}$ Fraction of PM_{10}, Diesel = 0.920
   - $PM_{2.5}$ Fraction of PM_{10}, Gasoline-catalyst = 0.928
   - $PM_{2.5}$ Fraction of PM_{10}, Tire wear = 0.250
   - $PM_{2.5}$ Fraction of PM_{10}, Diesel off-road equipment = 0.920
8. Greenhouse Gas Global Warming Potential (GWP) - Table A-1 of 40 CFR Part 98 Subpart A
   - CO_2 GWP = 1
   - CH_4 GWP = 25
   - N_2O GWP = 298

2. Mobile Source (off-road Equipment and on-road vehicles) - Fugitive Dust Emission Factors

Unpaved Road Fugitive Dust Emissions

Emission Factor Equation:

(1) Travel on unpaved surfaces

$E = k * (s/12)^a * (W/3)^b * [(365 - P)/365]$

Source: EPA AP-42 Section 13.2.2 Unpaved Roads Equations 1a and 2
E = size-specific emission factor (lb/VMT)
k, a, b = empirical constants

8.5 — s = surface material silt content (%) — Table 13.2.2-1 Construction sites - Scraper routes
W = mean vehicle weight (tons)

constants

	$PM_{2.5}$	PM_{10}	Industrial Roads
k (lb/VMT)	0.15	1.5	
a	0.9	0.9	
b	0.45	0.45	

17 — P = Mean number of days per year with at least 0.01 inches of precipitation (from WRCC (040924) BLYTHE, 1931-2006 average)
1 — VMT/hr, assumption (each equipment in average)

(2) Bulldozing & grading — Source: EPA AP-42 Section 11.9

$E = p * 1 * s^{1.5} / M^{1.4}$ — PM10 Emissions from bulldozing (lb/hr); Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.75	p = particle size multiplier for PM10
6.9	s = Silt content (%) (from Table 11.9-3 for bulldozers overburden)
7.9	M = Moisture content of surface material (%) (from Table 11.9-3 for bulldozers overburden)
0.75	lb/hr of PM10

$E = p * 5.7 * s^{1.2} / M^{1.3}$ — PM2.5 Emissions from bulldozing (lb/hr); Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.105	p = particle size multiplier for PM2.5
6.9	s = Silt content (%) (from Table 11.9-3 for bulldozers overburden)
7.9	M = Moisture content of surface material (%) (from Table 11.9-3 for bulldozers overburden)
0.41	lb/hr of PM2.5

$E = p * 0.051 * S^{2.0}$ — PM10 Emissions from grading (lb/VMT); Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.6	p = particle size multiplier for PM10
7.1	S = mean vehicle speed (mph) (from Table 11.9-3 for grader)
1.54	lb/VMT of PM10

$E = p * 0.040 * S^{2.5}$ — PM2.5 Emissions from grading (lb/VMT); Table 11.9-1 EMISSION FACTOR EQUATIONS FOR UNCONTROLLED OPEN DUST SOURCES AT WESTERN SURFACE COAL MINES (Overburden)

0.031	p = particle size multiplier for PM2.5
7.1	S = mean vehicle speed (mph) (from Table 11.9-3 for grader)
0.17	lb/VMT of PM2.5
25	months of earth work
10	total construction hours per work day
1	adjusted usage factor (assume equipment is in operation this % of the day)
21	construction days per month

(3) Dirt Piling or Material Handling — Source: PM10 Emissions from Material Handling (lb/ton) from EPA AP-42 Chapter 13.2.4 Eq. 1

$E = k * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}$ — E = Emission factor (lb/ton material handled)

8 — U = Mean Wind speed (mph) (from Blythe historical met data) https://weatherspark.com/averages/29776/Blythe-California-United-States
12 — M = Moisture content of surface material (%) (from Table 13.2.4-1 for cover at municipal landfill)

constants

	$PM_{2.5}$	PM_{10}
k	0.053	0.35

0.00003 — lb/ton of PM2.5
0.00017 — lb/ton of PM10
Assume 50% soil movement from loaders, 25% from excavator and 25% from skid steer

Total amount of material handling calculation

1,597	yd3/day	4,978	ton/day	1,245	ton/hr
838,290	yd3/project	2,613,632	tons/project	6236	density of soil (lb/yd3)

(The range of surficial soil density (total unit weight) is from about sigma low 115 to sigma high 135 lb/cf. Use the highest as the most conservative value.)

total project

838,290	cubic yds of cut
4,082	total acres disturbed as described in Project Description and only half of this soil is picked up and moved via the equipment

	Weight (ton)	(1) Travel on unpaved surfaces			(2) Bulldozing & grading			(3) Dirt Piling or Material Handling			Sum Total Mitigated EF		
		$PM_{2.5}$ EF (lbs/hr)	PM_{10} EF (lbs/hr)	Mitigation Efficiency	$PM_{2.5}$ EF (lbs/hr)	PM_{10} EF (lbs/hr)	Mitigation Efficiency	$PM_{2.5}$ EF (lbs/hr)	PM_{10} EF (lbs/hr)	Mitigation Efficiency	$PM_{2.5}$ EF (lbs/hr)	PM_{10} EF (lbs/hr)	Mitigation Efficiency
Off-road Equipment													
5 CY Dump Truck	32	0.30	3.04	83%							0.05	0.51	83%
Air Compressor	3	0.10	1.05	83%							0.02	0.18	83%
ATV	2	0.09	0.87	83%							0.01	0.15	83%
Auger	16	0.22	2.23	83%							0.04	0.37	83%
Backhoe/Excavator	6							0.01	0.05	61%	0.00	0.02	61%
Cable Plow	8				0.41	0.75	61%				0.16	0.29	61%
Cable Trencher	3				0.41	0.75	61%				0.16	0.29	61%
Compactor	12	0.20	1.96	83%							0.03	0.33	83%
Crane	27	0.28	2.82	83%							0.05	0.47	83%
Crawler Tractor	10	0.18	1.80	83%							0.03	0.30	83%
Dozer (D6)	11				0.41	0.75	61%				0.16	0.29	61%
Forklift	10	0.18	1.80	83%							0.03	0.30	83%
Forklift (10 K) (Aerial Lift)	7	0.15	1.54	83%							0.03	0.26	83%
Forklift (5 K)	4	0.12	1.19	83%							0.02	0.20	83%
Generator	3	0.10	1.05	83%							0.02	0.18	83%
Generator (45 kW)	4	0.12	1.19	83%							0.02	0.20	83%
Generator (Office)(45 kW)	4	0.12	1.19	83%							0.02	0.20	83%
Generator (Security, IT)(30 kW)	3	0.10	1.05	83%							0.02	0.18	83%
Loader	13							0.02	0.10	61%	0.01	0.04	61%
Man/Aerial Lift	4	0.12	1.19	83%							0.02	0.20	83%
Mini Excavator	3	0.10	1.05	83%							0.02	0.18	83%
Mini-Trencher	3				0.41	0.75	61%				0.16	0.29	61%
Motor Grader	12				1.18	10.95	61%				0.46	4.27	61%
Post Machine	3	0.10	1.05	83%							0.02	0.18	83%
Roller/Vibrator/Padder	12				1.18	10.95	61%				0.46	4.27	61%
Scraper	24				0.41	0.75	61%				0.16	0.29	61%
Sheepsfoot Roller	6				1.18	10.95	61%				0.46	4.27	61%
Skid Steer	6							0.01	0.05	61%	0.00	0.02	61%
Tensioner	16	0.22	2.23	83%							0.04	0.37	83%
Tractor	13	0.20	2.03	83%							0.03	0.34	83%
Tractor Buster	8				1.18	10.95	61%				0.46	4.27	61%
Tractor Disk	20	0.25	2.46	83%							0.04	0.41	83%
Truck	13	0.20	2.03	83%							0.03	0.34	83%
Truck (Onroad)	16	0.22	2.23	83%							0.04	0.37	83%
Truck Mounted Digger	13	0.20	2.03	83%							0.03	0.34	83%
Truck, flatbed (onroad)	16	0.22	2.23	83%							0.04	0.37	83%
Water Pull	12	0.20	1.96	83%							0.03	0.33	83%
Water Pump	3	0.10	1.05	83%							0.02	0.18	83%
Water truck	16	0.22	2.23	83%							0.04	0.37	83%
Water Well Pump	3	0.10	1.05	83%							0.02	0.18	83%
Wire Truck	16	0.22	2.23	83%							0.04	0.37	83%

	Weight (ton)	(1) Travel on unpaved surfaces			Sum Total Mitigated EF		
		$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)	Mitigation Efficiency	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)	Mitigation Efficiency
On-road Vehicle (on-site)							
Aggregate Base Delivery Trucks	20	0.25	2.46	83%	0.04	0.41	83%
Concrete Delivery Trucks	20	0.25	2.46	83%	0.04	0.41	83%
Material Delivery Trucks	20	0.25	2.46	83%	0.04	0.41	83%
Tracker Deliveries Trucks	20	0.25	2.46	83%	0.04	0.41	83%
Water Haul Trucks	12	0.20	1.96	83%	0.03	0.33	83%
Worker Vehicles	3	0.10	1.05	83%	0.02	0.18	83%
Fuel Trucks	12	0.20	1.96	83%	0.03	0.33	83%
On-road Vehicle (off-site)							
Aggregate Base Delivery Trucks	20	0.25	2.46	83%	0.04	0.41	83%
Concrete Delivery Trucks	20	0.25	2.46	83%	0.04	0.41	83%
Material Delivery Trucks	20	0.25	2.46	83%	0.04	0.41	83%
Tracker Deliveries Trucks	20	0.25	2.46	83%	0.04	0.41	83%
Water Haul Trucks	12	0.20	1.96	83%	0.03	0.33	83%
Worker Vehicles	3	0.10	1.05	83%	0.02	0.18	83%
Fuel Trucks	12	0.20	1.96	83%	0.03	0.33	83%

Paved Road Fugitive Dust Emissions

(1) Travel on paved road

$E = [k * (sL)^{0.91} * (W)^{1.02}] (1 - P/4N)$

Source: EPA AP-42 Section 13.2.1 Paved Roads Equation 2
E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest

0.06 — sL = road surface silt loading (grams per square meter) (g/m^2), — From AP-42 Table 13.2.1-2, ADT 5,000 to 10,000.

W = average weight (tons) of the vehicles traveling the road

	$PM_{2.5}$	PM_{10}
k (lb/VMT)	0.00054	0.0022

17 — P = Mean number of days per year with at least 0.01 inches of precipitation (from WRCC (040924) BLYTHE, 1931-2006 average)

365 — N = number of days in the year (averaging period)

		(1) Travel on paved road			Sum Total Mitigated EF		
	Weight (ton)	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)	Mitigation Efficiency	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)	Mitigation Efficiency
On-road Vehicle							
Aggregate Base Delivery Trucks	20	0.0009	0.0036	0%	0.00	0.00	0%
Concrete Delivery Trucks	20	0.0009	0.0036	0%	0.00	0.00	0%
Material Delivery Trucks	20	0.0009	0.0036	0%	0.00	0.00	0%
Tracker Deliveries Trucks	20	0.0009	0.0036	0%	0.00	0.00	0%
Water Haul Trucks	12	0.0005	0.0021	0%	0.00	0.00	0%
Worker Vehicles	3	0.0001	0.0005	0%	0.00	0.00	0%
Fuel Trucks	12	0.0005	0.0021	0%	0.00	0.00	0%

3. Fugitive Dust Mitigation Measures and Efficiencies

Area	Mitigation Measure	Control Efficiency
1. Construction Activities	Apply water every 3 hours to disturbed areas	61%
2. Construction traffic	Limit on-site vehicle speeds (on unpaved roads) to 15 mph by radar enforcement.	57%
3. Post-demolition stabilization	Apply dust suppressants (e.g., polymer emulsion) to disturbed areas upon completion of demolition.	84%
4. Travel over unpaved roads	Apply chemical dust suppressant annually to unpaved parking areas.	84%
5. Storage pile wind erosion	Water the storage pile by hand or apply cover when wind events are declared.	90%
	Require construction of 3-sided enclosures with 50% porosity.	75%
Combination of 1, 2, and 3/4		97%
Combination of 1 and 2		83%

Source: SCAQMD Air Quality Analysis Handbook, 2012. Tables XI-A, XI-D, and XI-E.
Available from: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust

Desert Quartzite Solar Project
Construction Emission Estimations
Detailed Emission Inventory
Prepared by URS-AECOM; updated as of August 2015

