Air Quality Technical Report

for the

J Street Drain Project
Ventura County, California

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1.0 Introduction

This report presents an assessment of potential air quality impacts associated with the J Street Drain Project proposed by the Ventura County Watershed Protection District (District) in Ventura County, California. The J Street Drain is located within a Ventura County easement which includes the concrete channel, some box culverts under the roadways, and access road. The drain itself is located near the border between City of Oxnard and City of Port Hueneme. The proposed construction of the J Street Drain could potentially impact the land uses and roadways of both cities during construction activities.

The purpose of the proposed project is to provide flood protection to the 100-year flood level for the area surrounding J Street Drain. Protection from a 100-year flood is the standard set by the Federal Emergency Management Agency (FEMA) under the National Flood Insurance Program (NFIP). The need for such protection is evidenced by the studies that show the existing drain has the capacity to handle only a ten-year flood event without overtopping the channel. Without the increase in flood protection the local area would continue to be susceptible to flooding, as well as federal requirements to purchase flood insurance for properties within the 100-year flood zone defined by FEMA after they update existing flood maps for the project area in the future.

The proposed project involves converting the existing trapezoidal concrete channel into an open rectangular channel with a bottom approximately four feet deeper than the existing channel bottom. The existing trapezoidal channel would be widened and deepened to increase the capacity; the channel walls would be vertical with the top being an open channel. The existing box culverts under the street crossings and railroad crossing would be replaced by larger structures to improve flow conveyance. The existing concrete lining ends approximately 50 feet south of the Hueneme Drain Pump Station. Because the concrete lined portion of the channel invert would be lowered about 2.5 feet to create the required capacity, excavation would continue downstream towards the ocean. The finished invert would be daylighted via an earthen ramp to the lagoon at a 10:1 slope over a distance of up to 40 feet from the end of the existing concrete. A six- to eight-foot thick layer of four-ton rock riprap would be placed on the earthen ramp at the end of the concrete drain to dissipate energy flow.

The demolition of the existing drain and construction of the new, higher capacity drain would take place in phases. It is anticipated that the demolition and construction would start at the southern end of the drain, south of Hueneme Road and move northward in phases. The construction phases are anticipated as:

- Phase I–Downstream end of the Drain to north side of Hueneme Road (3430 lineal feet);
- Phase II–Hueneme Road to Pleasant Valley Road (2620 lineal feet);
- Phase III–Pleasant Valley Road to Yucca Street (4100 lineal feet); and
- Phase IV–Yucca Street to just north of Redwood Street (2680 lineal feet).

Each of these phases would occur independently rather than concurrently. A detailed description of construction activities required for the project is provided in Section 4.0. It is anticipated that maintenance of the reconstructed drain will be similar to the existing maintenance activities.

This evaluation addresses the potential for air emissions during construction and after full buildout of the project.

2.0 Existing Conditions

2.1 Regulatory Requirements

Air quality is defined by ambient air concentrations of specific pollutants identified by the United States Environmental Protection Agency (USEPA) to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several pollutants (called "criteria" pollutants). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere.

States that are designated nonattainment for the NAAQS are required to develop a State Implementation Plan (SIP), which outlines federally-enforceable rules, regulations, and programs designed to reduce emissions and bring the area into attainment of the NAAQS. In California, the California Air Resources Board (ARB) is the agency responsible for developing the SIP. The responsibility for developing plans and programs for each air basin has been delegated to the local agency responsible for attaining and maintaining air quality standards in that air basin.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. The ARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant.

The ARB is the state regulatory agency with authority to enforce regulations to both achieve and maintain the NAAQS and CAAQS. The ARB is responsible for the development, adoption, and enforcement of the state's motor vehicle emissions program, as well as the adoption of the CAAQS. The ARB also reviews operations and programs of the local air districts, and requires each air district with jurisdiction over a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS. The local air district has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. It is the responsibility of the Ventura County Air Pollution Control District (VCAPCD) to ensure that state and federal ambient air quality standards are achieved and maintained in Ventura County. Ventura County is part of the South Central Coast Air Basin (SCCAB), which includes the counties of Ventura, Santa Barbara, and San Luis Obispo.

Health-based air quality standards have been established by California and the federal government for the following criteria air pollutants: ozone (O_3), CO, NO_2, particulate matter with

a diameter of 10 microns or less (PM_{10}), particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). These standards were established to protect sensitive receptors from adverse health impacts due to exposure to air pollution. The California Ambient Air Quality Standards (CAAQS) are more stringent than the federal standards. California has also established standards for sulfates, visibility, hydrogen sulfide, and vinyl chloride. Hydrogen sulfide and vinyl chloride are currently not monitored in the Basin because these contaminants are not seen as a significant air quality problem. CAAQS and National Ambient Air Quality Standards (NAAQS) for each of these pollutants are shown in Table 1. The SCAB is currently considered a nonattainment area for the CAAQS and NAAQS for O_3, PM_{10}, $PM_{2.5}$, and CO. A brief description of the criteria pollutants follows.

Ozone. Ozone is considered a photochemical oxidant, which is a chemical that is formed when reactive organic gases (ROG) and nitrogen oxides, both byproducts of combustion, react in the presence of ultraviolet light. Ozone is present in relatively high concentrations in the Basin. Ozone is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to ozone.

Carbon monoxide. Carbon monoxide is a product of combustion, and the main source of carbon monoxide in the Basin is from motor vehicle exhaust. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease, and can also affect mental alertness and vision.

Nitrogen dioxide. NO_2 is also a by-product of fuel combustion, and is formed both directly as a product of combustion and in the atmosphere through the reaction of NO with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Fine particulate matter. Fine particulate matter, or PM_{10}, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Particulate matter in this size range has been

determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} arises from a variety of sources, including road dust, diesel exhaust, combustion, tire and break wear, construction operations, and windblown dust. PM_{10} can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. In 1997, the U.S. EPA proposed a new standard for $PM_{2.5}$, which is particulate matter with an aerodynamic diameter of 2.5 microns or less. These finer particulates are considered to have the potential to lodge deeper in the lungs.

Sulfur dioxide. SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead. Lead in the atmosphere occurs as particulate matter. Lead has historically been emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Lead has the potential to cause gastrointestinal, central nervous system, kidney, and blood diseases upon prolonged exposure. Lead is also classified as a probable human carcinogen.

The attainment status of Ventura County for each of the criteria pollutants described above is presented below in Table 2.

Table 1 Ambient Air Quality Standards						
POLLUTANT	AVERAGE TIME	CALIFORNIA STANDARDS		NATIONAL STANDARDS		
		Concentration	Measurement Method	Primary	Secondary	Measurement Method
Ozone (O_3)	1 hour	0.09 ppm (180 $\mu g/m^3$)	Ultraviolet Photometry	--	--	Ethylene Chemiluminescence
	8 hour	0.070 ppm (137 $\mu g/m^3$)		0.075 ppm (147 $\mu g/m^3$)	0.075 ppm (147 $\mu g/m^3$)	
Carbon Monoxide (CO)	8 hours	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Spectroscopy (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Spectroscopy (NDIR)
	1 hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm (56 $\mu g/m^3$	Gas Phase Chemiluminescence	0.053 ppm (100 $\mu g/m^3$)	0.053 ppm (100 $\mu g/m^3$)	Gas Phase Chemiluminescence
	1 hour	0.18 ppm (338 $\mu g/m^3$)		0.100 ppm (188 $\mu g/m^3$)	--	
Sulfur Dioxide (SO_2)	24 hours	0.04 ppm (105 $\mu g/m^3$)	Ultraviolet Fluorescence	--	--	Pararosaniline
	3 hours	--		--	0.5 ppm (1300 $\mu g/m^3$)	
	1 hour	0.25 ppm (655 $\mu g/m^3$)		75 ppb (189 $\mu g/m^3$)	--	
Respirable Particulate Matter (PM_{10})	24 hours	50 $\mu g/m^3$	Gravimetric or Beta Attenuation	150 $\mu g/m^3$	150 $\mu g/m^3$	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 $\mu g/m^3$		--	--	
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 $\mu g/m^3$	Gravimetric or Beta Attenuation	15 $\mu g/m^3$	--	Inertial Separation and Gravimetric Analysis
	24 hours	--		35 $\mu g/m^3$	--	
Sulfates	24 hours	25 $\mu g/m^3$	Ion Chromatography	--	--	--
Lead (Pb)	30-day Average	1.5 $\mu g/m^3$	Atomic Absorption	--	--	Atomic Absorption
	Calendar Quarter	--		1.5 $\mu g/m^3$	1.5 $\mu g/m^3$	
	Rolling 3-month Average	--		0.15 $\mu g/m^3$	0.15 $\mu g/m^3$	
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm (42 $\mu g/m^3$)	Ultraviolet Fluorescence	--	--	--
Vinyl Chloride	24 hours	0.010 ppm (26 $\mu g/m^3$)	Gas Chromatography	--	--	--

ppm= parts per million; $\mu g/m^3$ = micrograms per cubic meter; mg/m^3= milligrams per cubic meter

Source: California Air Resources Board 2011, www.arb.ca.gov.

Table 2 Ventura County Attainment Classification for Criteria Pollutants		
Pollutant	**CAAQS Attainment Classification**	**NAAQS Attainment Classification**
1-hr Ozone	Nonattainment	Rescinded
8-hr Ozone	Nonattainment	Moderate Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
PM_{10}	Nonattainment	Unclassified/Attainment
$PM_{2.5}$	Nonattainment	Unclassified/Attainment
Lead	Attainment	Attainment
Sulfates	Attainment	N/A
Hydrogen Sulfide	Unclassified	N/A
Vinyl Chloride	Unclassified	N/A

2.2 Regional Climate

Regional climate data in the area are collected at the Oxnard climate station (WRCC 2011). Annual average temperatures in the area range from an average minimum temperature of 50.0ºF to an average maximum temperature of 70.1ºF. January is the coolest month, with average minimum temperatures of 43.5°F. August is the warmest months in the area, with average maximum temperatures reaching 74.8°F. The climate of the project area is characterized as Mediterranean Dry-Summer Climate. The Mediterranean Dry-Summer Climate is known to be located in mid-latitude regions, with cool, wet winters and warm, dry summers.

2.3 Existing Air Quality

The closest ambient air quality monitoring station to the project is the El Rio monitoring station located at Rio Mesa School in Oxnard, which measures O_3, NO_2, PM_{10} and $PM_{2.5}$. Ambient concentrations of criteria pollutants measured at these monitoring stations during the period 2007-2009 are presented in Table 3. Ambient air concentrations were compared with the CAAQS and NAAQS. The data indicate that the area is in compliance with both CAAQS and NAAQS for NO_2. The maximum measured concentrations of NO_2 each year were less than the

0.18-ppm one-hour CAAQS, the annual average 0.030-ppm CAAQS, the 0.100-ppm one-hour NAAQS, and the annual average 0.053-ppm NAAQS.

One exceedance each of the federal 24-hour $PM_{2.5}$ and PM_{10} standards were recorded in 2007; however, those exceedances occurred during the southern California fire events of 2007. One exceedance of the federal 8-hour ozone standard was recorded at the El Rio monitoring station in 2009. The station regularly measures exceedances of the state PM_{10} standard.

Table 3
Ambient Background Concentrations
(ppm unless otherwise indicated)

Pollutant	Averaging Time	2007	2008	2009	2010	Most Stringent Ambient Air Quality Standard	Monitoring Station
Ozone	8 hour	0.072	0.074	0.077	0.072	0.075	El Rio
	1 hour	0.089	0.086	0.099	0.083	0.09	El Rio
PM_{10}	Annual	29.7 µg/m^3	26.2 µg/m^3	25.6 µg/m^3	21.7 µg/m^3	20 µg/m^3	El Rio
	24 hour	248 µg/m^3	79.8 µg/m^3	99.9 µg/m^3	59.9 µg/m^3	50 µg/m^3	El Rio
$PM_{2.5}$	Annual	10.6 µg/m^3	10.0 µg/m^3	10.2 µg/m^3	8.52 µg/m^3	12 µg/m^3	El Rio
	24 hour	39.9 µg/m^3	23.4 µg/m^3	19.7 µg/m^3	21.4 µg/m^3	35 µg/m^3	El Rio
NO_2	Annual	0.010	0.008	0.008	0.007	0.030	El Rio
	1 hour	0.053	0.052	0.051	0.060	0.100	El Rio

NA = Data not available
Source: http://www.arb.ca.gov/adam/topfour/topfourdisplay.php

2.4 Toxic Air Contaminants

Cancer Risk. One of the primary health risks of concern due to exposure to toxic air contaminants (TACs) is the risk of contracting cancer. The carcinogenic potential of TACs is a particular public health concern because it is currently believed by many scientists that there is no "safe" level of exposure to carcinogens; that is, any exposure to a carcinogen poses some risk of causing cancer. Health statistics show that one in four people will contract cancer over their

lifetime, or 250,000 in a million, from all causes, including diet, genetic factors, and lifestyle choices.

Noncancer Health Risks. Unlike carcinogens, for most noncarcinogens it is believed that there is a threshold level of exposure to the compound below which it will not pose a health risk. The California Environmental Protection Agency (CalEPA) and California Office of Environmental Health Hazard Assessment (OEHHA) have developed reference exposure levels (RELs) for noncarcinogenic TACs that are health-conservative estimates of the levels of exposure at or below which health effects are not expected. The noncancer health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

3.0 Thresholds of Significance

The State of California has developed guidelines to address the significance of air quality impacts based on Appendix G of the State CEQA Guidelines which provides guidance that a project would have a significant environmental impact if it would:

1. Conflict or obstruct the implementation of the applicable air quality plan (in this case, the VCAPCD's 2007 Air Quality Management 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 non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
4. Expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations; or
5. Create objectionable odors affecting a substantial number of people.

The significance of impacts was evaluated based on the guidance in the *Ventura County Air Quality Assessment Guidelines* (VCAPCD 2003). The *Ventura County Air Quality Assessment Guidelines* is an advisory document that provides lead agencies, consultants, and project applicants with a framework and uniform methods for preparing air quality evaluations for environmental documents. The Guidelines recommend specific criteria and threshold levels for determining whether a proposed project may have a significant adverse air quality impact. The Guidelines also provide mitigation measures that may be useful for mitigating the air quality impacts of proposed projects. As stated in the document, it should be noted that these are guidelines only, and their use is not required or mandated by the VCAPCD.

According to the Guidelines, the following would result in a significant adverse impact on air quality within Ventura County:

- A project with emissions greater than 25 pounds per day of ROG or NOx.
- A project that would result in an exceedance of an air quality standard (state or federal).
- A project that would emit more than 2 pounds per day of ROG or NOx and is inconsistent with the AQMP.
- A project that may be reasonably expected to generate fugitive dust emissions in such quantities as to cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property (see California Health and Safety Code, Division 26, §41700) will have a significant adverse air quality impact.
- A project with a toxic air contaminant impact of greater than 10 in a million cancer risk or a hazard index greater than 1.0.
- A project that exposes a considerable number of persons to objectionable odors.

The impacts associated with construction and operation of the J Street Drain Project were evaluated for significance based on these significance criteria.

4.0 Impacts

The proposed project includes both construction and operational impacts. Construction impacts include emissions associated with the construction of the project. Operational impacts include emissions associated with maintenance activities for the J Street Drain. The significance thresholds identified in Section 3.0 are discussed below.

4.1 Consistency with Air Quality Management Plan

The most recently adopted air quality plan is the 2007 Air Quality Management Plan developed by the VCAPCD. This plan is Ventura County's portion of the SIP, which outlines the VCAPCD's plans for attainment of the federal 8-hour ozone standard. The AQMP accommodates population growth and transportation projections based on the projections made by the Southern California Association of Governments (SCAG) for growth in the region. Projects that are consistent with employment and population forecasts made by SCAG are consistent with the emissions budgets contained within the AQMP. Also, projects that are consistent with the SIP rules (i.e., the federally-approved rules and regulations adopted by the VCAPCD) are consistent with the SIP. Thus projects would be required to conform with measures adopted in the AQMP, including undergoing New Source Review for sources subject to permitting with the VCAPCD.

The main source of emissions associated with the J Street Drain Project occur during construction and, as such, are temporary emissions. The AQMP requires construction equipment and on-road mobile sources such as trucks and worker vehicles to comply with state emission standards promulgated by the ARB. Equipment and vehicles operating within the state of California are required to comply with applicable emission standards and, as such, will comply with the AQMP. There are no other AQMP measures that are applicable to construction projects.

Because the project will comply with AQMP measures to reduce construction emissions, and because the project's impacts are temporary, the project will not conflict with or obstruct implementation of the AQMP. Impacts are less than significant.

4.2 Air Quality Standard Violation

4.2.1 Construction

The demolition of the existing drain and construction of the new, higher capacity drain would take place in phases. It is anticipated that the demolition and construction would start at the southern end of the drain, south of Hueneme Road and move northward in phases. The construction phases are anticipated as: Phase I–Downstream end of the Drain to north side of Hueneme Road (3430 lineal feet); Phase II–Hueneme Road to Pleasant Valley Road (2620 lineal feet); Phase III–Pleasant Valley Road to Yucca Street (4100 lineal feet); and Phase IV–Yucca Street to just north of Redwood Street (2680 lineal feet). Each of these phases would occur independently rather than concurrently. Additionally, during each of these phases, culverts under existing facilities will be replaced. The culverts to be replaced include: the Ventura County Railroad (VCRR) crossing, Hueneme Road, Clara Street, Pleasant Valley Road, Bard Road, Yucca Street, Teakwood Street, and Redwood Street. During the work on these culvert crossings vehicle access would be maintained for Hueneme Road and Pleasant Valley Road. The other crossings would be closed during construction and local traffic detoured around the construction area. Local access for residents would be maintained throughout the project, even if the nearest channel crossing is closed for construction.

It should be noted that construction will take place from within the District's easement with the potential of the work area extending beyond the easement in the southern area near the lagoon. Construction staging areas, which are located northeast of Perkins Road and west of the downstream terminus of J Street Drain, are currently vacant, and were previously disturbed. Trench shoring must occur along Building 7 of the Surfside III Condominiums, but is not required for the remainder of this residential community. If trench shoring is not used along the remainder of the condominium complex, the excavation area would need to be wider,

necessitating temporary removal of some private landscaping. In addition, the current fence, which does not coincide with the property boundary, will be removed during construction and relocated to the property line at the end of the project. Incursions into private property would allow the project to proceed without the need for extensive shoring of the excavations, therefore reducing the potential for vibration impacts to the adjacent areas. Any disruptions to private property are required to be repaired and/or replaced at the end of the project under agreement between the District and the property owner.

The initial construction activities include installation of groundwater dewatering wells, a coffer dam, and channel flow bypass. The groundwater dewatering wells will be approximately 15 to 20 feet deep, and placed along the work area of the J Street Drain. These wells will be installed and removed as construction moves upstream. Once installed, these wells will be attached to temporary pumps to extract groundwater for discharge into the Perkins Drain. The groundwater will be tested in accordance with the requirements of the Regional Water Quality Control Board (RWQCB) prior to placement into Perkins Drain. If the pumped groundwater is determined to be acceptable, it would then be allowed to be discharged. This will ensure that no surface water contamination would result from dewatering.

The electric power to run these pumps will be supplied from the existing Hueneme Drain Pump Station. The rate of groundwater pumping would be at the discretion of the project contractor, though it is recommended that the groundwater level should be two feet below the construction work area.

A coffer dam will be placed across the channel at the south end of the construction area. The coffer dam will block tidal flow into the work area. The exact location of the dam will be dependant on the project contractor but anticipated to be within 200 feet of the end of the concrete. Fish seining will take place to capture and relocate the endangered tidewater goby, as well as any additional native fish, first outside the proposed coffer dam work area and later, after the coffer dam is in place, to areas directly downstream of the coffer dam. Block nets would be installed immediately upstream and downstream of the proposed coffer dam site to isolate it, and all native fish relocated beyond the downstream net before coffer dam installation begins. This

work will be conducted by approved, qualified biologists who will verify that all fish have been removed from the work area prior to the start of further construction.

A diversion will be installed to allow for any channel flow to bypass the construction area and enter the Perkins Drain. In addition, the Hueneme Drain Pump Station will pump water from the Hueneme Drain across the J Street Drain to the Perkins Drain during construction at the south end of Phase I.

Once the initial construction activities of installation of groundwater wells, coffer dam, and channel bypass are completed, fish remaining within the channel section upstream of the coffer dam can be relocated and demolition can begin. Demolition will initially start with adjacent fencing removal and landscape removal if necessary. After the permanent fencing is removed, temporary fencing will be installed along adjacent properties to limit access to the work area and ensure public safety. Demolition will consist of utilizing heavy equipment to break up and remove the concrete from the existing drain. Access to the area south of Hueneme Road will be from Hueneme Road via the District maintenance road on the east side of the drain. The contractor may decide to use the drain itself as an access way after entering the District right-of-way at Hueneme Road. The concrete will be broken on site for transport but the contractor will be required to find an appropriate location to grind the concrete further for appropriate recycling (as required by Ventura County ordinances).