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 1															
On-site															
Off-road Equipment															
5 CY Dump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Air Compressor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Auger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Backhoe/Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable Plow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Compactor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (10 K) (Aerial Lift)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (5 K)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini-Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Roller/Vibrator/Padder	48	204.51	1.18	205.69	22.08	1.09	23.17	25.15	0.06	29.43	1.67	5,173.38	0.45	0.20	5,244.23
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Skid Steer	151	3.08	1.73	4.81	0.47	1.59	2.06	30.79	0.08	40.71	1.98	6,459.78	0.40	0.18	6,523.54
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	319	119.22	13.88	133.10	11.92	12.77	24.70	309.48	0.60	116.43	23.63	53,113.56	3.39	1.52	53,651.91
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water truck	128	47.69	5.55	53.24	4.77	5.11	9.88	123.79	0.24	46.57	9.45	21,245.42	1.36	0.61	21,460.76
Water Well Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	20	8.26	0.01	8.27	0.83	0.01	0.84	0.49	0.00	0.09	0.03	83.44	0.00	0.00	83.69
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	92	38.01	0.04	38.05	3.81	0.04	3.85	2.23	0.00	0.41	0.16	383.81	0.01	0.00	384.97
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	56	18.39	0.02	18.41	1.84	0.02	1.86	0.85	0.00	0.11	0.05	158.66	0.00	0.00	159.05
Worker Vehicles	252	44.34	0.00	44.34	4.44	0.00	4.44	0.13	0.00	1.44	0.05	283.50	0.02	0.01	286.23
Fuel Trucks	1	0.33	0.00	0.33	0.03	0.00	0.03	0.02	0.00	0.00	0.00	2.83	0.00	0.00	2.84
On-site Emissions Subtotal		**1,933.61**	**77.38**	**2,010.99**	**230.86**	**71.19**	**302.05**	**1,550.15**	**2.73**	**816.75**	**134.04**	**238,816.71**	**19.20**	**8.61**	**241,861.29**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	1,128	466.04	0.50	466.54	46.67	0.48	47.15	27.37	0.04	5.06	1.92	4,705.90	0.09	0.04	4,720.03
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,189	2,143.76	2.31	2,146.07	214.67	2.21	216.88	125.89	0.21	23.29	8.82	21,647.16	0.41	0.18	21,712.12
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	3,158	1,037.37	1.04	1,038.40	104.05	0.99	105.04	47.67	0.09	6.37	2.95	8,948.49	0.14	0.06	8,970.21
Worker Vehicles	14,213	2,500.62	0.13	2,500.75	250.48	0.12	250.59	7.60	0.16	80.94	2.94	15,989.61	0.97	0.43	16,143.20
Fuel Trucks	56	18.52	0.02	18.54	1.86	0.02	1.88	0.85	0.00	0.11	0.05	159.79	0.00	0.00	160.18
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	1,472	5.57	0.65	6.22	1.40	0.63	2.03	35.71	0.06	6.61	2.50	6,141.04	0.12	0.05	6,159.47
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	22,871	86.54	10.17	96.71	21.82	9.73	31.55	554.88	0.91	102.66	38.87	95,416.39	1.81	0.81	95,702.72
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	2,442	5.94	0.80	6.74	1.59	0.77	2.35	36.85	0.07	4.92	2.28	6,917.62	0.11	0.05	6,934.42
Worker Vehicles	73,987	45.42	0.66	46.08	12.25	0.61	12.86	39.58	0.84	421.36	15.28	83,236.68	5.04	2.26	84,036.24
Fuel Trucks	44	0.11	0.01	0.12	0.03	0.01	0.04	0.66	0.00	0.09	0.04	123.53	0.00	0.00	123.83
Off-site Emissions Subtotal		**6,309.90**	**16.28**	**6,326.18**	**654.81**	**15.55**	**670.36**	**877.06**	**2.37**	**651.42**	**75.65**	**243,286.22**	**8.68**	**3.89**	**244,662.42**
Total Emissions In This Month (pounds)		**8,243.51**	**93.66**	**8,337.17**	**885.67**	**86.74**	**972.42**	**2,427.21**	**5.10**	**1,468.17**	**209.70**	**482,102.93**	**27.88**	**12.50**	**486,523.71**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 2															
On-site															
Off-road Equipment															
5 CY Dump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Air Compressor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Auger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Backhoe/Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable Plow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Compactor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	101	29.59	7.44	37.03	16.27	6.84	23.11	129.56	0.15	83.38	10.52	13,039.54	1.68	0.76	13,306.74
Forklift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (10 K) (Aerial Lift)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (5 K)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (Office)(45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Security, IT)(30 kW)	746	131.16	12.91	144.08	13.12	11.88	24.99	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Loader	181	7.40	4.87	12.26	1.12	4.48	5.60	95.45	0.21	106.05	7.03	18,379.13	1.29	0.58	18,583.92
Man/Aerial Lift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini-Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Motor Grader	310	1,323.94	10.71	1,334.64	142.95	9.85	152.80	327.26	0.60	121.88	19.08	53,300.31	3.50	1.57	53,854.71
Post Machine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Roller/Vibrator/Padder	96	409.02	2.36	411.38	44.16	2.17	46.33	50.29	0.12	58.87	3.34	10,346.77	0.89	0.40	10,488.46
Scraper	302	88.78	29.51	118.29	48.80	27.15	75.95	641.04	0.71	171.79	45.13	63,286.92	5.21	2.34	64,113.29
Sheepsfoot Roller	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Skid Steer	302	6.16	3.46	9.62	0.93	3.18	4.11	61.58	0.15	81.42	3.95	12,919.57	0.80	0.36	13,047.08
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Buster	212	904.15	5.68	909.83	97.63	5.22	102.85	111.36	0.24	123.72	8.21	21,442.32	1.51	0.68	21,681.24
Tractor Disk	212	87.41	5.32	92.73	8.74	4.89	13.63	160.09	0.41	74.73	9.34	36,320.66	1.96	0.88	36,630.99
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	638	238.43	27.77	266.20	23.84	25.55	49.39	618.95	1.20	232.86	47.26	106,227.11	6.79	3.04	107,303.81
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Pull	276	90.41	11.98	102.39	9.04	11.03	20.07	267.13	0.52	100.50	20.40	45,845.39	2.93	1.31	46,310.07
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	255	95.37	11.11	106.48	9.54	10.22	19.76	247.58	0.48	93.14	18.90	42,490.84	2.72	1.22	42,921.53
Water Well Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	20	8.26	0.01	8.27	0.83	0.01	0.84	0.49	0.00	0.09	0.03	83.44	0.00	0.00	83.69
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	94	38.84	0.04	38.88	3.89	0.04	3.93	2.28	0.00	0.42	0.16	392.16	0.01	0.00	393.34
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	316	103.79	0.10	103.89	10.41	0.10	10.51	4.77	0.01	0.64	0.30	895.30	0.01	0.01	897.48
Worker Vehicles	588	103.45	0.01	103.46	10.36	0.00	10.37	0.31	0.01	3.35	0.12	661.51	0.04	0.02	667.86
Fuel Trucks	2	0.66	0.00	0.66	0.07	0.00	0.07	0.03	0.00	0.00	0.00	5.67	0.00	0.00	5.68
On-site Emissions Subtotal		**3,903.56**	**154.78**	**4,058.34**	**465.37**	**142.40**	**607.78**	**3,100.75**	**5.47**	**1,633.90**	**268.11**	**477,846.99**	**38.40**	**17.21**	**483,937.10**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	1,128	466.04	0.50	466.54	46.67	0.48	47.15	27.37	0.04	5.06	1.92	4,705.90	0.09	0.04	4,720.03
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,302	2,190.37	2.36	2,192.72	219.34	2.25	221.59	128.62	0.21	23.80	9.01	22,117.75	0.42	0.19	22,184.12
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	17,822	5,853.73	5.84	5,859.57	587.12	5.59	592.71	269.01	0.48	35.93	16.65	50,495.03	0.77	0.35	50,617.64
Worker Vehicles	33,163	5,834.78	0.29	5,835.07	584.45	0.27	584.72	17.74	0.38	188.86	6.85	37,309.09	2.26	1.01	37,667.47
Fuel Trucks	113	37.05	0.04	37.09	3.72	0.04	3.75	1.70	0.00	0.23	0.11	319.59	0.00	0.00	320.36
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	1,472	5.57	0.65	6.22	1.40	0.63	2.03	35.71	0.06	6.61	2.50	6,141.04	0.12	0.05	6,159.47
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	23,368	88.42	10.39	98.81	22.29	9.94	32.23	566.94	0.93	104.89	39.72	97,490.66	1.84	0.83	97,783.21
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	13,778	33.52	4.52	38.04	8.95	4.32	13.27	207.96	0.37	27.78	12.87	39,035.16	0.60	0.27	39,129.95
Worker Vehicles	172,637	105.99	1.53	107.52	28.59	1.42	30.00	92.36	1.95	983.17	35.66	194,218.93	11.76	5.27	196,084.56
Fuel Trucks	87	0.21	0.03	0.24	0.06	0.03	0.08	1.32	0.00	0.18	0.08	247.06	0.00	0.00	247.66
Off-site Emissions Subtotal		**14,615.67**	**26.15**	**14,641.83**	**1,502.59**	**24.96**	**1,527.55**	**1,348.73**	**4.43**	**1,376.51**	**125.36**	**452,080.21**	**17.87**	**8.01**	**454,914.47**
Total Emissions In This Month (pounds)		**18,519.23**	**180.94**	**18,700.17**	**1,967.96**	**167.37**	**2,135.33**	**4,449.48**	**9.90**	**3,010.41**	**393.47**	**929,927.20**	**56.27**	**25.23**	**938,851.57**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 3															
On-site															
Off-road Equipment															
5 CY Dump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Air Compressor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Auger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Backhoe/Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable Plow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Compactor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (10 K) (Aerial Lift)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (5 K)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini-Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Roller/Vibrator/Padder	48	204.51	1.18	205.69	22.08	1.09	23.17	25.15	0.06	29.43	1.67	5,173.38	0.45	0.20	5,244.23
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Skid Steer	151	3.08	1.73	4.81	0.47	1.59	2.06	30.79	0.08	40.71	1.98	6,459.78	0.40	0.18	6,523.54
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	319	119.22	13.88	133.10	11.92	12.77	24.70	309.48	0.60	116.43	23.63	53,113.56	3.39	1.52	53,651.91
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	128	47.69	5.55	53.24	4.77	5.11	9.88	123.79	0.24	46.57	9.45	21,245.42	1.36	0.61	21,460.76
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	2	0.83	0.00	0.83	0.08	0.00	0.08	0.05	0.00	0.01	0.00	8.34	0.00	0.00	8.37
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	260	85.40	0.09	85.48	8.57	0.08	8.65	3.92	0.01	0.52	0.24	736.64	0.01	0.01	738.43
Worker Vehicles	336	59.12	0.00	59.12	5.92	0.00	5.92	0.18	0.00	1.91	0.07	378.00	0.02	0.01	381.64
Fuel Trucks	1	0.33	0.00	0.33	0.03	0.00	0.03	0.02	0.00	0.00	0.00	2.83	0.00	0.00	2.84
On-site Emissions Subtotal		**1,969.95**	**77.40**	**2,047.35**	**234.51**	**71.21**	**305.72**	**1,550.60**	**2.73**	**817.15**	**134.06**	**239,030.28**	**19.20**	**8.61**	**242,075.80**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	113	46.60	0.05	46.65	4.67	0.05	4.71	2.74	0.00	0.51	0.19	470.59	0.01	0.00	472.00
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	14,664	4,816.36	4.81	4,821.17	483.08	4.60	487.68	221.34	0.40	29.57	13.70	41,546.54	0.64	0.29	41,647.42
Worker Vehicles	18,950	3,334.16	0.17	3,334.33	333.97	0.16	334.13	10.14	0.21	107.92	3.91	21,319.48	1.29	0.58	21,524.27
Fuel Trucks	56	18.52	0.02	18.54	1.86	0.02	1.88	0.85	0.00	0.11	0.05	159.79	0.00	0.00	160.18
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	497	1.88	0.22	2.10	0.47	0.21	0.69	12.06	0.02	2.23	0.85	2,074.27	0.04	0.02	2,080.49
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	11,336	27.58	3.72	31.30	7.37	3.56	10.92	171.11	0.31	22.86	10.59	32,117.54	0.49	0.22	32,195.53
Worker Vehicles	98,650	60.56	0.88	61.44	16.34	0.81	17.15	52.78	1.12	561.81	20.38	110,982.24	6.72	3.01	112,048.32
Fuel Trucks	44	0.11	0.01	0.12	0.03	0.01	0.04	0.66	0.00	0.09	0.04	123.53	0.00	0.00	123.83
Off-site Emissions Subtotal		**8,305.78**	**9.87**	**8,315.65**	**847.78**	**9.41**	**857.19**	**471.67**	**2.06**	**725.10**	**49.71**	**208,793.99**	**9.19**	**4.12**	**210,252.05**
Total Emissions In This Month (pounds)		**10,275.73**	**87.27**	**10,363.00**	**1,082.29**	**80.62**	**1,162.91**	**2,022.27**	**4.80**	**1,542.24**	**183.77**	**447,824.27**	**28.40**	**12.73**	**452,327.85**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 4															
On-site															
Off-road Equipment															
5 CY Dump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Air Compressor	60	10.63	1.05	11.68	1.06	0.96	2.03	11.63	0.02	13.67	2.26	1,345.76	0.36	0.16	1,402.67
ATV	672	98.46	11.63	110.09	9.85	10.70	20.55	129.25	0.11	36.54	25.12	8,874.05	0.97	0.43	9,027.23
Auger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Backhoe/Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable Plow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Compactor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crane	30	14.39	1.62	16.01	1.44	1.49	2.93	38.70	0.05	13.47	2.52	5,479.16	0.36	0.16	5,536.85
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (10 K) (Aerial Lift)	130	33.52	2.44	35.96	3.35	2.24	5.60	43.55	0.10	55.05	2.86	8,123.67	0.86	0.38	8,259.60
Forklift (5 K)	84	16.81	1.57	18.39	1.68	1.45	3.13	28.10	0.06	35.51	1.85	5,241.08	0.55	0.25	5,328.77
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini-Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	353	62.04	5.87	67.91	6.20	5.40	11.61	81.33	0.14	78.38	11.03	10,939.96	0.70	0.31	11,051.03
Roller/Vibrator/Padder	48	204.51	1.18	205.69	22.08	1.09	23.17	25.15	0.06	29.43	1.67	5,173.38	0.45	0.20	5,244.23
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Skid Steer	655	13.35	7.49	20.84	2.02	6.89	8.91	133.43	0.33	176.42	8.56	27,992.39	1.74	0.78	28,268.67
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	798	298.04	34.71	332.75	29.80	31.93	61.74	773.69	1.49	291.07	59.07	132,783.89	8.49	3.80	134,129.77
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	64	23.84	2.78	26.62	2.38	2.55	4.94	61.90	0.12	23.29	4.73	10,622.71	0.68	0.30	10,730.38
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	319	119.22	13.88	133.10	11.92	12.77	24.70	309.48	0.60	116.43	23.63	53,113.56	3.39	1.52	53,651.91
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	4	1.65	0.00	1.65	0.17	0.00	0.17	0.10	0.00	0.02	0.01	16.69	0.00	0.00	16.74
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	356	116.93	0.12	117.04	11.73	0.11	11.84	5.37	0.01	0.72	0.33	1,008.63	0.02	0.01	1,011.08
Worker Vehicles	1,008	177.35	0.01	177.36	17.76	0.01	17.77	0.54	0.01	5.74	0.21	1,134.01	0.07	0.03	1,144.91
Fuel Trucks	3	0.85	0.00	0.85	0.09	0.00	0.09	0.04	0.00	0.01	0.00	7.37	0.00	0.00	7.38
On-site Emissions Subtotal		**2,716.04**	**145.77**	**2,861.81**	**309.68**	**134.11**	**443.79**	**2,771.20**	**5.00**	**1,545.81**	**254.80**	**435,179.50**	**34.29**	**15.37**	**440,617.07**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	226	93.21	0.10	93.31	9.33	0.10	9.43	5.47	0.01	1.01	0.38	941.18	0.02	0.01	944.01
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	20,078	6,594.71	6.58	6,601.29	661.44	6.30	667.74	303.06	0.54	40.48	18.75	56,886.80	0.87	0.39	57,024.94
Worker Vehicles	56,851	10,002.48	0.51	10,002.98	1,001.91	0.47	1,002.38	30.41	0.64	323.77	11.74	63,958.43	3.87	1.74	64,572.81
Fuel Trucks	147	48.16	0.05	48.21	4.83	0.05	4.88	2.21	0.00	0.30	0.14	415.47	0.01	0.00	416.47
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	994	3.76	0.44	4.20	0.95	0.42	1.37	24.13	0.04	4.46	1.69	4,148.54	0.08	0.04	4,160.99
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	15,522	37.76	5.09	42.85	10.09	4.87	14.95	234.28	0.42	31.30	14.50	43,976.32	0.67	0.30	44,083.11
Worker Vehicles	295,949	181.69	2.63	184.32	49.01	2.43	51.44	158.33	3.35	1,685.43	61.14	332,946.73	20.17	9.04	336,144.97
Fuel Trucks	113	0.28	0.04	0.31	0.07	0.04	0.11	1.71	0.00	0.23	0.11	321.18	0.00	0.00	321.96
Off-site Emissions Subtotal		**16,962.05**	**15.43**	**16,977.48**	**1,737.64**	**14.66**	**1,752.30**	**759.61**	**5.01**	**2,086.98**	**108.45**	**503,594.65**	**25.69**	**11.52**	**507,669.24**
Total Emissions In This Month (pounds)		**19,678.09**	**161.20**	**19,839.29**	**2,047.31**	**148.77**	**2,196.09**	**3,530.81**	**10.01**	**3,632.79**	**363.25**	**938,774.15**	**59.98**	**26.89**	**948,286.31**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 5															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	60	10.63	1.05	11.68	1.06	0.96	2.03	11.63	0.02	13.67	2.26	1,345.76	0.36	0.16	1,402.67
ATV	672	98.46	11.63	110.09	9.85	10.70	20.55	129.25	0.11	36.54	25.12	8,874.05	0.97	0.43	9,027.23
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	61	28.78	3.23	32.02	2.88	2.97	5.85	77.40	0.11	26.95	5.04	10,958.31	0.73	0.33	11,073.70
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	130	33.52	2.44	35.96	3.35	2.24	5.60	43.55	0.10	55.05	2.86	8,123.67	0.86	0.38	8,259.60
Forklift (5 K)	84	16.81	1.57	18.39	1.68	1.45	3.13	28.10	0.06	35.51	1.85	5,241.08	0.55	0.25	5,328.77
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	353	62.04	5.87	67.91	6.20	5.40	11.61	81.33	0.14	78.38	11.03	10,939.96	0.70	0.31	11,051.03
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	655	13.35	7.49	20.84	2.02	6.89	8.91	133.43	0.33	176.42	8.56	27,992.39	1.74	0.78	28,268.67
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	926	345.73	40.27	385.99	34.57	37.04	71.62	897.48	1.73	337.64	68.53	154,029.31	9.84	4.41	155,590.53
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	128	47.69	5.55	53.24	4.77	5.11	9.88	123.79	0.24	46.57	9.45	21,245.42	1.36	0.61	21,460.76
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	511	190.75	22.22	212.96	19.07	20.44	39.51	495.16	0.96	186.28	37.81	84,981.69	5.43	2.43	85,843.05
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	452	148.46	0.15	148.61	14.89	0.14	15.03	6.82	0.01	0.91	0.42	1,280.62	0.02	0.01	1,283.73
Worker Vehicles	1,344	236.47	0.01	236.48	23.69	0.01	23.70	0.72	0.02	7.65	0.28	1,512.02	0.09	0.04	1,526.54
Fuel Trucks	3	1.12	0.00	1.12	0.11	0.00	0.11	0.05	0.00	0.01	0.00	9.63	0.00	0.00	9.66
On-site Emissions Subtotal		**4,266.74**	**196.85**	**4,463.59**	**521.66**	**181.10**	**702.76**	**3,668.41**	**6.77**	**2,244.92**	**340.63**	**589,832.71**	**50.25**	**22.52**	**597,801.15**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	25,493	8,373.05	8.36	8,381.41	839.81	7.99	847.81	384.79	0.69	51.40	23.81	72,227.07	1.11	0.50	72,402.45
Worker Vehicles	75,802	13,336.64	0.67	13,337.31	1,335.88	0.62	1,336.50	40.55	0.86	431.69	15.66	85,277.91	5.17	2.32	86,097.08
Fuel Trucks	192	62.98	0.06	63.05	6.32	0.06	6.38	2.89	0.01	0.39	0.18	543.30	0.01	0.00	544.62
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	19,707	47.95	6.46	54.41	12.81	6.18	18.99	297.46	0.53	39.73	18.41	55,835.11	0.85	0.38	55,970.69
Worker Vehicles	394,598	242.26	3.51	245.77	65.34	3.24	68.58	211.10	4.47	2,247.24	81.52	443,928.98	26.89	12.05	448,193.29
Fuel Trucks	148	0.36	0.05	0.41	0.10	0.05	0.14	2.24	0.00	0.30	0.14	420.00	0.01	0.00	421.02
Off-site Emissions Subtotal		**22,645.06**	**22.36**	**22,667.42**	**2,321.95**	**21.26**	**2,343.20**	**1,116.63**	**6.85**	**2,803.61**	**152.15**	**688,770.68**	**34.61**	**15.51**	**694,259.09**
Total Emissions In This Month (pounds)		**26,911.80**	**219.21**	**27,131.01**	**2,843.61**	**202.36**	**3,045.97**	**4,785.05**	**13.62**	**5,048.54**	**492.78**	**1,278,603.39**	**84.86**	**38.04**	**1,292,060.24**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 6															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	1,404	524.55	61.09	585.65	52.46	56.21	108.66	1,361.70	2.63	512.28	103.97	233,699.65	14.94	6.70	236,068.39
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	548	179.99	0.18	180.17	18.05	0.17	18.22	8.27	0.01	1.10	0.51	1,552.61	0.02	0.01	1,556.38
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**5,081.18**	**258.80**	**5,339.99**	**603.68**	**238.11**	**841.79**	**4,819.50**	**8.90**	**2,889.02**	**447.69**	**775,604.63**	**63.29**	**28.37**	**785,642.04**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	30,907	10,151.40	10.13	10,161.53	1,018.18	9.69	1,027.87	466.52	0.84	62.32	28.87	87,567.33	1.34	0.60	87,779.96
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	23,893	58.13	7.83	65.96	15.53	7.49	23.02	360.64	0.65	48.17	22.32	67,693.89	1.04	0.46	67,858.26
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**39,553.63**	**40.45**	**39,594.08**	**4,068.76**	**38.43**	**4,107.18**	**2,099.41**	**13.24**	**5,528.00**	**296.85**	**1,330,829.94**	**68.01**	**30.49**	**1,341,615.45**
Total Emissions In This Month (pounds)		**44,634.81**	**299.25**	**44,934.06**	**4,672.44**	**276.53**	**4,948.97**	**6,918.91**	**22.14**	**8,417.01**	**744.54**	**2,106,434.57**	**131.30**	**58.86**	**2,127,257.49**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 7															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	1,404	524.55	61.09	585.65	52.46	56.21	108.66	1,361.70	2.63	512.28	103.97	233,699.65	14.94	6.70	236,068.39
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	548	179.99	0.18	180.17	18.05	0.17	18.22	8.27	0.01	1.10	0.51	1,552.61	0.02	0.01	1,556.38
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**5,081.18**	**258.80**	**5,339.99**	**603.68**	**238.11**	**841.79**	**4,819.50**	**8.90**	**2,889.02**	**447.69**	**775,604.63**	**63.29**	**28.37**	**785,642.04**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	30,907	10,151.40	10.13	10,161.53	1,018.18	9.69	1,027.87	466.52	0.84	62.32	28.87	87,567.33	1.34	0.60	87,779.96
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	23,893	58.13	7.83	65.96	15.53	7.49	23.02	360.64	0.65	48.17	22.32	67,693.89	1.04	0.46	67,858.26
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**39,553.63**	**40.45**	**39,594.08**	**4,068.76**	**38.43**	**4,107.18**	**2,099.41**	**13.24**	**5,528.00**	**296.85**	**1,330,829.94**	**68.01**	**30.49**	**1,341,615.45**
Total Emissions In This Month (pounds)		**44,634.81**	**299.25**	**44,934.06**	**4,672.44**	**276.53**	**4,948.97**	**6,918.91**	**22.14**	**8,417.01**	**744.54**	**2,106,434.57**	**131.30**	**58.86**	**2,127,257.49**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 8															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	1,404	524.55	61.09	585.65	52.46	56.21	108.66	1,361.70	2.63	512.28	103.97	233,699.65	14.94	6.70	236,068.39
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	548	179.99	0.18	180.17	18.05	0.17	18.22	8.27	0.01	1.10	0.51	1,552.61	0.02	0.01	1,556.38
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**5,081.18**	**258.80**	**5,339.99**	**603.68**	**238.11**	**841.79**	**4,819.50**	**8.90**	**2,889.02**	**447.69**	**775,604.63**	**63.29**	**28.37**	**785,642.04**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	30,907	10,151.40	10.13	10,161.53	1,018.18	9.69	1,027.87	466.52	0.84	62.32	28.87	87,567.33	1.34	0.60	87,779.96
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	23,893	58.13	7.83	65.96	15.53	7.49	23.02	360.64	0.65	48.17	22.32	67,693.89	1.04	0.46	67,858.26
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**39,553.63**	**40.45**	**39,594.08**	**4,068.76**	**38.43**	**4,107.18**	**2,099.41**	**13.24**	**5,528.00**	**296.85**	**1,330,829.94**	**68.01**	**30.49**	**1,341,615.45**
Total Emissions In This Month (pounds)		**44,634.81**	**299.25**	**44,934.06**	**4,672.44**	**276.53**	**4,948.97**	**6,918.91**	**22.14**	**8,417.01**	**744.54**	**2,106,434.57**	**131.30**	**58.86**	**2,127,257.49**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 9															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	1,404	524.55	61.09	585.65	52.46	56.21	108.66	1,361.70	2.63	512.28	103.97	233,699.65	14.94	6.70	236,068.39
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	548	179.99	0.18	180.17	18.05	0.17	18.22	8.27	0.01	1.10	0.51	1,552.61	0.02	0.01	1,556.38
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**5,081.18**	**258.80**	**5,339.99**	**603.68**	**238.11**	**841.79**	**4,819.50**	**8.90**	**2,889.02**	**447.69**	**775,604.63**	**63.29**	**28.37**	**785,642.04**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	30,907	10,151.40	10.13	10,161.53	1,018.18	9.69	1,027.87	466.52	0.84	62.32	28.87	87,567.33	1.34	0.60	87,779.96
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	23,893	58.13	7.83	65.96	15.53	7.49	23.02	360.64	0.65	48.17	22.32	67,693.89	1.04	0.46	67,858.26
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**39,553.63**	**40.45**	**39,594.08**	**4,068.76**	**38.43**	**4,107.18**	**2,099.41**	**13.24**	**5,528.00**	**296.85**	**1,330,829.94**	**68.01**	**30.49**	**1,341,615.45**
Total Emissions In This Month (pounds)		**44,634.81**	**299.25**	**44,934.06**	**4,672.44**	**276.53**	**4,948.97**	**6,918.91**	**22.14**	**8,417.01**	**744.54**	**2,106,434.57**	**131.30**	**58.86**	**2,127,257.49**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 10															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	1,404	524.55	61.09	585.65	52.46	56.21	108.66	1,361.70	2.63	512.28	103.97	233,699.65	14.94	6.70	236,068.39
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	548	179.99	0.18	180.17	18.05	0.17	18.22	8.27	0.01	1.10	0.51	1,552.61	0.02	0.01	1,556.38
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**5,081.18**	**258.80**	**5,339.99**	**603.68**	**238.11**	**841.79**	**4,819.50**	**8.90**	**2,889.02**	**447.69**	**775,604.63**	**63.29**	**28.37**	**785,642.04**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	30,907	10,151.40	10.13	10,161.53	1,018.18	9.69	1,027.87	466.52	0.84	62.32	28.87	87,567.33	1.34	0.60	87,779.96
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	23,893	58.13	7.83	65.96	15.53	7.49	23.02	360.64	0.65	48.17	22.32	67,693.89	1.04	0.46	67,858.26
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**39,553.63**	**40.45**	**39,594.08**	**4,068.76**	**38.43**	**4,107.18**	**2,099.41**	**13.24**	**5,528.00**	**296.85**	**1,330,829.94**	**68.01**	**30.49**	**1,341,615.45**
Total Emissions In This Month (pounds)		**44,634.81**	**299.25**	**44,934.06**	**4,672.44**	**276.53**	**4,948.97**	**6,918.91**	**22.14**	**8,417.01**	**744.54**	**2,106,434.57**	**131.30**	**58.86**	**2,127,257.49**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 11															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	1,404	524.55	61.09	585.65	52.46	56.21	108.66	1,361.70	2.63	512.28	103.97	233,699.65	14.94	6.70	236,068.39
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	548	179.99	0.18	180.17	18.05	0.17	18.22	8.27	0.01	1.10	0.51	1,552.61	0.02	0.01	1,556.38
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**5,081.18**	**258.80**	**5,339.99**	**603.68**	**238.11**	**841.79**	**4,819.50**	**8.90**	**2,889.02**	**447.69**	**775,604.63**	**63.29**	**28.37**	**785,642.04**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	30,907	10,151.40	10.13	10,161.53	1,018.18	9.69	1,027.87	466.52	0.84	62.32	28.87	87,567.33	1.34	0.60	87,779.96
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	23,893	58.13	7.83	65.96	15.53	7.49	23.02	360.64	0.65	48.17	22.32	67,693.89	1.04	0.46	67,858.26
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**39,553.63**	**40.45**	**39,594.08**	**4,068.76**	**38.43**	**4,107.18**	**2,099.41**	**13.24**	**5,528.00**	**296.85**	**1,330,829.94**	**68.01**	**30.49**	**1,341,615.45**
Total Emissions In This Month (pounds)		**44,634.81**	**299.25**	**44,934.06**	**4,672.44**	**276.53**	**4,948.97**	**6,918.91**	**22.14**	**8,417.01**	**744.54**	**2,106,434.57**	**131.30**	**58.86**	**2,127,257.49**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 12															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	1,404	524.55	61.09	585.65	52.46	56.21	108.66	1,361.70	2.63	512.28	103.97	233,699.65	14.94	6.70	236,068.39
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	548	179.99	0.18	180.17	18.05	0.17	18.22	8.27	0.01	1.10	0.51	1,552.61	0.02	0.01	1,556.38
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**5,081.18**	**258.80**	**5,339.99**	**603.68**	**238.11**	**841.79**	**4,819.50**	**8.90**	**2,889.02**	**447.69**	**775,604.63**	**63.29**	**28.37**	**785,642.04**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	30,907	10,151.40	10.13	10,161.53	1,018.18	9.69	1,027.87	466.52	0.84	62.32	28.87	87,567.33	1.34	0.60	87,779.96
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	23,893	58.13	7.83	65.96	15.53	7.49	23.02	360.64	0.65	48.17	22.32	67,693.89	1.04	0.46	67,858.26
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**39,553.63**	**40.45**	**39,594.08**	**4,068.76**	**38.43**	**4,107.18**	**2,099.41**	**13.24**	**5,528.00**	**296.85**	**1,330,829.94**	**68.01**	**30.49**	**1,341,615.45**
Total Emissions In This Month (pounds)		**44,634.81**	**299.25**	**44,934.06**	**4,672.44**	**276.53**	**4,948.97**	**6,918.91**	**22.14**	**8,417.01**	**744.54**	**2,106,434.57**	**131.30**	**58.86**	**2,127,257.49**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 13															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	1,404	524.55	61.09	585.65	52.46	56.21	108.66	1,361.70	2.63	512.28	103.97	233,699.65	14.94	6.70	236,068.39
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	548	179.99	0.18	180.17	18.05	0.17	18.22	8.27	0.01	1.10	0.51	1,552.61	0.02	0.01	1,556.38
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**5,081.18**	**258.80**	**5,339.99**	**603.68**	**238.11**	**841.79**	**4,819.50**	**8.90**	**2,889.02**	**447.69**	**775,604.63**	**63.29**	**28.37**	**785,642.04**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	30,907	10,151.40	10.13	10,161.53	1,018.18	9.69	1,027.87	466.52	0.84	62.32	28.87	87,567.33	1.34	0.60	87,779.96
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	23,893	58.13	7.83	65.96	15.53	7.49	23.02	360.64	0.65	48.17	22.32	67,693.89	1.04	0.46	67,858.26
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**39,553.63**	**40.45**	**39,594.08**	**4,068.76**	**38.43**	**4,107.18**	**2,099.41**	**13.24**	**5,528.00**	**296.85**	**1,330,829.94**	**68.01**	**30.49**	**1,341,615.45**
Total Emissions In This Month (pounds)		**44,634.81**	**299.25**	**44,934.06**	**4,672.44**	**276.53**	**4,948.97**	**6,918.91**	**22.14**	**8,417.01**	**744.54**	**2,106,434.57**	**131.30**	**58.86**	**2,127,257.49**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 14															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	1,404	524.55	61.09	585.65	52.46	56.21	108.66	1,361.70	2.63	512.28	103.97	233,699.65	14.94	6.70	236,068.39
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	548	179.99	0.18	180.17	18.05	0.17	18.22	8.27	0.01	1.10	0.51	1,552.61	0.02	0.01	1,556.38