After the concrete is removed, existing soil will be excavated to the appropriate dimensions for safe shoring (if necessary) and proper installation of subdrains and forms for the new drain. The excavated material will be removed by the contractor and hauled away from the site via a City-approved haul route (which is dependant on the ultimate location secured by the contractor). Some soils may remain on site for backfilling once the new drain is installed. Materials, including subdrain materials, reinforcing bar, and the concrete for the new drain will be delivered to the site via the approved access route from Hueneme Road. The work will only occur during hours approved by the City of Oxnard, which are anticipated to be from 7 am to 7 pm on weekdays.

Once each phase of the new drain is complete, the permanent perimeter fencing will be reinstalled. Any landscaping damaged outside of District easement on private property, will be replaced. Where the adjacent property is owned by the City, the landscaping will be replaced by the City under agreement with the District. Maintenance of the adjacent landscaping is the responsibility of the local jurisdiction once the materials are installed.

Emissions from the construction phase of the project were estimated based on the project description and construction equipment requirements and schedule. Construction of the project would commence in the spring of 2013. Construction is anticipated to proceed as follows:

- Phase I (Ocean to Hueneme Road) Spring 2013
- Phase II (Hueneme Rd. to Pleasant Valley Rd.) Spring 2015 estimate
- Phase III (Pleasant Valley Rd. to Yucca St.) Spring 2017 estimate
- Phase IV (Yucca St. to Redwood St.) Spring 2019 estimate

Heavy construction equipment requirements for each phase of construction include the following: Excavator, Hydraulic breaker, De-watering pumps, Dump/Haul trucks, Sweeper, Motor grader, Compaction equipment, Crawler dozer, Wheel loader, Concrete trucks, Asphalt paver.

Construction emissions were estimated using the URBEMIS Model, Version 9.2.4 (Rimpo and Associates 2007), based on the assumed construction schedule. The table presents the maximum daily emissions. It was assumed that the initial site preparation would include installation of dewatering wells, construction of the coffer dam and channel bypass, demolition of the existing concrete lining/asphalt pavement and drain, excavation of the channel, and hauling away of broken concrete and excess earth; the trenching activities would involve excavation to prepare for installation of the new drain, and the paving would involve backfilling and replacement of concrete lining and asphalt paving. Because of the linear nature of the project, it was assumed that construction would start at one end and continue to the end of the phase. As stated in the project description, each phase would occur independently and would not be concurrent. It was assumed that the site would be watered three times daily to control fugitive dust emissions.

Tables 4a through 4d present the estimated emissions for each phase of construction for the J Street Drain. Refer to Appendix A for URBEMIS outputs.

Table 4a – Phase I
Estimated Construction Emissions – J Street Drain Project

Emission Source	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Total Construction Emissions, lbs/day						
Site Preparation						
Fugitive Dust - Excavation	-	-	-	-	15.60	3.26
Offroad Diesel	15.63	128.97	57.32	-	5.69	5.23
Onroad Diesel (Haul truck trips)	0.67	9.26	3.33	0.02	0.41	0.34
Worker Trips	0.10	0.18	3.41	0.00	0.03	0.02
TOTAL	**16.40**	**138.41**	**64.06**	**0.02**	**21.73**	**8.85**
Regional Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*Yes*	*No*	*No*	*No*	*No*
Excavation						
Trenching Offroad Diesel	0.62	4.69	3.26	-	0.27	0.25
Trenching Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00
TOTAL	**0.63**	**4.70**	**3.45**	**0.00**	**0.27**	**0.25**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Paving						
Asphalt Offgassing	0.04	-	-	-	-	-
Asphalt Offroad Diesel	4.22	26.93	16.60	0.00	2.20	2.03
Asphalt Onroad Diesel (Haul truck trips)	0.01	0.08	0.03	0.00	0.00	0.00
Asphalt Worker Trips	0.03	0.06	1.14	0.00	0.01	0.01
TOTAL	**4.30**	**27.07**	**17.77**	**0.00**	**2.21**	**2.04**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*Yes*	*No*	*No*	*No*	*No*
Total Simultaneous Emissions	**21.33**	**170.18**	**85.28**	**0.02**	**24.21**	**11.14**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*Yes*	*No*	*No*	*No*	*No*

Table 4b – Phase II
Estimated Construction Emissions – J Street Drain Project

Emission Source	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Total Construction Emissions, lbs/day						
Site Preparation						
Fugitive Dust - Excavation	-	-	-	-	11.70	2.44
Offroad Diesel	13.27	101.18	49.71	-	4.43	4.07
Onroad Diesel (Haul truck trips)	0.58	7.16	2.68	0.02	0.33	0.26
Worker Trips	0.08	0.14	2.77	0.00	0.03	0.02
TOTAL	**13.93**	**108.48**	**55.16**	**0.02**	**16.49**	**6.79**
Regional Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*Yes*	*No*	*No*	*No*	*No*
Excavation						
Trenching Offroad Diesel	0.56	4.05	3.24	-	0.22	0.20
Trenching Worker Trips	0.00	0.01	0.16	0.00	0.00	0.00
TOTAL	**0.56**	**4.06**	**3.40**	**0.00**	**0.22**	**0.20**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Paving						
Asphalt Offgassing	0.03	-	-	-	-	-
Asphalt Offroad Diesel	3.68	23.94	16.35	0.00	1.88	1.73
Asphalt Onroad Diesel (Haul truck trips)	0.00	0.05	0.02	0.00	0.00	0.00
Asphalt Worker Trips	0.03	0.06	0.98	0.00	0.01	0.01
TOTAL	**3.74**	**24.05**	**17.35**	**0**	**1.89**	**1.74**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Total Simultaneous Emissions	**18.23**	**136.59**	**75.91**	**0.02**	**18.6**	**8.73**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*Yes*	*No*	*No*	*No*	*No*

Table 4c – Phase III
Estimated Construction Emissions – J Street Drain Project

Emission Source	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Total Construction Emissions, lbs/day						
Site Preparation						
Fugitive Dust - Excavation	-	-	-	-	19.50	4.07
Offroad Diesel	11.27	77.65	47.59	-	3.39	3.12
Onroad Diesel (Haul truck trips)	0.47	5.57	2.18	0.02	0.27	0.21
Worker Trips	0.07	0.12	2.39	0.00	0.03	0.02
TOTAL	**11.81**	**83.34**	**52.16**	**0.02**	**23.19**	**7.42**
Regional Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*Yes*	*No*	*No*	*No*	*No*
Excavation						
Trenching Offroad Diesel	0.47	3.21	3.24	-	0.17	0.16
Trenching Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00
TOTAL	**0.47**	**3.22**	**3.38**	**0.00**	**0.17**	**0.16**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Paving						
Asphalt Offgassing	0.04	-	-	-	-	-
Asphalt Offroad Diesel	3.18	20.49	16.14	0.00	1.53	1.41
Asphalt Onroad Diesel (Haul truck trips)	0.01	0.06	0.02	0.00	0.00	0.00
Asphalt Worker Trips	0.02	0.04	0.85	0.00	0.01	0.01
TOTAL	**3.25**	**20.59**	**17.01**	**0.00**	**1.54**	**1.42**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Total Simultaneous Emissions	**15.53**	**107.15**	**72.55**	**0.02**	**24.9**	**9.00**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*Yes*	*No*	*No*	*No*	*No*

Table 4d – Phase IV Estimated Construction Emissions – J Street Drain Project						
Emission Source	**ROG**	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Total Construction Emissions, lbs/day						
Site Preparation						
Fugitive Dust - Excavation	-	-	-	-	12.01	2.51
Offroad Diesel	9.97	61.27	46.57	-	2.68	2.46
Onroad Diesel (Haul truck trips)	0.41	4.57	1.86	0.02	0.23	0.17
Worker Trips	0.06	0.10	2.08	0.00	0.03	0.02
TOTAL	**10.44**	**65.94**	**50.51**	**0.02**	**14.95**	**5.16**
Regional Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*Yes*	*No*	*No*	*No*	*No*
Excavation						
Trenching Offroad Diesel	0.40	2.46	3.24	-	0.13	0.12
Trenching Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00
TOTAL	**0.40**	**2.47**	**3.36**	**0.00**	**0.13**	**0.12**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Paving						
Asphalt Offgassing	0.03	-	-	-	-	-
Asphalt Offroad Diesel	2.77	17.51	16.00	0.00	1.27	1.17
Asphalt Onroad Diesel (Haul truck trips)	0.00	0.03	0.01	0.00	0.00	0.00
Asphalt Worker Trips	0.02	0.04	0.73	0.00	0.01	0.01
TOTAL	**2.82**	**17.58**	**16.74**	**0**	**1.28**	**1.18**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*No*	*No*	*No*	*No*	*No*
Total Simultaneous Emissions	**13.66**	**85.99**	**70.61**	**0.02**	**16.36**	**6.46**
Significance Criteria	25	25	N/A	N/A	N/A	N/A
Significant?	*No*	*Yes*	*No*	*No*	*No*	*No*

As shown in Tables 4a through 4d, emissions of all criteria pollutants during all four phases would be below the VCAPCD's significance thresholds for ROGs, but above the threshold for NOx. Because of the low level of the emissions threshold, any project that is required to utilize heavy construction equipment would exceed the 25 lb/day threshold. The 2 lb/day threshold does not apply because the project is consistent with the AQMP.

To reduce construction emissions to the extent feasible, project construction would implement the following fugitive dust best available control measures to reduce emissions:

- The Project applicant shall water exposed surfaces three times daily on active areas.
- The Project applicant shall ensure that all trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard.

- The Project applicant shall ensure that a reduced speed on unpaved roads shall be limited to 15 miles per hour or less.
- The Project applicant shall manage haul road dust through the use of watering at least three times daily.

With implementation of dust control measures, the project would not generate fugitive dust emissions in such quantities as to cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which may endanger the comfort, repose, health, or safety of any such person or the public, or which may cause, or have a natural tendency to cause, injury or damage to business or property. Fugitive dust impacts will therefore be less than significant.