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**5,081.18**	**258.80**	**5,339.99**	**603.68**	**238.11**	**841.79**	**4,819.50**	**8.90**	**2,889.02**	**447.69**	**775,604.63**	**63.29**	**28.37**	**785,642.04**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	30,907	10,151.40	10.13	10,161.53	1,018.18	9.69	1,027.87	466.52	0.84	62.32	28.87	87,567.33	1.34	0.60	87,779.96
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	23,893	58.13	7.83	65.96	15.53	7.49	23.02	360.64	0.65	48.17	22.32	67,693.89	1.04	0.46	67,858.26
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**39,553.63**	**40.45**	**39,594.08**	**4,068.76**	**38.43**	**4,107.18**	**2,099.41**	**13.24**	**5,528.00**	**296.85**	**1,330,829.94**	**68.01**	**30.49**	**1,341,615.45**
Total Emissions In This Month (pounds)		**44,634.81**	**299.25**	**44,934.06**	**4,672.44**	**276.53**	**4,948.97**	**6,918.91**	**22.14**	**8,417.01**	**744.54**	**2,106,434.57**	**131.30**	**58.86**	**2,127,257.49**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 15															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	1,404	524.55	61.09	585.65	52.46	56.21	108.66	1,361.70	2.63	512.28	103.97	233,699.65	14.94	6.70	236,068.39
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	548	179.99	0.18	180.17	18.05	0.17	18.22	8.27	0.01	1.10	0.51	1,552.61	0.02	0.01	1,556.38
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**5,081.18**	**258.80**	**5,339.99**	**603.68**	**238.11**	**841.79**	**4,819.50**	**8.90**	**2,889.02**	**447.69**	**775,604.63**	**63.29**	**28.37**	**785,642.04**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	30,907	10,151.40	10.13	10,161.53	1,018.18	9.69	1,027.87	466.52	0.84	62.32	28.87	87,567.33	1.34	0.60	87,779.96
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	23,893	58.13	7.83	65.96	15.53	7.49	23.02	360.64	0.65	48.17	22.32	67,693.89	1.04	0.46	67,858.26
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**39,553.63**	**40.45**	**39,594.08**	**4,068.76**	**38.43**	**4,107.18**	**2,099.41**	**13.24**	**5,528.00**	**296.85**	**1,330,829.94**	**68.01**	**30.49**	**1,341,615.45**
Total Emissions In This Month (pounds)		**44,634.81**	**299.25**	**44,934.06**	**4,672.44**	**276.53**	**4,948.97**	**6,918.91**	**22.14**	**8,417.01**	**744.54**	**2,106,434.57**	**131.30**	**58.86**	**2,127,257.49**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 16															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	155	3.17	3.79	6.95	0.48	3.48	3.96	51.37	0.13	78.73	4.33	11,430.76	1.17	0.52	11,616.15
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	34	10.16	0.63	10.79	1.02	0.58	1.59	11.24	0.02	14.21	0.74	2,096.43	0.22	0.10	2,131.51
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	155	661.97	5.35	667.32	71.48	4.93	76.40	163.63	0.30	60.94	9.54	26,650.16	1.75	0.78	26,927.36
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck (Onroad)	1,404	524.55	61.09	585.65	52.46	56.21	108.66	1,361.70	2.63	512.28	103.97	233,699.65	14.94	6.70	236,068.39
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	24	9.92	0.01	9.93	0.99	0.01	1.00	0.58	0.00	0.11	0.04	100.13	0.00	0.00	100.43
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	548	179.99	0.18	180.17	18.05	0.17	18.22	8.27	0.01	1.10	0.51	1,552.61	0.02	0.01	1,556.38
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**5,081.18**	**258.80**	**5,339.99**	**603.68**	**238.11**	**841.79**	**4,819.50**	**8.90**	**2,889.02**	**447.69**	**775,604.63**	**63.29**	**28.37**	**785,642.04**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,354	559.24	0.60	559.84	56.00	0.58	56.58	32.84	0.05	6.08	2.30	5,647.09	0.11	0.05	5,664.03
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	30,907	10,151.40	10.13	10,161.53	1,018.18	9.69	1,027.87	466.52	0.84	62.32	28.87	87,567.33	1.34	0.60	87,779.96
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	5,966	22.58	2.65	25.23	5.69	2.54	8.23	144.75	0.24	26.78	10.14	24,891.23	0.47	0.21	24,965.93
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	23,893	58.13	7.83	65.96	15.53	7.49	23.02	360.64	0.65	48.17	22.32	67,693.89	1.04	0.46	67,858.26
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**39,553.63**	**40.45**	**39,594.08**	**4,068.76**	**38.43**	**4,107.18**	**2,099.41**	**13.24**	**5,528.00**	**296.85**	**1,330,829.94**	**68.01**	**30.49**	**1,341,615.45**
Total Emissions In This Month (pounds)		**44,634.81**	**299.25**	**44,934.06**	**4,672.44**	**276.53**	**4,948.97**	**6,918.91**	**22.14**	**8,417.01**	**744.54**	**2,106,434.57**	**131.30**	**58.86**	**2,127,257.49**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 17															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	218	4.43	5.30	9.73	0.67	4.88	5.55	71.92	0.19	110.23	6.06	16,003.06	1.64	0.73	16,262.61
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	122	57.57	6.47	64.03	5.76	5.95	11.71	154.80	0.22	53.89	10.08	21,916.63	1.46	0.65	22,147.39
Crawler Tractor	24	7.36	1.31	8.67	0.74	1.21	1.94	23.66	0.03	17.92	1.82	2,949.48	0.31	0.14	2,999.28
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	50	15.24	0.94	16.18	1.52	0.87	2.39	16.86	0.04	21.31	1.11	3,144.65	0.33	0.15	3,197.26
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	62	10.93	1.08	12.01	1.09	0.99	2.08	11.96	0.02	14.75	2.32	1,901.82	0.35	0.16	1,956.96
Generator (45 kW)	1,119	223.94	19.37	243.31	22.39	17.82	40.21	215.20	0.44	265.52	41.82	34,232.67	6.26	2.81	35,225.30
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	207	882.62	7.14	889.76	95.30	6.57	101.87	218.17	0.40	81.25	12.72	35,533.54	2.33	1.04	35,903.14
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	202	59.19	19.67	78.86	32.53	18.10	50.63	427.36	0.47	114.52	30.09	42,191.28	3.47	1.56	42,742.19
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	35	13.18	1.49	14.67	1.32	1.37	2.69	39.46	0.04	20.66	2.37	3,754.50	0.23	0.10	3,791.33
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	48	16.29	2.08	18.37	1.63	1.92	3.54	46.42	0.09	17.46	3.54	7,967.03	0.51	0.23	8,047.79
Truck (Onroad)	1,628	608.00	70.81	678.82	60.80	65.15	125.95	1,578.33	3.05	593.78	120.51	270,879.14	17.31	7.76	273,624.72
Truck Mounted Digger	35	12.00	0.78	12.78	1.20	0.72	1.92	25.68	0.07	12.07	1.42	6,630.28	0.20	0.09	6,661.95
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	894	333.81	38.88	372.68	33.38	35.77	69.15	866.54	1.67	326.00	66.16	148,717.96	9.51	4.26	150,225.34
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	32	11.92	1.39	13.31	1.19	1.28	2.47	30.95	0.06	11.64	2.36	5,311.36	0.34	0.15	5,365.19
On-road Vehicles															
Aggregate Base Delivery Trucks	7	2.73	0.00	2.73	0.27	0.00	0.28	0.16	0.00	0.03	0.01	27.53	0.00	0.00	27.62
Concrete Delivery Trucks	25	10.33	0.01	10.34	1.03	0.01	1.04	0.61	0.00	0.11	0.04	104.30	0.00	0.00	104.61
Material Delivery Trucks	98	40.49	0.04	40.53	4.05	0.04	4.10	2.38	0.00	0.44	0.17	408.85	0.01	0.00	410.07
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	740	243.05	0.24	243.29	24.38	0.23	24.61	11.17	0.02	1.49	0.69	2,096.59	0.03	0.01	2,101.68
Worker Vehicles	3,402	598.55	0.03	598.58	59.95	0.03	59.98	1.82	0.04	19.37	0.70	3,827.30	0.23	0.10	3,864.06
Fuel Trucks	5	1.77	0.00	1.78	0.18	0.00	0.18	0.08	0.00	0.01	0.01	15.30	0.00	0.00	15.34
On-site Emissions Subtotal		**5,878.58**	**301.70**	**6,180.28**	**691.95**	**277.58**	**969.53**	**5,703.81**	**10.51**	**3,329.57**	**522.03**	**916,945.24**	**74.20**	**33.26**	**928,711.74**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	372	153.79	0.17	153.96	15.40	0.16	15.56	9.03	0.01	1.67	0.63	1,552.95	0.03	0.01	1,557.61
Concrete Delivery Trucks	1,410	582.54	0.63	583.17	58.33	0.60	58.93	34.21	0.06	6.33	2.40	5,882.38	0.11	0.05	5,900.03
Material Delivery Trucks	5,527	2,283.57	2.46	2,286.03	228.67	2.35	231.02	134.10	0.22	24.81	9.39	23,058.93	0.44	0.20	23,128.13
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	41,736	13,708.10	13.68	13,721.78	1,374.91	13.09	1,388.00	629.97	1.13	84.15	38.98	118,247.85	1.81	0.81	118,534.98
Worker Vehicles	191,873	33,758.36	1.71	33,760.07	3,381.45	1.57	3,383.02	102.65	2.17	1,092.72	39.64	215,859.71	13.08	5.86	217,933.22
Fuel Trucks	305	100.03	0.10	100.13	10.03	0.10	10.13	4.60	0.01	0.61	0.28	862.89	0.01	0.01	864.98
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	486	1.94	0.22	2.05	0.46	0.21	0.67	11.78	0.02	2.18	0.83	2,026.54	0.04	0.02	2,032.62
Concrete Delivery Trucks	1,840	6.96	0.82	7.78	1.76	0.78	2.54	44.64	0.07	8.26	3.13	7,676.30	0.15	0.07	7,699.33
Material Delivery Trucks	24,363	92.19	10.83	103.02	23.24	10.36	33.61	591.06	0.97	109.36	41.41	101,639.20	1.92	0.86	101,944.20
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	32,264	78.50	10.58	89.07	20.97	10.12	31.09	486.99	0.87	65.05	30.13	91,411.46	1.40	0.63	91,633.42
Worker Vehicles	998,827	613.22	8.88	622.09	165.40	8.20	173.60	534.36	11.31	5,688.34	206.34	1,123,695.22	68.06	30.51	1,134,489.27
Fuel Trucks	235	0.57	0.08	0.65	0.15	0.07	0.23	3.55	0.01	0.47	0.22	667.06	0.01	0.00	668.68
Off-site Emissions Subtotal		**53,319.08**	**60.98**	**53,380.05**	**5,486.43**	**57.98**	**5,544.41**	**3,178.91**	**17.82**	**7,193.48**	**414.85**	**1,794,374.88**	**88.98**	**39.89**	**1,808,486.33**
Total Emissions In This Month (pounds)		**59,197.66**	**362.68**	**59,560.33**	**6,178.37**	**335.56**	**6,513.94**	**8,882.71**	**28.33**	**10,523.05**	**936.88**	**2,711,320.12**	**163.18**	**73.15**	**2,737,198.07**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 18															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	218	4.43	5.30	9.73	0.67	4.88	5.55	71.92	0.19	110.23	6.06	16,003.06	1.64	0.73	16,262.61
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	122	57.57	6.47	64.03	5.76	5.95	11.71	154.80	0.22	53.89	10.08	21,916.63	1.46	0.65	22,147.39
Crawler Tractor	24	7.36	1.31	8.67	0.74	1.21	1.94	23.66	0.03	17.92	1.82	2,949.48	0.31	0.14	2,999.28
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	50	15.24	0.94	16.18	1.52	0.87	2.39	16.86	0.04	21.31	1.11	3,144.65	0.33	0.15	3,197.26
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	62	10.93	1.08	12.01	1.09	0.99	2.08	11.96	0.02	14.75	2.32	1,901.82	0.35	0.16	1,956.96
Generator (45 kW)	1,119	223.94	19.37	243.31	22.39	17.82	40.21	215.20	0.44	265.52	41.82	34,232.67	6.26	2.81	35,225.30
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	207	882.62	7.14	889.76	95.30	6.57	101.87	218.17	0.40	81.25	12.72	35,533.54	2.33	1.04	35,903.14
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	202	59.19	19.67	78.86	32.53	18.10	50.63	427.36	0.47	114.52	30.09	42,191.28	3.47	1.56	42,742.19
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	35	13.18	1.49	14.67	1.32	1.37	2.69	39.46	0.04	20.66	2.37	3,754.50	0.23	0.10	3,791.33
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	48	16.29	2.08	18.37	1.63	1.92	3.54	46.42	0.09	17.46	3.54	7,967.03	0.51	0.23	8,047.79
Truck (Onroad)	1,628	608.00	70.81	678.82	60.80	65.15	125.95	1,578.33	3.05	593.78	120.51	270,879.14	17.31	7.76	273,624.72
Truck Mounted Digger	35	12.00	0.78	12.78	1.20	0.72	1.92	25.68	0.07	12.07	1.42	6,630.28	0.20	0.09	6,661.95
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	894	333.81	38.88	372.68	33.38	35.77	69.15	866.54	1.67	326.00	66.16	148,717.96	9.51	4.26	150,225.34
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	32	11.92	1.39	13.31	1.19	1.28	2.47	30.95	0.06	11.64	2.36	5,311.36	0.34	0.15	5,365.19
On-road Vehicles															
Aggregate Base Delivery Trucks	7	2.77	0.00	2.77	0.28	0.00	0.28	0.16	0.00	0.03	0.01	27.95	0.00	0.00	28.04
Concrete Delivery Trucks	25	10.37	0.01	10.38	1.04	0.01	1.05	0.61	0.00	0.11	0.04	104.71	0.00	0.00	105.03
Material Delivery Trucks	98	40.49	0.04	40.53	4.05	0.04	4.10	2.38	0.00	0.44	0.17	408.85	0.01	0.00	410.07
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	740	243.05	0.24	243.29	24.38	0.23	24.61	11.17	0.02	1.49	0.69	2,096.59	0.03	0.01	2,101.68
Worker Vehicles	3,402	598.55	0.03	598.58	59.95	0.03	59.98	1.82	0.04	19.37	0.70	3,827.30	0.23	0.10	3,864.06
Fuel Trucks	5	1.77	0.00	1.78	0.18	0.00	0.18	0.08	0.00	0.01	0.01	15.30	0.00	0.00	15.34
On-site Emissions Subtotal		**5,878.66**	**301.70**	**6,180.36**	**691.96**	**277.58**	**969.53**	**5,703.81**	**10.51**	**3,329.57**	**522.03**	**916,946.08**	**74.20**	**33.26**	**928,712.58**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	378	156.12	0.17	156.29	15.63	0.16	15.79	9.17	0.02	1.70	0.64	1,576.48	0.03	0.01	1,581.21
Concrete Delivery Trucks	1,416	584.87	0.63	585.50	58.57	0.60	59.17	34.34	0.06	6.35	2.41	5,905.91	0.11	0.05	5,923.63
Material Delivery Trucks	5,527	2,283.57	2.46	2,286.03	228.67	2.35	231.02	134.10	0.22	24.81	9.39	23,058.93	0.44	0.20	23,128.13
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	41,736	13,708.10	13.68	13,721.78	1,374.91	13.09	1,388.00	629.97	1.13	84.15	38.98	118,247.85	1.81	0.81	118,534.98
Worker Vehicles	191,873	33,758.36	1.71	33,760.07	3,381.45	1.57	3,383.02	102.65	2.17	1,092.72	39.64	215,859.71	13.08	5.86	217,933.22
Fuel Trucks	305	100.03	0.10	100.13	10.03	0.10	10.13	4.60	0.01	0.61	0.28	862.89	0.01	0.01	864.98
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	493	1.87	0.22	2.09	0.47	0.21	0.68	11.96	0.02	2.21	0.84	2,057.25	0.04	0.02	2,063.42
Concrete Delivery Trucks	1,847	6.99	0.82	7.81	1.76	0.79	2.55	44.82	0.07	8.29	3.14	7,707.00	0.15	0.07	7,730.13
Material Delivery Trucks	24,363	92.19	10.83	103.02	23.24	10.36	33.61	591.06	0.97	109.36	41.41	101,639.20	1.92	0.86	101,944.20
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	32,264	78.50	10.58	89.07	20.97	10.12	31.09	486.99	0.87	65.05	30.13	91,411.46	1.40	0.63	91,633.42
Worker Vehicles	998,827	613.22	8.88	622.09	165.40	8.20	173.60	534.36	11.31	5,688.34	206.34	1,123,695.22	68.06	30.51	1,134,489.27
Fuel Trucks	235	0.57	0.08	0.65	0.15	0.07	0.23	3.55	0.01	0.47	0.22	667.06	0.01	0.00	668.68
Off-site Emissions Subtotal		**53,323.79**	**60.99**	**53,384.78**	**5,486.91**	**58.00**	**5,544.90**	**3,179.54**	**17.82**	**7,193.60**	**414.89**	**1,794,483.35**	**88.98**	**39.89**	**1,808,595.13**
Total Emissions In This Month (pounds)		**59,202.46**	**362.69**	**59,565.14**	**6,178.86**	**335.57**	**6,514.44**	**8,883.35**	**28.33**	**10,523.17**	**936.92**	**2,711,429.43**	**163.18**	**73.15**	**2,737,307.71**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 19															
On-															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	218	4.43	5.30	9.73	0.67	4.88	5.55	71.92	0.19	110.23	6.06	16,003.06	1.64	0.73	16,262.61
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	122	57.57	6.47	64.03	5.76	5.95	11.71	154.80	0.22	53.89	10.08	21,916.63	1.46	0.65	22,147.39
Crawler Tractor	24	7.36	1.31	8.67	0.74	1.21	1.94	23.66	0.03	17.92	1.82	2,949.48	0.31	0.14	2,999.28
Dozer (D6)	50	14.80	3.72	18.52	8.13	3.42	11.56	64.78	0.07	41.69	5.26	6,519.77	0.84	0.38	6,653.37
Forklift	50	15.24	0.94	16.18	1.52	0.87	2.39	16.86	0.04	21.31	1.11	3,144.65	0.33	0.15	3,197.26
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	62	10.93	1.08	12.01	1.09	0.99	2.08	11.96	0.02	14.75	2.32	1,901.82	0.35	0.16	1,956.96
Generator (45 kW)	1,119	223.94	19.37	243.31	22.39	17.82	40.21	215.20	0.44	265.52	41.82	34,232.67	6.26	2.81	35,225.30
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	91	3.70	2.43	6.13	0.56	2.24	2.80	47.73	0.10	53.02	3.52	9,189.56	0.65	0.29	9,291.96