Emissions of NOx would be above the 25 lb/day threshold; however, as stated in the VCAPCD Guidelines on pages 5-3 & 5-4, "construction-related emissions (including portable engines and portable engine-driven equipment subject to the ARB's Statewide Portable Equipment Registration Program, and used for construction operations or repair and maintenance activities) of ROC and NOx are not counted towards the two significance thresholds, since these emissions are temporary. However, construction-related emissions should be mitigated if estimates of ROC and NOx emissions from the heavy-duty construction equipment anticipated to be used for a particular project exceed the 5 pounds per day threshold in the Ojai Planning Area, or the 25 pounds per day threshold in the remainder of the county." Because the emissions are associated with construction, they are not counted toward the significance thresholds, and impacts are less than significant.

4.2.2 Operational Impacts

Operational impacts associated with the Project would be associated with ongoing maintenance activities. It is anticipated that maintenance of the reconstructed drain will be similar to the existing maintenance activities. In order to programmatically address District maintenance activities, a Final Program Environmental Impact Report (EIR) for Environmental Protection Measures for the Ongoing Routine Operations and Maintenance Program was certified in May

2008. The Environmental Protection Measures for the Ongoing Routine Operations and Maintenance Program proposed by the District aim to reduce the current administrative process to comply with agreements and permits necessary for the maintenance activities at the District's facilities. Currently, many of the District's facility maintenance activities occur in drainages, watercourses, creeks, basins, and water bodies where such activities are regulated by several state and federal agencies. Typical maintenance activities include sediment removal and vegetation control to maintain capacity within the facility. The modification to the bed, bank, and/or vegetation in a natural drainage (and certain man-made drainages) is regulated by the California Department of Fish and Game (CDFG) under Section 1600 et seq. of the Fish and Game Code.

Such modifications require a Streambed Alteration Agreement. Activities that result in the discharge of dredged or fill material in watercourses (such as bank stabilization and excavation) are also regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA). Issuance of a 404 permit also requires a 401 Water Quality Certification by the RWQCB.

Prior to this EIR and the subsequent permits that will be required for this project, the District acquired the above agreements and permits on an as-needed basis for individual maintenance activities and facilities. With the proposed program, the District seeks authorization for the entire maintenance program, reducing District and permitting agency administrative efforts, and providing a more comprehensive and effective basis for protecting environmental resources. Consequently, utilizing the results of the environmental analyses in that Program EIR, the District requested long-term permits and approvals with durations of five years or more that would include all regulated activities, include a streamlined administrative approval process, and provide predictability and certainty on environmental protection measures.

In order to acquire long-term permits, the District has committed to incorporating various environmental protection measures into its ongoing maintenance program that would reduce incidental effects of the maintenance program on the environment and meet the requirements of the state and federal permitting agencies. The environmental protection measures are called

environmental Best Management Practices (BMPs). These BMPs have been carried forward in to this EIR. The BMPs that apply to air quality impacts include the following measures, which are part of the VCAPCD's Model Fugitive Dust Mitigation Plan:

- The areas disturbed at any one time by clearing, grading, earth moving, or excavation operations shall be minimized to prevent excessive amounts of dust.
- Pre-grading/excavation activities shall include watering the area to be graded or excavated before commencement of grading or excavation operations. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during earthmoving, grading, and excavation activities.
- All trucks shall be required to cover their loads as required by California Vehicle Code §23114.
- All graded and excavated material, exposed soil areas, including unpaved parking and staging areas, and other active portions of the construction site, including unpaved on site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll-compaction as appropriate. Watering shall be done as often as necessary and reclaimed water shall be used whenever possible.
- Graded and/or excavated inactive areas of the construction site shall be monitored by the District's operation and maintenance staff at least weekly for dust stabilization. Soil stabilization methods, such as water and roll-compaction, and environmentally safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area should be periodically treated with environmentally-safe dust suppressants.
- During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on site activities and operations from being a nuisance or hazard, either on site or off site. The District staff shall use his/her discretion in conjunction with the APCD in determining when winds are excessive.
- Rumble strips or track out devices shall be installed where vehicles enter and exit unpaved roads onto paved road, or wash off trucks and any other equipment leaving the site.
- All on site construction roads that have a daily traffic volume of more than 50 daily trips shall be stabilized as to minimize transport of earthen material from the site.
- Open material stockpiles shall be roller compacted, periodically watered, or treated with appropriate dust suppressants.
- There shall be at least one qualified District staff on site each work day to monitor the provisions of the Fugitive Dust Mitigation Plan and any other applicable fugitive dust rules, ordinances, or conditions.
- Personnel involved in grading operations shall be advised to wear respiratory protection in accordance with California Division of Occupational Safety and Health Regulations.

- All project construction operations shall be conducted in compliance with all applicable APCD Rules and Regulations with emphasis on Rule 50 (Opacity) and Rule 51 (Nuisance).

Maintenance activities associated with the proposed J Street Drain would be similar to the activities currently taking place for the existing drain maintenance. There would be a slight increase in maintenance trips due to the implementation of the BEMP, but these emissions would not be above the significance thresholds on a daily basis. Therefore, no new impacts would result from the proposed drain maintenance activities during project operation. As the Program EIR BMPs would apply to the existing District maintenance activities, the same BMPs would apply to the operation/ maintenance activities of the proposed project. Nevertheless, the environmental discussion of this EIR will include operational maintenance discussion and associated BMPs per the District's Ongoing Routine Operations and Maintenance Program for informational purposes.

4.3 Cumulatively Considerable Impacts

As discussed above, Ventura County is a nonattainment area for the state and federal ozone standards, and for the state PM_{10} and $PM_{2.5}$ standards. The adopted strategies and methods for improving and maintaining the County's air quality are presented in the AQMP.

The J Street Drain Project will result in emissions of nonattainment pollutants during construction activities. These activities will be temporary in nature, and will therefore not have a long-term cumulative impact on the air quality in Ventura County. The project will be consistent with the measures in the AQMP that are designed to reduce air emissions, and will also implement the BMPs that have been identified by the District in the Program EIR. Accordingly, the project will not result in a cumulatively considerable net increase of nonattainment pollutants.

4.4 Exposure of Sensitive Receptors

The main toxic air contaminant that would be emitted during construction of the J Street Drain would be diesel exhaust particulate matter. Diesel exhaust particulate matter is known to the

state of California as carcinogenic compounds. The risks associated with exposure to substances with carcinogenic effects are typically evaluated based on a lifetime of chronic exposure, which is defined in the California Air Pollution Control Officers' Association (CAPCOA) Air Toxics "Hot Spots" Program Risk Assessment Guidelines (CAPCOA 1993) as 24 hours per day, 7 days per week, 365 days per year, for 70 years. Diesel exhaust particulate matter would be emitted during the construction period assumed for the Project from heavy equipment used in the construction process. Because of the short-term nature of project construction, and because of the transient nature of the construction for the J Street Drain, diesel exhaust emissions will be not concentrated in any one location for a substantial period of time, and sensitive receptors would not be exposed to chronic emissions from the project. Impacts to sensitive receptors would therefore not result in a toxic air contaminant impact of greater than 10 in a million cancer risk or a hazard index greater than 1.0. The J Street Drain Project will therefore not expose sensitive receptors to substantial pollutant concentrations. This impact is less than significant.

4.5 Odor Impacts

The *Ventura County Air Quality Assessment Guidelines* identify certain land uses as sources of odors. These land uses include the following:

- Wastewater Treatment Facilities
- Sanitary Landfills
- Transfer Stations
- Composting Facilities
- Asphalt Batch Plants
- Paint and Coating Operations
- Fiberglass Operations
- Food Processing Facilities
- Feed Lots/Dairies
- Petroleum Extraction, Transfer, Processing, and Refining Operations and Facilities
- Chemical Manufacturing Operations and Facilities
- Rendering Plants

The Project does not propose any of these stationary sources. Construction may involve paving of areas with asphalt, which could result in some temporary odor sources. It is anticipated, however, that any such operations would be temporary and would not affect a substantial number of people. Odor impacts are less than significant.

5.0 Summary and Conclusions

In summary, the proposed project would result in emissions of air pollutants for both the construction phase and operational phase of the project. The air quality impact analysis evaluated the following air quality issues, and made the following conclusions:

1. The project will not conflict or obstruct the implementation of the Air Quality Management Plan.
2. The project's construction emissions exceed the daily emission threshold of 25 lbs/day for NOx; however, as stated in the VCAPCD Guidelines on pages 5-3 & 5-4, "construction-related emissions (including portable engines and portable engine-driven equipment subject to the ARB's Statewide Portable Equipment Registration Program, and used for construction operations or repair and maintenance activities) of ROC and NOx are not counted towards the two significance thresholds, since these emissions are temporary. However, construction-related emissions should be mitigated if estimates of ROC and NOx emissions from the heavy-duty construction equipment anticipated to be used for a particular project exceed the 5 pounds per day threshold in the Ojai Planning Area, or the 25 pounds per day threshold in the remainder of the county." Because the emissions are associated with construction, they are not counted toward the significance thresholds, and impacts are less than significant.
3. The project will not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
4. The project will not expose sensitive receptors to substantial pollutant concentrations.
5. The project will not create objectionable odors affecting a substantial number of people.

6.0 References

California Air Resources Board. 2007. EMFAC2007 Model.

Rimpo and Associates. 2007. URBEMIS Model, Version 9.2.4.

University of California Davis. 1998. *Transportation Project-Level Carbon Monoxide Protocol*.

Ventura County Air Pollution Control District. 2003. *Ventura County Air Quality Assessment Guidelines*. October

Ventura County Air Pollution Control District. 2008. *Ventura County Air Quality Management Plan*. May.

Western Regional Climate Center. 2011. Climate data for Oxnard, Station No. 046569.

Appendix A

URBEMIS Model Outputs

2/2/2011 5:13:45 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Urbemis\Urbemis 9.2.2\Projects\J Street Drain.urb924

Project Name: J Street Drain

Project Location: Ventura County APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	21.34	170.18	85.28	0.02	40.10	8.52	48.62	8.39	7.84	16.23	22,090.71
2012 TOTALS (lbs/day mitigated)	21.34	170.18	85.28	0.02	15.70	8.52	24.22	3.29	7.84	11.13	22,090.71
2013 TOTALS (lbs/day unmitigated)	20.20	157.48	83.03	0.02	40.10	8.01	48.11	8.39	7.37	15.75	22,090.77
2013 TOTALS (lbs/day mitigated)	20.20	157.48	83.03	0.02	15.70	8.01	23.71	3.29	7.37	10.66	22,090.77
2014 TOTALS (lbs/day unmitigated)	18.21	136.58	75.91	0.02	30.09	6.80	36.90	6.30	6.26	12.55	21,252.98
2014 TOTALS (lbs/day mitigated)	18.21	136.58	75.91	0.02	11.79	6.80	18.60	2.48	6.26	8.73	21,252.98
2015 TOTALS (lbs/day unmitigated)	16.76	122.95	74.19	0.02	30.09	6.07	36.16	6.30	5.58	11.88	21,253.02
2015 TOTALS (lbs/day mitigated)	16.76	122.95	74.19	0.02	11.79	6.07	17.86	2.48	5.58	8.06	21,253.02
2016 TOTALS (lbs/day unmitigated)	15.52	107.15	72.56	0.02	50.09	5.31	55.40	10.47	4.88	15.35	20,895.09

2016 TOTALS (lbs/day mitigated)	15.52	107.15	72.56	0.02	19.59	5.31	24.90	4.10	4.88	8.98	20,895.09
2017 TOTALS (lbs/day unmitigated)	14.59	95.84	71.68	0.02	50.09	4.88	54.98	10.47	4.49	14.96	20,895.06
2017 TOTALS (lbs/day mitigated)	14.59	95.84	71.68	0.02	19.59	4.88	24.48	4.10	4.49	8.59	20,895.06
2018 TOTALS (lbs/day unmitigated)	13.67	85.99	70.61	0.02	30.89	4.27	35.16	6.46	3.92	10.39	20,888.27
2018 TOTALS (lbs/day mitigated)	13.67	85.99	70.61	0.02	12.11	4.27	16.37	2.54	3.92	6.46	20,888.27
2019 TOTALS (lbs/day unmitigated)	12.79	77.00	70.13	0.02	30.89	3.91	34.80	6.46	3.59	10.06	20,888.26
2019 TOTALS (lbs/day mitigated)	12.79	77.00	70.13	0.02	12.11	3.91	16.01	2.54	3.59	6.13	20,888.26

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/2/2012-1/31/2012 Active Days: 26	16.41	138.41	64.06	0.02	40.09	6.04	46.13	8.38	5.56	13.94	18,909.43
Mass Grading 01/01/2012-12/31/2013	16.41	138.41	64.06	0.02	40.09	6.04	46.13	8.38	5.56	13.94	18,909.43
Mass Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Mass Grading Off Road Diesel	15.63	128.97	57.32	0.00	0.00	5.69	5.69	0.00	5.23	5.23	16,637.60
Mass Grading On Road Diesel	0.67	9.26	3.33	0.02	0.06	0.35	0.41	0.02	0.32	0.34	1,810.74
Mass Grading Worker Trips	0.10	0.18	3.41	0.00	0.02	0.01	0.03	0.01	0.01	0.02	461.09

Time Slice 2/1/2012-2/29/2012 Active Days: 25	17.04	143.11	67.51	0.02	40.09	6.31	46.40	8.38	5.81	14.19	19,482.14
Mass Grading 01/01/2012-12/31/2013	16.41	138.41	64.06	0.02	40.09	6.04	46.13	8.38	5.56	13.94	18,909.43
Mass Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Mass Grading Off Road Diesel	15.63	128.97	57.32	0.00	0.00	5.69	5.69	0.00	5.23	5.23	16,637.60
Mass Grading On Road Diesel	0.67	9.26	3.33	0.02	0.06	0.35	0.41	0.02	0.32	0.34	1,810.74
Mass Grading Worker Trips	0.10	0.18	3.41	0.00	0.02	0.01	0.03	0.01	0.01	0.02	461.09
Trenching 02/01/2012-12/31/2013	0.63	4.70	3.45	0.00	0.00	0.27	0.27	0.00	0.25	0.25	572.71
Trenching Off Road Diesel	0.62	4.69	3.26	0.00	0.00	0.27	0.27	0.00	0.25	0.25	547.09
Trenching Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 3/1/2012-12/31/2012 Active Days: 262	**21.34**	**170.18**	**85.28**	**0.02**	40.10	**8.52**	48.62	8.39	**7.84**	**16.23**	22,090.71
Asphalt 03/01/2012-12/31/2013	4.29	27.07	17.77	0.00	0.01	2.21	2.22	0.00	2.03	2.04	2,608.57
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	4.22	26.93	16.60	0.00	0.00	2.20	2.20	0.00	2.03	2.03	2,438.47
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.40
Paving Worker Trips	0.03	0.06	1.14	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.70
Mass Grading 01/01/2012-12/31/2013	16.41	138.41	64.06	0.02	40.09	6.04	46.13	8.38	5.56	13.94	18,909.43
Mass Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Mass Grading Off Road Diesel	15.63	128.97	57.32	0.00	0.00	5.69	5.69	0.00	5.23	5.23	16,637.60
Mass Grading On Road Diesel	0.67	9.26	3.33	0.02	0.06	0.35	0.41	0.02	0.32	0.34	1,810.74
Mass Grading Worker Trips	0.10	0.18	3.41	0.00	0.02	0.01	0.03	0.01	0.01	0.02	461.09
Trenching 02/01/2012-12/31/2013	0.63	4.70	3.45	0.00	0.00	0.27	0.27	0.00	0.25	0.25	572.71
Trenching Off Road Diesel	0.62	4.69	3.26	0.00	0.00	0.27	0.27	0.00	0.25	0.25	547.09
Trenching Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62

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Time Slice 1/1/2013-12/31/2013 Active Days: 313	20.20	157.48	83.03	**0.02**	40.10	8.01	48.11	8.39	7.37	15.75	**22,090.77**
Asphalt 03/01/2012-12/31/2013	4.00	25.52	17.57	0.00	0.01	2.04	2.05	0.00	1.88	1.88	2,608.58
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.92	25.39	16.49	0.00	0.00	2.04	2.04	0.00	1.87	1.87	2,438.47
Paving On Road Diesel	0.01	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.40
Paving Worker Trips	0.03	0.05	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.71
Mass Grading 01/01/2012-12/31/2013	15.61	127.60	62.03	0.02	40.09	5.71	45.80	8.38	5.26	13.64	18,909.48
Mass Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Mass Grading Off Road Diesel	14.90	119.28	55.88	0.00	0.00	5.40	5.40	0.00	4.97	4.97	16,637.60
Mass Grading On Road Diesel	0.62	8.15	2.98	0.02	0.06	0.30	0.37	0.02	0.28	0.30	1,810.74
Mass Grading Worker Trips	0.09	0.16	3.16	0.00	0.02	0.01	0.03	0.01	0.01	0.02	461.14
Trenching 02/01/2012-12/31/2013	0.60	4.36	3.43	0.00	0.00	0.25	0.25	0.00	0.23	0.23	572.71
Trenching Off Road Diesel	0.59	4.35	3.26	0.00	0.00	0.25	0.25	0.00	0.23	0.23	547.09
Trenching Worker Trips	0.01	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 1/1/2014-1/31/2014 Active Days: 27	13.91	108.48	55.16	0.02	30.08	4.70	34.79	6.29	4.33	10.62	18,075.62
Mass Grading 01/01/2014-12/31/2015	13.91	108.48	55.16	0.02	30.08	4.70	34.79	6.29	4.33	10.62	18,075.62
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	13.27	101.18	49.71	0.00	0.00	4.43	4.43	0.00	4.07	4.07	15,826.43
Mass Grading On Road Diesel	0.56	7.16	2.68	0.02	0.06	0.26	0.33	0.02	0.24	0.26	1,813.63
Mass Grading Worker Trips	0.08	0.14	2.77	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.56

Time Slice 2/1/2014-2/28/2014 Active Days: 24	14.48	112.54	58.56	0.02	30.09	4.92	35.01	6.29	4.53	10.82	18,648.33
Mass Grading 01/01/2014-12/31/2015	13.91	108.48	55.16	0.02	30.08	4.70	34.79	6.29	4.33	10.62	18,075.62
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	13.27	101.18	49.71	0.00	0.00	4.43	4.43	0.00	4.07	4.07	15,826.43
Mass Grading On Road Diesel	0.56	7.16	2.68	0.02	0.06	0.26	0.33	0.02	0.24	0.26	1,813.63
Mass Grading Worker Trips	0.08	0.14	2.77	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.56
Trenching 02/01/2014-12/31/2015	0.56	4.06	3.40	0.00	0.00	0.22	0.22	0.00	0.20	0.20	572.71
Trenching Off Road Diesel	0.56	4.05	3.24	0.00	0.00	0.22	0.22	0.00	0.20	0.20	547.09
Trenching Worker Trips	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 3/1/2014-12/31/2014 Active Days: 262	18.21	136.58	75.91	0.02	30.09	6.80	36.90	6.30	6.26	12.55	21,252.98
Asphalt 03/01/2014-12/31/2015	3.74	24.04	17.35	0.00	0.01	1.88	1.89	0.00	1.73	1.73	2,604.65
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.68	23.94	16.35	0.00	0.00	1.88	1.88	0.00	1.73	1.73	2,438.47
Paving On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.45
Paving Worker Trips	0.03	0.05	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.73
Mass Grading 01/01/2014-12/31/2015	13.91	108.48	55.16	0.02	30.08	4.70	34.79	6.29	4.33	10.62	18,075.62
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	13.27	101.18	49.71	0.00	0.00	4.43	4.43	0.00	4.07	4.07	15,826.43
Mass Grading On Road Diesel	0.56	7.16	2.68	0.02	0.06	0.26	0.33	0.02	0.24	0.26	1,813.63
Mass Grading Worker Trips	0.08	0.14	2.77	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.56
Trenching 02/01/2014-12/31/2015	0.56	4.06	3.40	0.00	0.00	0.22	0.22	0.00	0.20	0.20	572.71
Trenching Off Road Diesel	0.56	4.05	3.24	0.00	0.00	0.22	0.22	0.00	0.20	0.20	547.09
Trenching Worker Trips	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62