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	207	882.62	7.14	889.76	95.30	6.57	101.87	218.17	0.40	81.25	12.72	35,533.54	2.33	1.04	35,903.14
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	144	613.53	3.54	617.07	66.25	3.26	69.50	75.44	0.17	88.30	5.01	15,520.15	1.34	0.60	15,732.68
Scraper	202	59.19	19.67	78.86	32.53	18.10	50.63	427.36	0.47	114.52	30.09	42,191.28	3.47	1.56	42,742.19
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,159	23.62	13.25	36.87	3.58	12.19	15.76	236.06	0.58	312.13	15.14	49,525.01	3.08	1.38	50,013.80
Tensioner	35	13.18	1.49	14.67	1.32	1.37	2.69	39.46	0.04	20.66	2.37	3,754.50	0.23	0.10	3,791.33
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	106	452.08	2.84	454.91	48.81	2.61	51.42	55.68	0.12	61.86	4.10	10,721.16	0.75	0.34	10,840.62
Tractor Disk	106	43.71	2.66	46.36	4.37	2.45	6.82	80.05	0.20	37.37	4.67	18,160.33	0.98	0.44	18,315.49
Truck	48	16.29	2.08	18.37	1.63	1.92	3.54	46.42	0.09	17.46	3.54	7,967.03	0.51	0.23	8,047.79
Truck (Onroad)	1,628	608.00	70.81	678.82	60.80	65.15	125.95	1,578.33	3.05	593.78	120.51	270,879.14	17.31	7.76	273,624.72
Truck Mounted Digger	35	12.00	0.78	12.78	1.20	0.72	1.92	25.68	0.07	12.07	1.42	6,630.28	0.20	0.09	6,661.95
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	138	45.20	5.99	51.20	4.52	5.51	10.03	133.56	0.26	50.25	10.20	22,922.69	1.47	0.66	23,155.03
Water Pump	249	43.72	4.30	48.03	4.37	3.96	8.33	47.82	0.04	13.52	9.29	3,283.40	0.36	0.16	3,340.08
Water truck	894	333.81	38.88	372.68	33.38	35.77	69.15	866.54	1.67	326.00	66.16	148,717.96	9.51	4.26	150,225.34
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	32	11.92	1.39	13.31	1.19	1.28	2.47	30.95	0.06	11.64	2.36	5,311.36	0.34	0.15	5,365.19
On-road Vehicles															
Aggregate Base Delivery Trucks	7	2.77	0.00	2.77	0.28	0.00	0.28	0.16	0.00	0.03	0.01	27.95	0.00	0.00	28.04
Concrete Delivery Trucks	25	10.37	0.01	10.38	1.04	0.01	1.05	0.61	0.00	0.11	0.04	104.71	0.00	0.00	105.03
Material Delivery Trucks	98	40.49	0.04	40.53	4.05	0.04	4.10	2.38	0.00	0.44	0.17	408.85	0.01	0.00	410.07
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	740	243.05	0.24	243.29	24.38	0.23	24.61	11.17	0.02	1.49	0.69	2,096.59	0.03	0.01	2,101.68
Worker Vehicles	3,402	598.55	0.03	598.58	59.95	0.03	59.98	1.82	0.04	19.37	0.70	3,827.30	0.23	0.10	3,864.06
Fuel Trucks	5	1.77	0.00	1.78	0.18	0.00	0.18	0.08	0.00	0.01	0.01	15.30	0.00	0.00	15.34
On-site Emissions Subtotal		**5,878.66**	**301.70**	**6,180.36**	**691.96**	**277.58**	**969.53**	**5,703.81**	**10.51**	**3,329.57**	**522.03**	**916,946.08**	**74.20**	**33.26**	**928,712.58**
Off															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	378	156.12	0.17	156.29	15.63	0.16	15.79	9.17	0.02	1.70	0.64	1,576.48	0.03	0.01	1,581.21
Concrete Delivery Trucks	1,416	584.87	0.63	585.50	58.57	0.60	59.17	34.34	0.06	6.35	2.41	5,905.91	0.11	0.05	5,923.63
Material Delivery Trucks	5,527	2,283.57	2.46	2,286.03	228.67	2.35	231.02	134.10	0.22	24.81	9.39	23,058.93	0.44	0.20	23,128.13
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	41,736	13,708.10	13.68	13,721.78	1,374.91	13.09	1,388.00	629.97	1.13	84.15	38.98	118,247.85	1.81	0.81	118,534.98
Worker Vehicles	191,873	33,758.36	1.71	33,760.07	3,381.45	1.57	3,383.02	102.65	2.17	1,092.72	39.64	215,859.71	13.08	5.86	217,933.22
Fuel Trucks	305	100.03	0.10	100.13	10.03	0.10	10.13	4.60	0.01	0.61	0.28	862.89	0.01	0.01	864.98
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	493	1.87	0.22	2.09	0.47	0.21	0.68	11.96	0.02	2.21	0.84	2,057.25	0.04	0.02	2,063.42
Concrete Delivery Trucks	1,847	6.99	0.82	7.81	1.76	0.79	2.55	44.82	0.07	8.29	3.14	7,707.00	0.15	0.07	7,730.13
Material Delivery Trucks	24,363	92.19	10.83	103.02	23.24	10.36	33.61	591.06	0.97	109.36	41.41	101,639.20	1.92	0.86	101,944.20
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	32,264	78.50	10.58	89.07	20.97	10.12	31.09	486.99	0.87	65.05	30.13	91,411.46	1.40	0.63	91,633.42
Worker Vehicles	998,827	613.22	8.88	622.09	165.40	8.20	173.60	534.36	11.31	5,688.34	206.34	1,123,695.22	68.06	30.51	1,134,489.27
Fuel Trucks	235	0.57	0.08	0.65	0.15	0.07	0.23	3.55	0.01	0.47	0.22	667.06	0.01	0.00	668.68
Off-site Emissions Subtotal		**53,323.79**	**60.99**	**53,384.78**	**5,486.91**	**58.00**	**5,544.90**	**3,179.54**	**17.82**	**7,193.60**	**414.89**	**1,794,483.35**	**88.98**	**39.89**	**1,808,595.13**
Total Emissions In This Month (pounds)		**59,202.46**	**362.69**	**59,565.14**	**6,178.86**	**335.57**	**6,514.44**	**8,883.35**	**28.33**	**10,523.17**	**936.92**	**2,711,429.43**	**163.18**	**73.15**	**2,737,307.71**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 20															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	249	5.07	6.06	11.12	0.77	5.57	6.34	82.19	0.21	125.97	6.92	18,289.21	1.87	0.84	18,585.84
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	122	57.57	6.47	64.03	5.76	5.95	11.71	154.80	0.22	53.89	10.08	21,916.63	1.46	0.65	22,147.39
Crawler Tractor	24	7.36	1.31	8.67	0.74	1.21	1.94	23.66	0.03	17.92	1.82	2,949.48	0.31	0.14	2,999.28
Dozer (D6)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	50	15.24	0.94	16.18	1.52	0.87	2.39	16.86	0.04	21.31	1.11	3,144.65	0.33	0.15	3,197.26
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	62	10.93	1.08	12.01	1.09	0.99	2.08	11.96	0.02	14.75	2.32	1,901.82	0.35	0.16	1,956.96
Generator (45 kW)	1,119	223.94	19.37	243.31	22.39	17.82	40.21	215.20	0.44	265.52	41.82	34,232.67	6.26	2.81	35,225.30
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	103	441.31	3.57	444.88	47.65	3.28	50.93	109.09	0.20	40.63	6.36	17,766.77	1.17	0.52	17,951.57
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	96	409.02	2.36	411.38	44.16	2.17	46.33	50.29	0.12	58.87	3.34	10,346.77	0.89	0.40	10,488.46
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,008	20.54	11.52	32.06	3.11	10.60	13.71	205.27	0.51	271.41	13.17	43,065.22	2.68	1.20	43,490.26
Tensioner	35	13.18	1.49	14.67	1.32	1.37	2.69	39.46	0.04	20.66	2.37	3,754.50	0.23	0.10	3,791.33
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Disk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck	96	32.57	4.17	36.74	3.26	3.83	7.09	92.84	0.18	34.93	7.09	15,934.07	1.02	0.46	16,095.57
Truck (Onroad)	1,309	488.79	56.93	545.72	48.88	52.37	101.25	1,268.86	2.45	477.35	96.88	217,765.58	13.92	6.24	219,972.82
Truck Mounted Digger	35	12.00	0.78	12.78	1.20	0.72	1.92	25.68	0.07	12.07	1.42	6,630.28	0.20	0.09	6,661.95
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Pump	124	21.86	2.15	24.01	2.19	1.98	4.17	23.91	0.02	6.76	4.65	1,641.70	0.18	0.08	1,670.04
Water truck	894	333.81	38.88	372.68	33.38	35.77	69.15	866.54	1.67	326.00	66.16	148,717.96	9.51	4.26	150,225.34
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	32	11.92	1.39	13.31	1.19	1.28	2.47	30.95	0.06	11.64	2.36	5,311.36	0.34	0.15	5,365.19
On-road Vehicles															
Aggregate Base Delivery Trucks	7	2.77	0.00	2.77	0.28	0.00	0.28	0.16	0.00	0.03	0.01	27.95	0.00	0.00	28.04
Concrete Delivery Trucks	25	10.37	0.01	10.38	1.04	0.01	1.05	0.61	0.00	0.11	0.04	104.71	0.00	0.00	105.03
Material Delivery Trucks	104	42.97	0.05	43.01	4.30	0.04	4.35	2.52	0.00	0.47	0.18	433.88	0.01	0.00	435.18
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	522	171.45	0.17	171.62	17.20	0.16	17.36	7.88	0.01	1.05	0.49	1,478.95	0.02	0.01	1,482.54
Worker Vehicles	3,318	583.77	0.03	583.80	58.47	0.03	58.50	1.78	0.04	18.90	0.69	3,732.80	0.23	0.10	3,768.66
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**4,447.23**	**259.40**	**4,706.63**	**526.41**	**238.66**	**765.07**	**4,770.26**	**8.79**	**2,855.11**	**452.68**	**764,293.92**	**63.78**	**28.59**	**774,409.13**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	378	156.12	0.17	156.29	15.63	0.16	15.79	9.17	0.02	1.70	0.64	1,576.48	0.03	0.01	1,581.21
Concrete Delivery Trucks	1,416	584.87	0.63	585.50	58.57	0.60	59.17	34.34	0.06	6.35	2.41	5,905.91	0.11	0.05	5,923.63
Material Delivery Trucks	5,866	2,423.38	2.61	2,425.99	242.67	2.49	245.17	142.30	0.23	26.33	9.97	24,470.70	0.46	0.21	24,544.14
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	29,441	9,669.77	9.65	9,679.42	969.87	9.23	979.10	444.38	0.80	59.36	27.50	83,412.67	1.28	0.57	83,615.21
Worker Vehicles	187,135	32,924.82	1.66	32,926.49	3,297.95	1.54	3,299.49	100.11	2.12	1,065.74	38.66	210,529.84	12.75	5.72	212,552.16
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	493	1.87	0.22	2.09	0.47	0.21	0.68	11.96	0.02	2.21	0.84	2,057.25	0.04	0.02	2,063.42
Concrete Delivery Trucks	1,847	6.99	0.82	7.81	1.76	0.79	2.55	44.82	0.07	8.29	3.14	7,707.00	0.15	0.07	7,730.13
Material Delivery Trucks	25,854	97.83	11.49	109.32	24.67	11.00	35.66	627.25	1.03	116.05	43.94	107,862.01	2.04	0.91	108,185.68
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	22,759	55.37	7.46	62.83	14.79	7.14	21.93	343.53	0.62	45.89	21.26	64,482.14	0.99	0.44	64,638.71
Worker Vehicles	974,165	598.08	8.66	606.73	161.32	7.99	169.31	521.16	11.03	5,547.89	201.24	1,095,949.66	66.38	29.76	1,106,477.19
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**48,547.93**	**54.37**	**48,602.31**	**5,002.40**	**51.68**	**5,054.08**	**2,878.25**	**16.97**	**6,990.30**	**391.51**	**1,707,108.01**	**86.18**	**38.63**	**1,720,774.59**
Total Emissions In This Month (pounds)		**52,995.16**	**313.77**	**53,308.93**	**5,528.81**	**290.33**	**5,819.15**	**7,648.51**	**25.76**	**9,845.42**	**844.19**	**2,471,401.92**	**149.96**	**67.22**	**2,495,183.72**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 21															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	121	21.27	2.09	23.36	2.13	1.93	4.05	23.26	0.03	27.34	4.52	2,691.51	0.72	0.32	2,805.34
ATV	1,344	196.92	23.26	220.18	19.69	21.40	41.09	258.49	0.23	73.08	50.23	17,748.09	1.93	0.87	18,054.46
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	249	5.07	6.06	11.12	0.77	5.57	6.34	82.19	0.21	125.97	6.92	18,289.21	1.87	0.84	18,585.84
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	122	57.57	6.47	64.03	5.76	5.95	11.71	154.80	0.22	53.89	10.08	21,916.63	1.46	0.65	22,147.39
Crawler Tractor	24	7.36	1.31	8.67	0.74	1.21	1.94	23.66	0.03	17.92	1.82	2,949.48	0.31	0.14	2,999.28
Dozer (D6)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	50	15.24	0.94	16.18	1.52	0.87	2.39	16.86	0.04	21.31	1.11	3,144.65	0.33	0.15	3,197.26
Forklift (10 K) (Aerial Lift)	260	67.04	4.88	71.92	6.70	4.49	11.19	87.09	0.19	110.10	5.72	16,247.33	1.71	0.77	16,519.20
Forklift (5 K)	168	33.62	3.15	36.77	3.36	2.90	6.26	56.19	0.12	71.03	3.69	10,482.15	1.11	0.50	10,657.55
Generator	62	10.93	1.08	12.01	1.09	0.99	2.08	11.96	0.02	14.75	2.32	1,901.82	0.35	0.16	1,956.96
Generator (45 kW)	1,119	223.94	19.37	243.31	22.39	17.82	40.21	215.20	0.44	265.52	41.82	34,232.67	6.26	2.81	35,225.30
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	103	441.31	3.57	444.88	47.65	3.28	50.93	109.09	0.20	40.63	6.36	17,766.77	1.17	0.52	17,951.57
Post Machine	706	124.07	11.75	135.82	12.41	10.81	23.21	162.65	0.28	156.77	22.06	21,879.91	1.40	0.63	22,102.06
Roller/Vibrator/Padder	96	409.02	2.36	411.38	44.16	2.17	46.33	50.29	0.12	58.87	3.34	10,346.77	0.89	0.40	10,488.46
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	1,008	20.54	11.52	32.06	3.11	10.60	13.71	205.27	0.51	271.41	13.17	43,065.22	2.68	1.20	43,490.26
Tensioner	35	13.18	1.49	14.67	1.32	1.37	2.69	39.46	0.04	20.66	2.37	3,754.50	0.23	0.10	3,791.33
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Disk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck	96	32.57	4.17	36.74	3.26	3.83	7.09	92.84	0.18	34.93	7.09	15,934.07	1.02	0.46	16,095.57
Truck (Onroad)	1,309	488.79	56.93	545.72	48.88	52.37	101.25	1,268.86	2.45	477.35	96.88	217,765.58	13.92	6.24	219,972.82
Truck Mounted Digger	35	12.00	0.78	12.78	1.20	0.72	1.92	25.68	0.07	12.07	1.42	6,630.28	0.20	0.09	6,661.95
Truck, flatbed (onroad)	192	71.53	8.33	79.86	7.15	7.66	14.82	185.69	0.36	69.86	14.18	31,868.13	2.04	0.91	32,191.14
Water Pull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Pump	124	21.86	2.15	24.01	2.19	1.98	4.17	23.91	0.02	6.76	4.65	1,641.70	0.18	0.08	1,670.04
Water truck	894	333.81	38.88	372.68	33.38	35.77	69.15	866.54	1.67	326.00	66.16	148,717.96	9.51	4.26	150,225.34
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	32	11.92	1.39	13.31	1.19	1.28	2.47	30.95	0.06	11.64	2.36	5,311.36	0.34	0.15	5,365.19
On-road Vehicles															
Aggregate Base Delivery Trucks	7	2.77	0.00	2.77	0.28	0.00	0.28	0.16	0.00	0.03	0.01	27.95	0.00	0.00	28.04
Concrete Delivery Trucks	25	10.37	0.01	10.38	1.04	0.01	1.05	0.61	0.00	0.11	0.04	104.71	0.00	0.00	105.03
Material Delivery Trucks	104	42.97	0.05	43.01	4.30	0.04	4.35	2.52	0.00	0.47	0.18	433.88	0.01	0.00	435.18
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	522	171.45	0.17	171.62	17.20	0.16	17.36	7.88	0.01	1.05	0.49	1,478.95	0.02	0.01	1,482.54
Worker Vehicles	3,318	583.77	0.03	583.80	58.47	0.03	58.50	1.78	0.04	18.90	0.69	3,732.80	0.23	0.10	3,768.66
Fuel Trucks	5	1.58	0.00	1.58	0.16	0.00	0.16	0.07	0.00	0.01	0.00	13.60	0.00	0.00	13.63
On-site Emissions Subtotal		**4,447.23**	**259.40**	**4,706.63**	**526.41**	**238.66**	**765.07**	**4,770.26**	**8.79**	**2,855.11**	**452.68**	**764,293.92**	**63.78**	**28.59**	**774,409.13**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	378	156.12	0.17	156.29	15.63	0.16	15.79	9.17	0.02	1.70	0.64	1,576.48	0.03	0.01	1,581.21
Concrete Delivery Trucks	1,416	584.87	0.63	585.50	58.57	0.60	59.17	34.34	0.06	6.35	2.41	5,905.91	0.11	0.05	5,923.63
Material Delivery Trucks	5,866	2,423.38	2.61	2,425.99	242.67	2.49	245.17	142.30	0.23	26.33	9.97	24,470.70	0.46	0.21	24,544.14
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	29,441	9,669.77	9.65	9,679.42	969.87	9.23	979.10	444.38	0.80	59.36	27.50	83,412.67	1.28	0.57	83,615.21
Worker Vehicles	187,135	32,924.82	1.66	32,926.49	3,297.95	1.54	3,299.49	100.11	2.12	1,065.74	38.66	210,529.84	12.75	5.72	212,552.16
Fuel Trucks	271	88.92	0.09	89.01	8.92	0.08	9.00	4.09	0.01	0.55	0.25	767.01	0.01	0.01	768.88
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	493	1.87	0.22	2.09	0.47	0.21	0.68	11.96	0.02	2.21	0.84	2,057.25	0.04	0.02	2,063.42
Concrete Delivery Trucks	1,847	6.99	0.82	7.81	1.76	0.79	2.55	44.82	0.07	8.29	3.14	7,707.00	0.15	0.07	7,730.13
Material Delivery Trucks	25,854	97.83	11.49	109.32	24.67	11.00	35.66	627.25	1.03	116.05	43.94	107,862.01	2.04	0.91	108,185.68
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	22,759	55.37	7.46	62.83	14.79	7.14	21.93	343.53	0.62	45.89	21.26	64,482.14	0.99	0.44	64,638.71
Worker Vehicles	974,165	598.08	8.66	606.73	161.32	7.99	169.31	521.16	11.03	5,547.89	201.24	1,095,949.66	66.38	29.76	1,106,477.19
Fuel Trucks	209	0.51	0.07	0.58	0.14	0.07	0.20	3.16	0.01	0.42	0.20	592.94	0.01	0.00	594.38
Off-site Emissions Subtotal		**48,547.93**	**54.37**	**48,602.31**	**5,002.40**	**51.68**	**5,054.08**	**2,878.25**	**16.97**	**6,990.30**	**391.51**	**1,707,108.01**	**86.18**	**38.63**	**1,720,774.59**
Total Emissions In This Month (pounds)		**52,995.16**	**313.77**	**53,308.93**	**5,528.81**	**290.33**	**5,819.15**	**7,648.51**	**25.76**	**9,845.42**	**844.19**	**2,471,401.92**	**149.96**	**67.22**	**2,495,183.72**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 22															
On-site															