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Time Slice 1/1/2015-12/31/2015 Active Days: 313	16.76	122.95	74.19	0.02	30.09	6.07	36.16	6.30	5.58	11.88	21,253.02
Asphalt 03/01/2014-12/31/2015	3.46	22.26	17.17	0.00	0.01	1.72	1.72	0.00	1.58	1.58	2,604.66
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.40	22.17	16.25	0.00	0.00	1.71	1.71	0.00	1.57	1.57	2,438.47
Paving On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.45
Paving Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.73
Mass Grading 01/01/2014-12/31/2015	12.79	97.08	53.63	0.02	30.08	4.15	34.23	6.29	3.82	10.11	18,075.64
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	12.20	90.68	48.67	0.00	0.00	3.91	3.91	0.00	3.60	3.60	15,826.43
Mass Grading On Road Diesel	0.51	6.27	2.40	0.02	0.06	0.23	0.29	0.02	0.21	0.23	1,813.63
Mass Grading Worker Trips	0.07	0.13	2.57	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.58
Trenching 02/01/2014-12/31/2015	0.51	3.62	3.39	0.00	0.00	0.20	0.20	0.00	0.19	0.19	572.71
Trenching Off Road Diesel	0.51	3.61	3.24	0.00	0.00	0.20	0.20	0.00	0.19	0.19	547.09
Trenching Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 1/1/2016-1/30/2016 Active Days: 26	11.81	83.34	52.17	0.02	50.08	3.60	53.69	10.47	3.31	13.78	17,710.66
Mass Grading 01/01/2016-12/31/2017	11.81	83.34	52.17	0.02	50.08	3.60	53.69	10.47	3.31	13.78	17,710.66
Mass Grading Dust	0.00	0.00	0.00	0.00	50.00	0.00	50.00	10.44	0.00	10.44	0.00
Mass Grading Off Road Diesel	11.27	77.65	47.59	0.00	0.00	3.39	3.39	0.00	3.12	3.12	15,461.48
Mass Grading On Road Diesel	0.47	5.57	2.18	0.02	0.06	0.20	0.27	0.02	0.19	0.21	1,813.63
Mass Grading Worker Trips	0.07	0.12	2.39	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.54

Time Slice 2/1/2016-2/29/2016 Active Days: 25	12.29	86.56	55.55	0.02	50.09	3.77	53.86	10.47	3.47	13.94	18,283.36
Mass Grading 01/01/2016-12/31/2017	11.81	83.34	52.17	0.02	50.08	3.60	53.69	10.47	3.31	13.78	17,710.66
Mass Grading Dust	0.00	0.00	0.00	0.00	50.00	0.00	50.00	10.44	0.00	10.44	0.00
Mass Grading Off Road Diesel	11.27	77.65	47.59	0.00	0.00	3.39	3.39	0.00	3.12	3.12	15,461.48
Mass Grading On Road Diesel	0.47	5.57	2.18	0.02	0.06	0.20	0.27	0.02	0.19	0.21	1,813.63
Mass Grading Worker Trips	0.07	0.12	2.39	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.54
Trenching 02/01/2016-12/31/2017	0.48	3.21	3.38	0.00	0.00	0.17	0.17	0.00	0.16	0.16	572.71
Trenching Off Road Diesel	0.47	3.21	3.24	0.00	0.00	0.17	0.17	0.00	0.16	0.16	547.09
Trenching Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 3/1/2016-12/31/2016 Active Days: 263	15.52	107.15	72.56	0.02	**50.09**	5.31	**55.40**	**10.47**	4.88	15.35	20,895.09
Asphalt 03/01/2016-12/31/2017	3.23	20.59	17.01	0.00	0.01	1.53	1.54	0.00	1.41	1.41	2,611.73
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.16	20.49	16.14	0.00	0.00	1.53	1.53	0.00	1.41	1.41	2,438.47
Paving On Road Diesel	0.01	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.53
Paving Worker Trips	0.02	0.04	0.85	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.72
Mass Grading 01/01/2016-12/31/2017	11.81	83.34	52.17	0.02	50.08	3.60	53.69	10.47	3.31	13.78	17,710.66
Mass Grading Dust	0.00	0.00	0.00	0.00	50.00	0.00	50.00	10.44	0.00	10.44	0.00
Mass Grading Off Road Diesel	11.27	77.65	47.59	0.00	0.00	3.39	3.39	0.00	3.12	3.12	15,461.48
Mass Grading On Road Diesel	0.47	5.57	2.18	0.02	0.06	0.20	0.27	0.02	0.19	0.21	1,813.63
Mass Grading Worker Trips	0.07	0.12	2.39	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.54
Trenching 02/01/2016-12/31/2017	0.48	3.21	3.38	0.00	0.00	0.17	0.17	0.00	0.16	0.16	572.71
Trenching Off Road Diesel	0.47	3.21	3.24	0.00	0.00	0.17	0.17	0.00	0.16	0.16	547.09
Trenching Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62

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Time Slice 1/2/2017-12/30/2017 Active Days: 312	14.59	95.84	71.68	0.02	**50.09**	4.88	54.98	**10.47**	4.49	14.96	20,895.06
Asphalt 03/01/2016-12/31/2017	3.03	19.04	16.86	0.00	0.01	1.40	1.41	0.00	1.29	1.29	2,611.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.96	18.94	16.05	0.00	0.00	1.40	1.40	0.00	1.28	1.28	2,438.47
Paving On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.53
Paving Worker Trips	0.02	0.04	0.79	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.71
Mass Grading 01/01/2016-12/31/2017	11.11	73.98	51.45	0.02	50.08	3.33	53.41	10.47	3.06	13.53	17,710.63
Mass Grading Dust	0.00	0.00	0.00	0.00	50.00	0.00	50.00	10.44	0.00	10.44	0.00
Mass Grading Off Road Diesel	10.61	68.84	47.21	0.00	0.00	3.14	3.14	0.00	2.89	2.89	15,461.48
Mass Grading On Road Diesel	0.44	5.03	2.01	0.02	0.06	0.18	0.24	0.02	0.17	0.19	1,813.63
Mass Grading Worker Trips	0.06	0.11	2.23	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.52
Trenching 02/01/2016-12/31/2017	0.44	2.82	3.37	0.00	0.00	0.15	0.15	0.00	0.14	0.14	572.71
Trenching Off Road Diesel	0.44	2.82	3.24	0.00	0.00	0.15	0.15	0.00	0.14	0.14	547.09
Trenching Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 1/1/2018-1/31/2018 Active Days: 27	10.44	65.95	50.50	0.02	30.88	2.85	33.74	6.46	2.62	9.08	17,710.62
Mass Grading 01/01/2018-12/31/2019	10.44	65.95	50.50	0.02	30.88	2.85	33.74	6.46	2.62	9.08	17,710.62
Mass Grading Dust	0.00	0.00	0.00	0.00	30.80	0.00	30.80	6.43	0.00	6.43	0.00
Mass Grading Off Road Diesel	9.97	61.27	46.57	0.00	0.00	2.68	2.68	0.00	2.46	2.46	15,461.48
Mass Grading On Road Diesel	0.41	4.57	1.86	0.02	0.06	0.16	0.23	0.02	0.15	0.17	1,813.63
Mass Grading Worker Trips	0.06	0.10	2.08	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.50

Time Slice 2/1/2018-2/28/2018 Active Days: 24	10.85	68.42	53.87	0.02	30.89	2.99	33.87	6.46	2.75	9.21	18,283.32
Mass Grading 01/01/2018-12/31/2019	10.44	65.95	50.50	0.02	30.88	2.85	33.74	6.46	2.62	9.08	17,710.62
Mass Grading Dust	0.00	0.00	0.00	0.00	30.80	0.00	30.80	6.43	0.00	6.43	0.00
Mass Grading Off Road Diesel	9.97	61.27	46.57	0.00	0.00	2.68	2.68	0.00	2.46	2.46	15,461.48
Mass Grading On Road Diesel	0.41	4.57	1.86	0.02	0.06	0.16	0.23	0.02	0.15	0.17	1,813.63
Mass Grading Worker Trips	0.06	0.10	2.08	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.50
Trenching 02/01/2018-12/31/2019	0.41	2.47	3.36	0.00	0.00	0.14	0.14	0.00	0.12	0.13	572.71
Trenching Off Road Diesel	0.40	2.46	3.24	0.00	0.00	0.13	0.13	0.00	0.12	0.12	547.09
Trenching Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 3/1/2018-12/31/2018 Active Days: 262	13.67	85.99	70.61	0.02	30.89	4.27	35.16	6.46	3.92	10.39	20,888.27
Asphalt 03/01/2018-12/31/2019	2.82	17.58	16.75	0.00	0.01	1.28	1.29	0.00	1.18	1.18	2,604.95
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.77	17.51	16.00	0.00	0.00	1.27	1.27	0.00	1.17	1.17	2,438.47
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.77
Paving Worker Trips	0.02	0.04	0.73	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.71
Mass Grading 01/01/2018-12/31/2019	10.44	65.95	50.50	0.02	30.88	2.85	33.74	6.46	2.62	9.08	17,710.62
Mass Grading Dust	0.00	0.00	0.00	0.00	30.80	0.00	30.80	6.43	0.00	6.43	0.00
Mass Grading Off Road Diesel	9.97	61.27	46.57	0.00	0.00	2.68	2.68	0.00	2.46	2.46	15,461.48
Mass Grading On Road Diesel	0.41	4.57	1.86	0.02	0.06	0.16	0.23	0.02	0.15	0.17	1,813.63
Mass Grading Worker Trips	0.06	0.10	2.08	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.50
Trenching 02/01/2018-12/31/2019	0.41	2.47	3.36	0.00	0.00	0.14	0.14	0.00	0.12	0.13	572.71
Trenching Off Road Diesel	0.40	2.46	3.24	0.00	0.00	0.13	0.13	0.00	0.12	0.12	547.09
Trenching Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62

Time Slice 1/1/2019-12/31/2019 Active Days: 313	12.79	77.00	70.13	0.02	30.89	3.91	34.80	6.46	3.59	10.06	20,888.26
Asphalt 03/01/2018-12/31/2019	2.62	16.26	16.61	0.00	0.01	1.16	1.17	0.00	1.06	1.07	2,604.94
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.57	16.19	15.92	0.00	0.00	1.15	1.15	0.00	1.06	1.06	2,438.47
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.77
Paving Worker Trips	0.02	0.03	0.68	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.70
Mass Grading 01/01/2018-12/31/2019	9.79	58.58	50.16	0.02	30.88	2.63	33.52	6.46	2.42	8.88	17,710.61
Mass Grading Dust	0.00	0.00	0.00	0.00	30.80	0.00	30.80	6.43	0.00	6.43	0.00
Mass Grading Off Road Diesel	9.35	54.30	46.49	0.00	0.00	2.47	2.47	0.00	2.27	2.27	15,461.48
Mass Grading On Road Diesel	0.39	4.19	1.74	0.02	0.06	0.15	0.21	0.02	0.14	0.16	1,813.63
Mass Grading Worker Trips	0.05	0.09	1.93	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.50
Trenching 02/01/2018-12/31/2019	0.37	2.17	3.35	0.00	0.00	0.12	0.12	0.00	0.11	0.11	572.71
Trenching Off Road Diesel	0.37	2.16	3.24	0.00	0.00	0.12	0.12	0.00	0.11	0.11	547.09
Trenching Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62