Off-road Equipment															
5 CY Dump Truck	32	16.29	1.73	18.02	1.63	1.59	3.22	44.47	0.09	18.48	3.18	8,685.09	0.53	0.24	8,769.77
Air Compressor	60	10.63	1.05	11.68	1.06	0.96	2.03	11.63	0.02	13.67	2.26	1,345.76	0.36	0.16	1,402.67
ATV	672	98.46	11.63	110.09	9.85	10.70	20.55	129.25	0.11	36.54	25.12	8,874.05	0.97	0.43	9,027.23
Auger	42	15.69	0.93	16.61	1.57	0.85	2.42	30.57	0.09	14.37	1.69	7,893.18	0.24	0.11	7,930.90
Backhoe/Excavator	249	5.07	6.06	11.12	0.77	5.57	6.34	82.19	0.21	125.97	6.92	18,289.21	1.87	0.84	18,585.84
Cable Plow	53	15.54	2.67	18.20	8.54	2.45	10.99	33.87	0.04	24.13	3.21	3,431.17	0.52	0.23	3,513.02
Cable Trencher	63	18.50	1.33	19.83	10.17	1.23	11.39	14.79	0.03	24.02	2.84	2,071.96	0.74	0.33	2,189.72
Compactor	36	11.85	0.89	12.74	1.19	0.82	2.00	18.97	0.04	22.21	1.26	3,902.73	0.34	0.15	3,956.17
Crane	91	43.18	4.85	48.03	4.32	4.46	8.78	116.10	0.16	40.42	7.56	16,437.47	1.09	0.49	16,610.55
Crawler Tractor	24	7.36	1.31	8.67	0.74	1.21	1.94	23.66	0.03	17.92	1.82	2,949.48	0.31	0.14	2,999.28
Dozer (D6)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	50	15.24	0.94	16.18	1.52	0.87	2.39	16.86	0.04	21.31	1.11	3,144.65	0.33	0.15	3,197.26
Forklift (10 K) (Aerial Lift)	130	33.52	2.44	35.96	3.35	2.24	5.60	43.55	0.10	55.05	2.86	8,123.67	0.86	0.38	8,259.60
Forklift (5 K)	84	16.81	1.57	18.39	1.68	1.45	3.13	28.10	0.06	35.51	1.85	5,241.08	0.55	0.25	5,328.77
Generator	62	10.93	1.08	12.01	1.09	0.99	2.08	11.96	0.02	14.75	2.32	1,901.82	0.35	0.16	1,956.96
Generator (45 kW)	746	149.29	12.91	162.20	14.93	11.88	26.81	143.46	0.30	177.01	27.88	22,821.78	4.17	1.87	23,483.53
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Man/Aerial Lift	26	5.21	0.09	5.30	0.52	0.08	0.60	3.00	0.01	4.10	0.15	510.26	0.10	0.04	525.95
Mini Excavator	63	11.08	0.68	11.76	1.11	0.63	1.74	9.16	0.02	16.51	1.29	1,574.69	0.33	0.15	1,627.19
Mini-Trencher	252	73.98	5.34	79.32	40.67	4.91	45.58	59.17	0.11	96.07	11.38	8,287.85	2.97	1.33	8,758.87
Motor Grader	103	441.31	3.57	444.88	47.65	3.28	50.93	109.09	0.20	40.63	6.36	17,766.77	1.17	0.52	17,951.57
Post Machine	353	62.04	5.87	67.91	6.20	5.40	11.61	81.33	0.14	78.38	11.03	10,939.96	0.70	0.31	11,051.03
Roller/Vibrator/Padder	96	409.02	2.36	411.38	44.16	2.17	46.33	50.29	0.12	58.87	3.34	10,346.77	0.89	0.40	10,488.46
Scraper	151	44.39	14.76	59.14	24.40	13.57	37.97	320.52	0.36	85.89	22.56	31,643.46	2.61	1.17	32,056.64
Sheepsfoot Roller	144	613.53	4.65	618.18	66.25	4.28	70.52	62.51	0.10	57.00	5.65	8,465.53	1.03	0.46	8,629.25
Skid Steer	504	10.27	5.76	16.03	1.56	5.30	6.85	102.64	0.25	135.71	6.58	21,532.61	1.34	0.60	21,745.13
Tensioner	35	13.18	1.49	14.67	1.32	1.37	2.69	39.46	0.04	20.66	2.37	3,754.50	0.23	0.10	3,791.33
Tractor	45	15.43	1.22	16.65	1.54	1.12	2.66	23.86	0.05	26.51	1.76	4,594.78	0.32	0.14	4,645.98
Tractor Buster	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Disk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck	96	32.57	4.17	36.74	3.26	3.83	7.09	92.84	0.18	34.93	7.09	15,934.07	1.02	0.46	16,095.57
Truck (Onroad)	830	309.96	36.10	346.06	31.00	33.21	64.21	804.64	1.55	302.71	61.44	138,095.25	8.83	3.96	139,494.96
Truck Mounted Digger	35	12.00	0.78	12.78	1.20	0.72	1.92	25.68	0.07	12.07	1.42	6,630.28	0.20	0.09	6,661.95
Truck, flatbed (onroad)	128	47.69	5.55	53.24	4.77	5.11	9.88	123.79	0.24	46.57	9.45	21,245.42	1.36	0.61	21,460.76
Water Pull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Pump	124	21.86	2.15	24.01	2.19	1.98	4.17	23.91	0.02	6.76	4.65	1,641.70	0.18	0.08	1,670.04
Water truck	702	262.28	30.55	292.82	26.23	28.10	54.33	680.85	1.31	256.14	51.98	116,849.82	7.47	3.35	118,034.19
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	32	11.92	1.39	13.31	1.19	1.28	2.47	30.95	0.06	11.64	2.36	5,311.36	0.34	0.15	5,365.19
On-road Vehicles															
Aggregate Base Delivery Trucks	7	2.73	0.00	2.73	0.27	0.00	0.28	0.16	0.00	0.03	0.01	27.53	0.00	0.00	27.62
Concrete Delivery Trucks	25	10.33	0.01	10.34	1.03	0.01	1.04	0.61	0.00	0.11	0.04	104.30	0.00	0.00	104.61
Material Delivery Trucks	102	42.14	0.05	42.19	4.22	0.04	4.26	2.47	0.00	0.46	0.17	425.53	0.01	0.00	426.81
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	426	139.92	0.14	140.06	14.03	0.13	14.17	6.43	0.01	0.86	0.40	1,206.96	0.02	0.01	1,209.89
Worker Vehicles	2,646	465.54	0.02	465.56	46.63	0.02	46.65	1.42	0.03	15.07	0.55	2,976.79	0.18	0.08	3,005.38
Fuel Trucks	3	1.05	0.00	1.05	0.11	0.00	0.11	0.05	0.00	0.01	0.00	9.07	0.00	0.00	9.09
On-site Emissions Subtotal		**3,701.06**	**191.03**	**3,892.09**	**451.24**	**175.75**	**626.99**	**3,549.66**	**6.52**	**2,126.45**	**331.94**	**568,143.87**	**48.70**	**21.83**	**575,867.02**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	372	153.79	0.17	153.96	15.40	0.16	15.56	9.03	0.01	1.67	0.63	1,552.95	0.03	0.01	1,557.61
Concrete Delivery Trucks	1,410	582.54	0.63	583.17	58.33	0.60	58.93	34.21	0.06	6.33	2.40	5,882.38	0.11	0.05	5,900.03
Material Delivery Trucks	5,753	2,376.78	2.56	2,379.34	238.00	2.45	240.45	139.57	0.23	25.82	9.78	24,000.11	0.45	0.20	24,072.13
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	24,026	7,891.42	7.88	7,899.29	791.50	7.53	799.04	362.66	0.65	48.44	22.44	68,072.41	1.04	0.47	68,237.70
Worker Vehicles	149,234	26,256.51	1.33	26,257.83	2,630.01	1.22	2,631.24	79.84	1.69	849.89	30.83	167,890.88	10.17	4.56	169,503.62
Fuel Trucks	180	59.28	0.06	59.34	5.95	0.06	6.00	2.72	0.00	0.36	0.17	511.34	0.01	0.00	512.58
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	486	1.84	0.22	2.05	0.46	0.21	0.67	11.78	0.02	2.18	0.83	2,026.54	0.04	0.02	2,032.62
Concrete Delivery Trucks	1,840	6.96	0.82	7.78	1.76	0.78	2.54	44.64	0.07	8.26	3.13	7,676.30	0.15	0.07	7,699.33
Material Delivery Trucks	25,357	95.95	11.27	107.22	24.19	10.78	34.98	615.19	1.01	113.82	43.10	105,787.74	2.00	0.90	106,105.18
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	18,574	45.19	6.09	51.28	12.07	5.82	17.90	280.35	0.50	37.45	17.35	52,623.35	0.81	0.36	52,751.13
Worker Vehicles	776,866	476.95	6.90	483.85	128.65	6.37	135.02	415.61	8.80	4,424.26	160.48	873,985.17	52.94	23.73	882,380.54
Fuel Trucks	140	0.34	0.05	0.39	0.09	0.04	0.13	2.11	0.00	0.28	0.13	395.29	0.01	0.00	396.25
Off-site Emissions Subtotal		**39,886.94**	**48.80**	**39,935.74**	**4,112.06**	**46.42**	**4,158.48**	**2,589.67**	**14.02**	**5,628.30**	**332.73**	**1,412,198.87**	**69.68**	**31.23**	**1,423,248.61**
Total Emissions In This Month (pounds)		**43,588.00**	**239.83**	**43,827.83**	**4,563.30**	**222.17**	**4,785.47**	**6,139.34**	**20.54**	**7,754.75**	**664.67**	**1,980,342.74**	**118.38**	**53.07**	**1,999,115.63**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 23															
On-site															
Off-road Equipment															
5 CY Dump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Air Compressor	60	10.63	1.05	11.68	1.06	0.96	2.03	11.63	0.02	13.67	2.26	1,345.76	0.36	0.16	1,402.67
ATV	672	98.46	11.63	110.09	9.85	10.70	20.55	129.25	0.11	36.54	25.12	8,874.05	0.97	0.43	9,027.23
Auger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Backhoe/Excavator	31	0.63	0.76	1.39	0.10	0.70	0.79	10.27	0.03	15.75	0.87	2,286.15	0.23	0.10	2,323.23
Cable Plow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Compactor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crane	30	14.39	1.62	16.01	1.44	1.49	2.93	38.70	0.05	13.47	2.52	5,479.16	0.36	0.16	5,536.85
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (10 K) (Aerial Lift)	130	33.52	2.44	35.96	3.35	2.24	5.60	43.55	0.10	55.05	2.86	8,123.67	0.86	0.38	8,259.60
Forklift (5 K)	84	16.81	1.57	18.39	1.68	1.45	3.13	28.10	0.06	35.51	1.85	5,241.08	0.55	0.25	5,328.77
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Man/Aerial Lift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini-Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Motor Grader	52	220.66	1.78	222.44	23.83	1.64	25.47	54.54	0.10	20.31	3.18	8,883.39	0.58	0.26	8,975.79
Post Machine	353	62.04	5.87	67.91	6.20	5.40	11.61	81.33	0.14	78.38	11.03	10,939.96	0.70	0.31	11,051.03
Roller/Vibrator/Padder	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scraper	101	29.59	9.84	39.43	16.27	9.05	25.32	213.68	0.24	57.26	15.04	21,095.64	1.74	0.78	21,371.10
Sheepsfoot Roller	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Skid Steer	504	10.27	5.76	16.03	1.56	5.30	6.85	102.64	0.25	135.71	6.58	21,532.61	1.34	0.60	21,745.13
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Buster	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Disk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck	48	16.29	2.08	18.37	1.63	1.92	3.54	46.42	0.09	17.46	3.54	7,967.03	0.51	0.23	8,047.79
Truck (Onroad)	479	178.82	20.83	199.65	17.88	19.16	37.04	464.22	0.90	174.64	35.44	79,670.33	5.09	2.28	80,477.86
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	64	23.84	2.78	26.62	2.38	2.55	4.94	61.90	0.12	23.29	4.73	10,622.71	0.68	0.30	10,730.38
Water Pull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Pump	124	21.86	2.15	24.01	2.19	1.98	4.17	23.91	0.02	6.76	4.65	1,641.70	0.18	0.08	1,670.04
Water truck	319	119.22	13.88	133.10	11.92	12.77	24.70	309.48	0.60	116.43	23.63	53,113.56	3.39	1.52	53,651.91
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	8	3.31	0.00	3.31	0.33	0.00	0.33	0.19	0.00	0.04	0.01	33.38	0.00	0.00	33.48
Tracker Deliveries Trucks	80	33.05	0.04	33.09	3.31	0.03	3.34	1.94	0.00	0.36	0.14	333.75	0.01	0.00	334.75
Water Haul Trucks	138	45.33	0.05	45.37	4.55	0.04	4.59	2.08	0.00	0.28	0.13	390.99	0.01	0.00	391.94
Worker Vehicles	1,554	273.41	0.01	273.43	27.39	0.01	27.40	0.83	0.02	8.85	0.32	1,748.27	0.11	0.05	1,765.07
Fuel Trucks	2	0.59	0.00	0.59	0.06	0.00	0.06	0.03	0.00	0.00	0.00	5.10	0.00	0.00	5.11
On-site Emissions Subtotal		**1,352.96**	**97.05**	**1,450.01**	**150.99**	**89.29**	**240.28**	**1,768.14**	**3.14**	**986.78**	**171.78**	**272,150.05**	**21.84**	**9.79**	**275,613.24**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	451	186.41	0.20	186.61	18.67	0.19	18.86	10.95	0.02	2.03	0.77	1,882.36	0.04	0.02	1,888.01
Tracker Deliveries Trucks	4,512	1,864.14	2.01	1,866.15	186.67	1.92	188.59	109.47	0.18	20.25	7.67	18,823.62	0.36	0.16	18,880.10
Water Haul Trucks	7,783	2,556.37	2.55	2,558.93	256.40	2.44	258.84	117.48	0.21	15.69	7.27	22,051.63	0.34	0.15	22,105.17
Worker Vehicles	87,646	15,420.49	0.78	15,421.27	1,544.61	0.72	1,545.33	46.89	0.99	499.14	18.11	98,602.58	5.97	2.68	99,549.74
Fuel Trucks	102	33.34	0.03	33.38	3.34	0.03	3.38	1.53	0.00	0.20	0.09	287.63	0.00	0.00	288.33
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,989	7.53	0.88	8.41	1.90	0.85	2.74	48.25	0.08	8.93	3.38	8,297.08	0.16	0.07	8,321.98
Tracker Deliveries Trucks	19,888	75.25	8.84	84.10	18.97	8.46	27.43	482.50	0.79	89.27	33.80	82,970.77	1.57	0.70	83,219.75
Water Haul Trucks	6,017	14.64	1.97	16.61	3.91	1.89	5.80	90.82	0.16	12.13	5.62	17,047.00	0.26	0.12	17,088.40
Worker Vehicles	456,254	280.11	4.05	284.17	75.55	3.74	79.30	244.09	5.17	2,598.38	94.25	513,292.88	31.09	13.94	518,223.49
Fuel Trucks	78	0.19	0.03	0.22	0.05	0.02	0.08	1.18	0.00	0.16	0.07	222.35	0.00	0.00	222.89
Off-site Emissions Subtotal		**20,438.48**	**21.35**	**20,459.83**	**2,110.08**	**20.26**	**2,130.34**	**1,153.16**	**7.60**	**3,246.18**	**171.03**	**763,477.90**	**39.79**	**17.84**	**769,787.87**
Total Emissions In This Month (pounds)		**21,791.44**	**118.40**	**21,909.84**	**2,261.07**	**109.56**	**2,370.63**	**2,921.30**	**10.75**	**4,232.96**	**342.81**	**1,035,627.95**	**61.63**	**27.63**	**1,045,401.11**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 24															
On-site															
Off-road Equipment															
5 CY Dump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Air Compressor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Auger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Backhoe/Excavator	31	0.63	0.76	1.39	0.10	0.70	0.79	10.27	0.03	15.75	0.87	2,286.15	0.23	0.10	2,323.23
Cable Plow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Compactor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (10 K) (Aerial Lift)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (5 K)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Man/Aerial Lift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini-Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Motor Grader	52	220.66	1.78	222.44	23.83	1.64	25.47	54.54	0.10	20.31	3.18	8,883.39	0.58	0.26	8,975.79
Post Machine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Roller/Vibrator/Padder	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scraper	101	29.59	9.84	39.43	16.27	9.05	25.32	213.68	0.24	57.26	15.04	21,095.64	1.74	0.78	21,371.10
Sheepsfoot Roller	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Skid Steer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Buster	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Disk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck	48	16.29	2.08	18.37	1.63	1.92	3.54	46.42	0.09	17.46	3.54	7,967.03	0.51	0.23	8,047.79
Truck (Onroad)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Pull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Pump	124	21.86	2.15	24.01	2.19	1.98	4.17	23.91	0.02	6.76	4.65	1,641.70	0.18	0.08	1,670.04
Water truck	128	47.69	5.55	53.24	4.77	5.11	9.88	123.79	0.24	46.57	9.45	21,245.42	1.36	0.61	21,460.76
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	8	3.31	0.00	3.31	0.33	0.00	0.33	0.19	0.00	0.04	0.01	33.38	0.00	0.00	33.48
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	42	13.79	0.01	13.81	1.38	0.01	1.40	0.63	0.00	0.08	0.04	119.00	0.00	0.00	119.28
Worker Vehicles	252	44.34	0.00	44.34	4.44	0.00	4.44	0.13	0.00	1.44	0.05	283.50	0.02	0.01	286.23
Fuel Trucks	1	0.20	0.00	0.20	0.02	0.00	0.02	0.01	0.00	0.00	0.00	1.70	0.00	0.00	1.70
On-site Emissions Subtotal		**538.58**	**35.10**	**573.68**	**68.97**	**32.29**	**101.26**	**617.06**	**1.01**	**342.69**	**64.72**	**86,378.69**	**8.79**	**3.94**	**87,772.92**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	451	186.41	0.20	186.61	18.67	0.19	18.86	10.95	0.02	2.03	0.77	1,882.36	0.04	0.02	1,888.01
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	2,369	778.03	0.78	778.80	78.04	0.74	78.78	35.75	0.06	4.78	2.21	6,711.36	0.10	0.05	6,727.66
Worker Vehicles	14,213	2,500.62	0.13	2,500.75	250.48	0.12	250.59	7.60	0.16	80.94	2.94	15,989.61	0.97	0.43	16,143.20
Fuel Trucks	34	11.11	0.01	11.13	1.11	0.01	1.13	0.51	0.00	0.07	0.03	95.88	0.00	0.00	96.11
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,989	7.53	0.88	8.41	1.90	0.85	2.74	48.25	0.08	8.93	3.38	8,297.08	0.16	0.07	8,321.98
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	1,831	4.46	0.60	5.06	1.19	0.57	1.76	27.64	0.05	3.69	1.71	5,188.22	0.08	0.04	5,200.82
Worker Vehicles	73,987	45.42	0.66	46.08	12.25	0.61	12.86	39.58	0.84	421.36	15.28	83,236.68	5.04	2.26	84,036.24
Fuel Trucks	26	0.06	0.01	0.07	0.02	0.01	0.03	0.39	0.00	0.05	0.02	74.12	0.00	0.00	74.30
Off-site Emissions Subtotal		**3,533.64**	**3.26**	**3,536.91**	**363.65**	**3.10**	**366.75**	**170.68**	**1.21**	**521.84**	**26.35**	**121,475.31**	**6.39**	**2.86**	**122,488.31**
Total Emissions In This Month (pounds)		**4,072.22**	**38.36**	**4,110.59**	**432.62**	**35.39**	**468.01**	**787.74**	**2.22**	**864.53**	**91.06**	**207,854.00**	**15.18**	**6.80**	**210,261.24**

Equipment/Vehicle Type	Total hours for all onsite equipment, total VMT for all on-road vehicles	Emissions (lbs)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
Month 25															
On-site															
Off-road Equipment															
5 CY Dump Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Air Compressor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ATV	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Auger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Backhoe/Excavator	31	0.63	0.76	1.39	0.10	0.70	0.79	10.27	0.03	15.75	0.87	2,286.15	0.23	0.10	2,323.23
Cable Plow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cable Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Compactor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crawler Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dozer (D6)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (10 K) (Aerial Lift)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Forklift (5 K)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (45 kW)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Generator (Office)(45 kW)	373	74.65	6.46	81.10	7.46	5.94	13.40	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Generator (Security, IT)(30 kW)	373	65.58	6.46	72.04	6.56	5.94	12.50	71.73	0.15	88.51	13.94	11,410.89	2.09	0.94	11,741.77
Loader	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Man/Aerial Lift	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini Excavator	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mini-Trencher	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Motor Grader	52	220.66	1.78	222.44	23.83	1.64	25.47	54.54	0.10	20.31	3.18	8,883.39	0.58	0.26	8,975.79
Post Machine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Roller/Vibrator/Padder	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scraper	101	29.59	9.84	39.43	16.27	9.05	25.32	213.68	0.24	57.26	15.04	21,095.64	1.74	0.78	21,371.10
Sheepsfoot Roller	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Skid Steer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tensioner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Buster	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tractor Disk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck	48	16.29	2.08	18.37	1.63	1.92	3.54	46.42	0.09	17.46	3.54	7,967.03	0.51	0.23	8,047.79
Truck (Onroad)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck Mounted Digger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Truck, flatbed (onroad)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Pull	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Pump	124	21.86	2.15	24.01	2.19	1.98	4.17	23.91	0.02	6.76	4.65	1,641.70	0.18	0.08	1,670.04
Water truck	128	47.69	5.55	53.24	4.77	5.11	9.88	123.79	0.24	46.57	9.45	21,245.42	1.36	0.61	21,460.76
Water Well Pump	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wire Truck	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-road Vehicles															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	8	3.31	0.00	3.31	0.33	0.00	0.33	0.19	0.00	0.04	0.01	33.38	0.00	0.00	33.48
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	42	13.79	0.01	13.81	1.38	0.01	1.40	0.63	0.00	0.08	0.04	119.00	0.00	0.00	119.28
Worker Vehicles	252	44.34	0.00	44.34	4.44	0.00	4.44	0.13	0.00	1.44	0.05	283.50	0.02	0.01	286.23
Fuel Trucks	1	0.20	0.00	0.20	0.02	0.00	0.02	0.01	0.00	0.00	0.00	1.70	0.00	0.00	1.70
On-site Emissions Subtotal		**538.58**	**35.10**	**573.68**	**68.97**	**32.29**	**101.26**	**617.06**	**1.01**	**342.69**	**64.72**	**86,378.69**	**8.79**	**3.94**	**87,772.92**
Off-site															
On-road Vehicles (unpaved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	451	186.41	0.20	186.61	18.67	0.19	18.86	10.95	0.02	2.03	0.77	1,882.36	0.04	0.02	1,888.01
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	2,369	778.03	0.78	778.80	78.04	0.74	78.78	35.75	0.06	4.78	2.21	6,711.36	0.10	0.05	6,727.66
Worker Vehicles	14,213	2,500.62	0.13	2,500.75	250.48	0.12	250.59	7.60	0.16	80.94	2.94	15,989.61	0.97	0.43	16,143.20
Fuel Trucks	34	11.11	0.01	11.13	1.11	0.01	1.13	0.51	0.00	0.07	0.03	95.88	0.00	0.00	96.11
On-road Vehicles (paved road)															
Aggregate Base Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Concrete Delivery Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Delivery Trucks	1,989	7.53	0.88	8.41	1.90	0.85	2.74	48.25	0.08	8.93	3.38	8,297.08	0.16	0.07	8,321.98
Tracker Deliveries Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Haul Trucks	1,831	4.46	0.60	5.06	1.19	0.57	1.76	27.64	0.05	3.69	1.71	5,188.22	0.08	0.04	5,200.82
Worker Vehicles	73,987	45.42	0.66	46.08	12.25	0.61	12.86	39.58	0.84	421.36	15.28	83,236.68	5.04	2.26	84,036.24
Fuel Trucks	26	0.06	0.01	0.07	0.02	0.01	0.03	0.39	0.00	0.05	0.02	74.12	0.00	0.00	74.30
Off-site Emissions Subtotal		**3,533.64**	**3.26**	**3,536.91**	**363.65**	**3.10**	**366.75**	**170.68**	**1.21**	**521.84**	**26.35**	**121,475.31**	**6.39**	**2.86**	**122,488.31**
Total Emissions In This Month (pounds)		**4,072.22**	**38.36**	**4,110.59**	**432.62**	**35.39**	**468.01**	**787.74**	**2.22**	**864.53**	**91.06**	**207,854.00**	**15.18**	**6.80**	**210,261.24**