Phase Assumptions

Phase: Mass Grading 1/1/2012 - 12/31/2013 - Phase 1 Grading

Total Acres Disturbed: 7.8

Maximum Daily Acreage Disturbed: 2

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 449.76

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Off Highway Tractors (267 hp) operating at a 0.65 load factor for 8 hours per day

6 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

4 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2014 - 12/31/2015 - Phase II Grading

Total Acres Disturbed: 6

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 450.48

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Off Highway Tractors (267 hp) operating at a 0.65 load factor for 8 hours per day

6 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

4 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2016 - 12/31/2017 - Phase III Grading

Total Acres Disturbed: 9.41

Maximum Daily Acreage Disturbed: 2.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 450.48

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

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1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

6 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

4 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 1/1/2018 - 12/31/2019 - Phase IV Grading

Total Acres Disturbed: 6.15

Maximum Daily Acreage Disturbed: 1.54

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 450.48

Off-Road Equipment:

1 Bore/Drill Rigs (291 hp) operating at a 0.75 load factor for 8 hours per day

1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

6 Off Highway Trucks (479 hp) operating at a 0.57 load factor for 8 hours per day

4 Pumps (53 hp) operating at a 0.74 load factor for 8 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 2/1/2012 - 12/31/2013 - Phase 1 Trenching

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

Phase: Trenching 2/1/2014 - 12/31/2015 - Phase II Trenching

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

Phase: Trenching 2/1/2016 - 12/31/2017 - Phase III Trenching

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

Phase: Trenching 2/1/2018 - 12/31/2019 - Phase IV Trenching

Off-Road Equipment:

1 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

Phase: Paving 3/1/2012 - 12/31/2013 - Phase 1 Paving

Acres to be Paved: 7.9

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Sweepers/Scrubbers (91 hp) operating at a 0.68 load factor for 8 hours per day

Phase: Paving 3/1/2014 - 12/31/2015 - Phase II Paving
Phase II Paving
Acres to be Paved: 6

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Sweepers/Scrubbers (91 hp) operating at a 0.68 load factor for 8 hours per day

Phase: Paving 3/1/2016 - 12/31/2017 - Phase III Paving

Acres to be Paved: 9.41

Off-Road Equipment:

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1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Sweepers/Scrubbers (91 hp) operating at a 0.68 load factor for 8 hours per day

Phase: Paving 3/1/2018 - 12/31/2019 - Phase IV Paving

Acres to be Paved: 6.15

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Sweepers/Scrubbers (91 hp) operating at a 0.68 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/2/2012-1/31/2012 Active Days: 26	16.41	138.41	64.06	0.02	15.69	6.04	21.73	3.29	5.56	8.85	18,909.43
Mass Grading 01/01/2012-12/31/2013	16.41	138.41	64.06	0.02	15.69	6.04	21.73	3.29	5.56	8.85	18,909.43
Mass Grading Dust	0.00	0.00	0.00	0.00	15.60	0.00	15.60	3.26	0.00	3.26	0.00
Mass Grading Off Road Diesel	15.63	128.97	57.32	0.00	0.00	5.69	5.69	0.00	5.23	5.23	16,637.60
Mass Grading On Road Diesel	0.67	9.26	3.33	0.02	0.06	0.35	0.41	0.02	0.32	0.34	1,810.74
Mass Grading Worker Trips	0.10	0.18	3.41	0.00	0.02	0.01	0.03	0.01	0.01	0.02	461.09

Time Slice 2/1/2012-2/29/2012 Active Days: 25	17.04	143.11	67.51	0.02	15.69	6.31	22.00	3.29	5.81	9.09	19,482.14
Mass Grading 01/01/2012-12/31/2013	16.41	138.41	64.06	0.02	15.69	6.04	21.73	3.29	5.56	8.85	18,909.43
Mass Grading Dust	0.00	0.00	0.00	0.00	15.60	0.00	15.60	3.26	0.00	3.26	0.00
Mass Grading Off Road Diesel	15.63	128.97	57.32	0.00	0.00	5.69	5.69	0.00	5.23	5.23	16,637.60
Mass Grading On Road Diesel	0.67	9.26	3.33	0.02	0.06	0.35	0.41	0.02	0.32	0.34	1,810.74
Mass Grading Worker Trips	0.10	0.18	3.41	0.00	0.02	0.01	0.03	0.01	0.01	0.02	461.09
Trenching 02/01/2012-12/31/2013	0.63	4.70	3.45	0.00	0.00	0.27	0.27	0.00	0.25	0.25	572.71
Trenching Off Road Diesel	0.62	4.69	3.26	0.00	0.00	0.27	0.27	0.00	0.25	0.25	547.09
Trenching Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 3/1/2012-12/31/2012 Active Days: 262	**21.34**	**170.18**	**85.28**	**0.02**	15.70	**8.52**	24.22	3.29	**7.84**	11.13	22,090.71
Asphalt 03/01/2012-12/31/2013	4.29	27.07	17.77	0.00	0.01	2.21	2.22	0.00	2.03	2.04	2,608.57
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	4.22	26.93	16.60	0.00	0.00	2.20	2.20	0.00	2.03	2.03	2,438.47
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.40
Paving Worker Trips	0.03	0.06	1.14	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.70
Mass Grading 01/01/2012-12/31/2013	16.41	138.41	64.06	0.02	15.69	6.04	21.73	3.29	5.56	8.85	18,909.43
Mass Grading Dust	0.00	0.00	0.00	0.00	15.60	0.00	15.60	3.26	0.00	3.26	0.00
Mass Grading Off Road Diesel	15.63	128.97	57.32	0.00	0.00	5.69	5.69	0.00	5.23	5.23	16,637.60
Mass Grading On Road Diesel	0.67	9.26	3.33	0.02	0.06	0.35	0.41	0.02	0.32	0.34	1,810.74
Mass Grading Worker Trips	0.10	0.18	3.41	0.00	0.02	0.01	0.03	0.01	0.01	0.02	461.09
Trenching 02/01/2012-12/31/2013	0.63	4.70	3.45	0.00	0.00	0.27	0.27	0.00	0.25	0.25	572.71
Trenching Off Road Diesel	0.62	4.69	3.26	0.00	0.00	0.27	0.27	0.00	0.25	0.25	547.09
Trenching Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62

Time Slice 1/1/2013-12/31/2013 Active Days: 313	20.20	157.48	83.03	**0.02**	15.70	8.01	23.71	3.29	7.37	10.66	**22,090.77**
Asphalt 03/01/2012-12/31/2013	4.00	25.52	17.57	0.00	0.01	2.04	2.05	0.00	1.88	1.88	2,608.58
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.92	25.39	16.49	0.00	0.00	2.04	2.04	0.00	1.87	1.87	2,438.47
Paving On Road Diesel	0.01	0.07	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.40
Paving Worker Trips	0.03	0.05	1.05	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.71
Mass Grading 01/01/2012-12/31/2013	15.61	127.60	62.03	0.02	15.69	5.71	21.40	3.29	5.26	8.54	18,909.48
Mass Grading Dust	0.00	0.00	0.00	0.00	15.60	0.00	15.60	3.26	0.00	3.26	0.00
Mass Grading Off Road Diesel	14.90	119.28	55.88	0.00	0.00	5.40	5.40	0.00	4.97	4.97	16,637.60
Mass Grading On Road Diesel	0.62	8.15	2.98	0.02	0.06	0.30	0.37	0.02	0.28	0.30	1,810.74
Mass Grading Worker Trips	0.09	0.16	3.16	0.00	0.02	0.01	0.03	0.01	0.01	0.02	461.14
Trenching 02/01/2012-12/31/2013	0.60	4.36	3.43	0.00	0.00	0.25	0.25	0.00	0.23	0.23	572.71
Trenching Off Road Diesel	0.59	4.35	3.26	0.00	0.00	0.25	0.25	0.00	0.23	0.23	547.09
Trenching Worker Trips	0.01	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 1/1/2014-1/31/2014 Active Days: 27	13.91	108.48	55.16	0.02	11.78	4.70	16.49	2.47	4.33	6.80	18,075.62
Mass Grading 01/01/2014-12/31/2015	13.91	108.48	55.16	0.02	11.78	4.70	16.49	2.47	4.33	6.80	18,075.62
Mass Grading Dust	0.00	0.00	0.00	0.00	11.70	0.00	11.70	2.44	0.00	2.44	0.00
Mass Grading Off Road Diesel	13.27	101.18	49.71	0.00	0.00	4.43	4.43	0.00	4.07	4.07	15,826.43
Mass Grading On Road Diesel	0.56	7.16	2.68	0.02	0.06	0.26	0.33	0.02	0.24	0.26	1,813.63
Mass Grading Worker Trips	0.08	0.14	2.77	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.56

Time Slice 2/1/2014-2/28/2014 Active Days: 24	14.48	112.54	58.56	0.02	11.79	4.92	16.71	2.47	4.53	7.00	18,648.33
Mass Grading 01/01/2014-12/31/2015	13.91	108.48	55.16	0.02	11.78	4.70	16.49	2.47	4.33	6.80	18,075.62
Mass Grading Dust	0.00	0.00	0.00	0.00	11.70	0.00	11.70	2.44	0.00	2.44	0.00
Mass Grading Off Road Diesel	13.27	101.18	49.71	0.00	0.00	4.43	4.43	0.00	4.07	4.07	15,826.43
Mass Grading On Road Diesel	0.56	7.16	2.68	0.02	0.06	0.26	0.33	0.02	0.24	0.26	1,813.63
Mass Grading Worker Trips	0.08	0.14	2.77	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.56
Trenching 02/01/2014-12/31/2015	0.56	4.06	3.40	0.00	0.00	0.22	0.22	0.00	0.20	0.20	572.71
Trenching Off Road Diesel	0.56	4.05	3.24	0.00	0.00	0.22	0.22	0.00	0.20	0.20	547.09
Trenching Worker Trips	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 3/1/2014-12/31/2014 Active Days: 262	18.21	136.58	75.91	0.02	11.79	6.80	18.60	2.48	6.26	8.73	21,252.98
Asphalt 03/01/2014-12/31/2015	3.74	24.04	17.35	0.00	0.01	1.88	1.89	0.00	1.73	1.73	2,604.65
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.68	23.94	16.35	0.00	0.00	1.88	1.88	0.00	1.73	1.73	2,438.47
Paving On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.45
Paving Worker Trips	0.03	0.05	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.73
Mass Grading 01/01/2014-12/31/2015	13.91	108.48	55.16	0.02	11.78	4.70	16.49	2.47	4.33	6.80	18,075.62
Mass Grading Dust	0.00	0.00	0.00	0.00	11.70	0.00	11.70	2.44	0.00	2.44	0.00
Mass Grading Off Road Diesel	13.27	101.18	49.71	0.00	0.00	4.43	4.43	0.00	4.07	4.07	15,826.43
Mass Grading On Road Diesel	0.56	7.16	2.68	0.02	0.06	0.26	0.33	0.02	0.24	0.26	1,813.63
Mass Grading Worker Trips	0.08	0.14	2.77	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.56
Trenching 02/01/2014-12/31/2015	0.56	4.06	3.40	0.00	0.00	0.22	0.22	0.00	0.20	0.20	572.71
Trenching Off Road Diesel	0.56	4.05	3.24	0.00	0.00	0.22	0.22	0.00	0.20	0.20	547.09
Trenching Worker Trips	0.00	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62