APPENDIX B
PROJECT OPERATIONAL EMISSION ESTIMATIONS

Desert Quartzite Solar Project
Operation Emission Estimations
Emission Inventory Summary
Prepared by URS, September 2015

Project Operation Annual Emissions (ton/year)

Annual Emission (ton per year)		Emissions (tpy)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-site															
On-road Vehicles															
Deliveries Trucks	111	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.23
Water Haul Trucks	619	0.10	0.00	0.10	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.88
Worker Vehicles	365	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.21
On-site Emissions Subtotal		**0.16**	**0.00**	**0.16**	**0.02**	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**1.31**	**0.00**	**0.00**	**1.32**
Off-site															
On-road Vehicles (unpaved road)															
Deliveries Trucks	6,249	1.29	0.00	1.29	0.13	0.00	0.13	0.08	0.00	0.01	0.01	13.04	0.00	0.00	13.07
Water Haul Trucks	34,923	5.74	0.01	5.74	0.58	0.01	0.58	0.26	0.00	0.04	0.02	49.47	0.00	0.00	49.59
Worker Vehicles	20,586	1.81	0.00	1.81	0.18	0.00	0.18	0.01	0.00	0.06	0.00	11.58	0.00	0.00	11.69
On-road Vehicles (paved road)															
Deliveries Trucks	33,794	0.06	0.01	0.07	0.02	0.01	0.02	0.41	0.00	0.08	0.03	70.49	0.00	0.00	70.70
Water Haul Trucks	61,920	0.08	0.01	0.09	0.02	0.01	0.03	0.47	0.00	0.06	0.03	87.72	0.00	0.00	87.93
Worker Vehicles	127,750	0.04	0.00	0.04	0.01	0.00	0.01	0.03	0.00	0.36	0.01	71.86	0.00	0.00	72.55
Off-site Emissions Subtotal		**9.02**	**0.03**	**9.04**	**0.93**	**0.02**	**0.96**	**1.26**	**0.00**	**0.61**	**0.09**	**304.16**	**0.01**	**0.00**	**305.54**
Total Emissions (tons per year)		**9.17**	**0.03**	**9.20**	**0.95**	**0.02**	**0.97**	**1.26**	**0.00**	**0.61**	**0.09**	**305.47**	**0.01**	**0.00**	**306.86**

MDAQMD CEQA annual threshold (tpy)				15			15	25	25	100	25				100,000.00
				no			**no**	**no**	**no**	**no**	**no**				**no**

Project Federal General Conformity Compliance

Project Construction Total Direct and Indirect Emissions (ton/year)	Emissions (tpy)									
	Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG
Riverside County - MDAQMD										
Annual	9.17	0.03	9.20	0.95	0.02	0.97	1.26	0.00	0.61	0.09
Applicable *De Minimis* Levels			N/A			N/A	N/A	N/A	N/A	N/A
Exceed the threshold in any year (YES/NO)			**N/A**			**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Desert Quartzite Solar Project
Operation Emission Estimations
CONSTRUCTION PHASE TRIPS
Prepared by URS, September 2015

TABLE 1.1 OPERATION PHASE TRIPS - ESTIMATED OPERATION PHASE ONE-WAY TRIPS (PER YEAR)

Vehicles	# of trip
Deliveries Trucks	1,108
Water Haul Trucks	6,192
Worker Vehicles	3,650
Total vehicle trips	**10,950**

= 8.48 round trips per day

NOTES:

1. Assuming 4,000 gallon capacity water trucks.
2. The operational phase of the Project is expected to require up to 38 AF per year (AFY) of water.

TABLE 1.2 TRIP DISTANCE ESTIMATES

	Miles unpaved road, onsite parking area to site entrance (assumption)	Miles unpaved road, site entrance to paved road (eastbound 16th at Stephenson)	Miles paved road in MDAQMD area	Total one way distance (all in MDAQMD area), miles
Deliveries Trucks	0.1	5.64	24.86	30.5
Water Haul Trucks	0.1	5.64	4.36	10
Worker Vehicles	0.1	5.64	29.36	35

Desert Quartzite Solar Project
Operation Emission Estimations
Emission Factors
Prepared by URS, September 2015

1. Mobile Source (off-road Equipment and on-road vehicles) - Exhaust Emission Factors

				Emission Factors									
Equipment	**HP**	**EF source**	**EF source name (hp)**	**Exhausted PM_{10}**	**Exhausted $PM_{2.5}$**	**NO_x**	**SO_x**	**CO**	**ROG**	**CO_2**	**CH_4**	**N_2O**	**Total GHG - CO_2e**
On-road Vehicle - Running Exhaust (unit: lb/mile)													
Deliveries Trucks		EMFAC2014	T7 tractor construction	4.45E-04	4.25E-04	2.43E-02	3.98E-05	4.49E-03	1.70E-03	4.17E+00	7.89E-05	3.54E-05	4.18E+00
Water Haul Trucks		EMFAC2014	T6 Instate Construction Heavy	3.28E-04	3.14E-04	1.51E-02	2.70E-05	2.02E-03	9.34E-04	2.83E+00	4.34E-05	1.94E-05	2.84E+00
Worker Vehicles		EMFAC2014	LDA/LDT1/LDT2	8.89E-06	8.21E-06	5.35E-04	1.13E-05	5.70E-03	2.07E-04	1.13E+00	6.81E-05	3.05E-05	1.14E+00

NOTE:

1. Use aggregated fuel in EMFAC2014 for all vehicles.
2. All emission factors for on-road vehicles from EMFAC2014, except N2O EFs which are scaled from CH4.
3. Onsite speed is limited to 15 mph
   Offsite speed is limited to 55 mph, for freeway
   Offsite speed is limited to 40 mph, for local paved road
   Offsite speed is limited to 30 mph, for local unpaved road
4. Greenhouse Gas Global Warming Potential (GWP) - Table A-1 of 40 CFR Part 98 Subpart A
   - CO_2 GWP = 1
   - CH_4 GWP = 25
   - N_2O GWP = 298

2. Mobile Source (off-road Equipment and on-road vehicles) - Fugitive Dust Emission Factors

Unpaved Road Fugitive Dust Emissions

Emission Factor Equation:
(1) Travel on unpaved surfaces

$E = k * (s/12)^a * (W/3)^b * [(365 - P)/365]$

Source: EPA AP-42 Section 13.2.2 Unpaved Roads Equations 1a and 2
E = size-specific emission factor (lb/VMT)
k, a, b = empirical constants
8.5 s = surface material silt content (%) Table 13.2.2-1 Construction sites - Scraper routes
W = mean vehicle weight (tons)

constants

	$PM_{2.5}$	PM_{10}	Industrial Roads
k (lb/VMT)	0.15	1.5	
a	0.9	0.9	
b	0.45	0.45	

17 P = Mean number of days per year with at least 0.01 inches of precipitation (from WRCC (040924) BLYTHE, 1931-2006 average)
1 VMT/hr, assumption (each equipment in average)

	Weight (ton)	(1) Travel on unpaved surfaces			Sum Total Mitigated EF		
		$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)	Mitigation Efficiency	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)	Mitigation Efficiency
On-road Vehicle (on-site)							
Deliveries Trucks	20	0.25	2.46	83%	0.04	0.41	83%
Water Haul Trucks	12	0.20	1.96	83%	0.03	0.33	83%
Worker Vehicles	3	0.10	1.05	83%	0.02	0.18	83%
On-road Vehicle (off-site)							
Deliveries Trucks	20	0.25	2.46	83%	0.04	0.41	83%
Water Haul Trucks	12	0.20	1.96	83%	0.03	0.33	83%
Worker Vehicles	3	0.10	1.05	83%	0.02	0.18	83%

Paved Road Fugitive Dust Emissions

(1) Travel on paved road

$E = [k * (sL)^{0.91} * (W)^{1.02}] (1 - P/4N)$

Source: EPA AP-42 Section 13.2.1 Paved Roads Equation 2
E = particulate emission factor (lb/VMT),
k = particle size multiplier for particle size range and units of interest

0.06 — sL = road surface silt loading (grams per square meter) (g/m^2), — From AP-42 Table 13.2.1-2, ADT 5,000 to 10,000.

W = average weight (tons) of the vehicles traveling the road

	$PM_{2.5}$	PM_{10}
k (lb/VMT)	0.00054	0.0022

17 — P = Mean number of days per year with at least 0.01 inches of precipitation (from WRCC (040924) BLYTHE, 1931-2006 average)

365 — N = number of days in the year (averaging period)

	Weight (ton)	(1) Travel on paved road			Sum Total Mitigated EF		
		$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)	Mitigation Efficiency	$PM_{2.5}$ EF (lbs/VMT)	PM_{10} EF (lbs/VMT)	Mitigation Efficiency
On-road Vehicle							
Deliveries Trucks	20	0.0009	0.0036	0%	0.00	0.00	0%
Water Haul Trucks	12	0.0005	0.0021	0%	0.00	0.00	0%
Worker Vehicles	3	0.0001	0.0005	0%	0.00	0.00	0%

3. Fugitive Dust Mitigation Measures and Efficiencies

Area	Mitigation Measure	Control Efficiency
1. Construction Activities	Apply water every 3 hours to disturbed	61%
2. Construction traffic	Limit on-site vehicle speeds (on unpaved roads) to 15 mph by radar enforcement.	57%
3. Post-demolition stabilization	Apply dust suppressants (e.g., polymer emulsion) to disturbed areas upon	84%
4. Travel over unpaved roads	Apply chemical dust suppressant annually to unpaved parking	84%
5. Storage pile wind erosion	Water the storage pile by hand or apply cover when wind events are	90%
	Require construction of 3-sided enclosures with 50% porosity.	75%
Combination of 1, 2, and 3/4		97%
Combination of 1 and 2		83%

Source: SCAQMD Air Quality Analysis Handbook, 2012. Tables XI-A, XI-D, and XI-E.
Available from: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust

Desert Quartzite Solar Project
Operation Emission Estimations
Detailed Emission Inventory
Prepared by URS, September 2015

Equipment/Vehicle Type	Total VMT for on-road vehicles	Emissions (tons per year)													
		Fugitive Dust PM_{10}	Exhaust PM_{10}	Total PM_{10}	Fugitive Dust $PM_{2.5}$	Exhaust $PM_{2.5}$	Total $PM_{2.5}$	NOx	SOx	CO	ROG	CO_2	CH_4	N_2O	Total GHG - CO_2e
On-site															
On-road Vehicles															
Deliveries Trucks	111	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.23
Water Haul Trucks	619	0.10	0.00	0.10	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.88
Worker Vehicles	365	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.21
On-site Emissions Subtotal		**0.16**	**0.00**	**0.16**	**0.02**	**0.00**	**0.02**	**0.01**	**0.00**	**0.00**	**0.00**	**1.31**	**0.00**	**0.00**	**1.32**
Off-site															
On-road Vehicles (unpaved road)															
Deliveries Trucks	6,249	1.29	0.00	1.29	0.13	0.00	0.13	0.08	0.00	0.01	0.01	13.04	0.00	0.00	13.07
Water Haul Trucks	34,923	5.74	0.01	5.74	0.58	0.01	0.58	0.26	0.00	0.04	0.02	49.47	0.00	0.00	49.59
Worker Vehicles	20,586	1.81	0.00	1.81	0.18	0.00	0.18	0.01	0.00	0.06	0.00	11.58	0.00	0.00	11.69
On-road Vehicles (paved road)															
Deliveries Trucks	33,794	0.06	0.01	0.07	0.02	0.01	0.02	0.41	0.00	0.08	0.03	70.49	0.00	0.00	70.70
Water Haul Trucks	61,920	0.08	0.01	0.09	0.02	0.01	0.03	0.47	0.00	0.06	0.03	87.72	0.00	0.00	87.93
Worker Vehicles	127,750	0.04	0.00	0.04	0.01	0.00	0.01	0.03	0.00	0.36	0.01	71.86	0.00	0.00	72.55
Off-site Emissions Subtotal		**9.02**	**0.03**	**9.04**	**0.93**	**0.02**	**0.96**	**1.26**	**0.00**	**0.61**	**0.09**	**304.16**	**0.01**	**0.00**	**305.54**
Total Emissions (tons per year)		**9.17**	**0.03**	**9.20**	**0.95**	**0.02**	**0.97**	**1.26**	**0.00**	**0.61**	**0.09**	**305.47**	**0.01**	**0.00**	**306.86**