Time Slice 1/1/2015-12/31/2015 Active Days: 313	16.76	122.95	74.19	0.02	11.79	6.07	17.86	2.48	5.58	8.06	21,253.02
Asphalt 03/01/2014-12/31/2015	3.46	22.26	17.17	0.00	0.01	1.72	1.72	0.00	1.58	1.58	2,604.66
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.40	22.17	16.25	0.00	0.00	1.71	1.71	0.00	1.57	1.57	2,438.47
Paving On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.45
Paving Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.73
Mass Grading 01/01/2014-12/31/2015	12.79	97.08	53.63	0.02	11.78	4.15	15.93	2.47	3.82	6.29	18,075.64
Mass Grading Dust	0.00	0.00	0.00	0.00	11.70	0.00	11.70	2.44	0.00	2.44	0.00
Mass Grading Off Road Diesel	12.20	90.68	48.67	0.00	0.00	3.91	3.91	0.00	3.60	3.60	15,826.43
Mass Grading On Road Diesel	0.51	6.27	2.40	0.02	0.06	0.23	0.29	0.02	0.21	0.23	1,813.63
Mass Grading Worker Trips	0.07	0.13	2.57	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.58
Trenching 02/01/2014-12/31/2015	0.51	3.62	3.39	0.00	0.00	0.20	0.20	0.00	0.19	0.19	572.71
Trenching Off Road Diesel	0.51	3.61	3.24	0.00	0.00	0.20	0.20	0.00	0.19	0.19	547.09
Trenching Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 1/1/2016-1/30/2016 Active Days: 26	11.81	83.34	52.17	0.02	19.58	3.60	23.19	4.10	3.31	7.41	17,710.66
Mass Grading 01/01/2016-12/31/2017	11.81	83.34	52.17	0.02	19.58	3.60	23.19	4.10	3.31	7.41	17,710.66
Mass Grading Dust	0.00	0.00	0.00	0.00	19.50	0.00	19.50	4.07	0.00	4.07	0.00
Mass Grading Off Road Diesel	11.27	77.65	47.59	0.00	0.00	3.39	3.39	0.00	3.12	3.12	15,461.48
Mass Grading On Road Diesel	0.47	5.57	2.18	0.02	0.06	0.20	0.27	0.02	0.19	0.21	1,813.63
Mass Grading Worker Trips	0.07	0.12	2.39	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.54

Time Slice 2/1/2016-2/29/2016 Active Days: 25	12.29	86.56	55.55	0.02	19.59	3.77	23.36	4.10	3.47	7.57	18,283.36
Mass Grading 01/01/2016-12/31/2017	11.81	83.34	52.17	0.02	19.58	3.60	23.19	4.10	3.31	7.41	17,710.66
Mass Grading Dust	0.00	0.00	0.00	0.00	19.50	0.00	19.50	4.07	0.00	4.07	0.00
Mass Grading Off Road Diesel	11.27	77.65	47.59	0.00	0.00	3.39	3.39	0.00	3.12	3.12	15,461.48
Mass Grading On Road Diesel	0.47	5.57	2.18	0.02	0.06	0.20	0.27	0.02	0.19	0.21	1,813.63
Mass Grading Worker Trips	0.07	0.12	2.39	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.54
Trenching 02/01/2016-12/31/2017	0.48	3.21	3.38	0.00	0.00	0.17	0.17	0.00	0.16	0.16	572.71
Trenching Off Road Diesel	0.47	3.21	3.24	0.00	0.00	0.17	0.17	0.00	0.16	0.16	547.09
Trenching Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 3/1/2016-12/31/2016 Active Days: 263	15.52	107.15	72.56	0.02	19.59	5.31	24.90	4.10	4.88	8.98	20,895.09
Asphalt 03/01/2016-12/31/2017	3.23	20.59	17.01	0.00	0.01	1.53	1.54	0.00	1.41	1.41	2,611.73
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	3.16	20.49	16.14	0.00	0.00	1.53	1.53	0.00	1.41	1.41	2,438.47
Paving On Road Diesel	0.01	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.53
Paving Worker Trips	0.02	0.04	0.85	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.72
Mass Grading 01/01/2016-12/31/2017	11.81	83.34	52.17	0.02	19.58	3.60	23.19	4.10	3.31	7.41	17,710.66
Mass Grading Dust	0.00	0.00	0.00	0.00	19.50	0.00	19.50	4.07	0.00	4.07	0.00
Mass Grading Off Road Diesel	11.27	77.65	47.59	0.00	0.00	3.39	3.39	0.00	3.12	3.12	15,461.48
Mass Grading On Road Diesel	0.47	5.57	2.18	0.02	0.06	0.20	0.27	0.02	0.19	0.21	1,813.63
Mass Grading Worker Trips	0.07	0.12	2.39	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.54
Trenching 02/01/2016-12/31/2017	0.48	3.21	3.38	0.00	0.00	0.17	0.17	0.00	0.16	0.16	572.71
Trenching Off Road Diesel	0.47	3.21	3.24	0.00	0.00	0.17	0.17	0.00	0.16	0.16	547.09
Trenching Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62

Time Slice 1/2/2017-12/30/2017 Active Days: 312	14.59	95.84	71.68	0.02	19.59	4.88	24.48	4.10	4.49	8.59	20,895.06
Asphalt 03/01/2016-12/31/2017	3.03	19.04	16.86	0.00	0.01	1.40	1.41	0.00	1.29	1.29	2,611.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.96	18.94	16.05	0.00	0.00	1.40	1.40	0.00	1.28	1.28	2,438.47
Paving On Road Diesel	0.00	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.53
Paving Worker Trips	0.02	0.04	0.79	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.71
Mass Grading 01/01/2016-12/31/2017	11.11	73.98	51.45	0.02	19.58	3.33	22.91	4.10	3.06	7.16	17,710.63
Mass Grading Dust	0.00	0.00	0.00	0.00	19.50	0.00	19.50	4.07	0.00	4.07	0.00
Mass Grading Off Road Diesel	10.61	68.84	47.21	0.00	0.00	3.14	3.14	0.00	2.89	2.89	15,461.48
Mass Grading On Road Diesel	0.44	5.03	2.01	0.02	0.06	0.18	0.24	0.02	0.17	0.19	1,813.63
Mass Grading Worker Trips	0.06	0.11	2.23	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.52
Trenching 02/01/2016-12/31/2017	0.44	2.82	3.37	0.00	0.00	0.15	0.15	0.00	0.14	0.14	572.71
Trenching Off Road Diesel	0.44	2.82	3.24	0.00	0.00	0.15	0.15	0.00	0.14	0.14	547.09
Trenching Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 1/1/2018-1/31/2018 Active Days: 27	10.44	65.95	50.50	0.02	12.10	2.85	14.95	2.54	2.62	5.16	17,710.62
Mass Grading 01/01/2018-12/31/2019	10.44	65.95	50.50	0.02	12.10	2.85	14.95	2.54	2.62	5.16	17,710.62
Mass Grading Dust	0.00	0.00	0.00	0.00	12.01	0.00	12.01	2.51	0.00	2.51	0.00
Mass Grading Off Road Diesel	9.97	61.27	46.57	0.00	0.00	2.68	2.68	0.00	2.46	2.46	15,461.48
Mass Grading On Road Diesel	0.41	4.57	1.86	0.02	0.06	0.16	0.23	0.02	0.15	0.17	1,813.63
Mass Grading Worker Trips	0.06	0.10	2.08	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.50

Time Slice 2/1/2018-2/28/2018 Active Days: 24	10.85	68.42	53.87	0.02	12.10	2.99	15.08	2.54	2.75	5.28	18,283.32
Mass Grading 01/01/2018-12/31/2019	10.44	65.95	50.50	0.02	12.10	2.85	14.95	2.54	2.62	5.16	17,710.62
Mass Grading Dust	0.00	0.00	0.00	0.00	12.01	0.00	12.01	2.51	0.00	2.51	0.00
Mass Grading Off Road Diesel	9.97	61.27	46.57	0.00	0.00	2.68	2.68	0.00	2.46	2.46	15,461.48
Mass Grading On Road Diesel	0.41	4.57	1.86	0.02	0.06	0.16	0.23	0.02	0.15	0.17	1,813.63
Mass Grading Worker Trips	0.06	0.10	2.08	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.50
Trenching 02/01/2018-12/31/2019	0.41	2.47	3.36	0.00	0.00	0.14	0.14	0.00	0.12	0.13	572.71
Trenching Off Road Diesel	0.40	2.46	3.24	0.00	0.00	0.13	0.13	0.00	0.12	0.12	547.09
Trenching Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62
Time Slice 3/1/2018-12/31/2018 Active Days: 262	13.67	85.99	70.61	0.02	12.11	4.27	16.37	2.54	3.92	6.46	20,888.27
Asphalt 03/01/2018-12/31/2019	2.82	17.58	16.75	0.00	0.01	1.28	1.29	0.00	1.18	1.18	2,604.95
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.77	17.51	16.00	0.00	0.00	1.27	1.27	0.00	1.17	1.17	2,438.47
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.77
Paving Worker Trips	0.02	0.04	0.73	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.71
Mass Grading 01/01/2018-12/31/2019	10.44	65.95	50.50	0.02	12.10	2.85	14.95	2.54	2.62	5.16	17,710.62
Mass Grading Dust	0.00	0.00	0.00	0.00	12.01	0.00	12.01	2.51	0.00	2.51	0.00
Mass Grading Off Road Diesel	9.97	61.27	46.57	0.00	0.00	2.68	2.68	0.00	2.46	2.46	15,461.48
Mass Grading On Road Diesel	0.41	4.57	1.86	0.02	0.06	0.16	0.23	0.02	0.15	0.17	1,813.63
Mass Grading Worker Trips	0.06	0.10	2.08	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.50
Trenching 02/01/2018-12/31/2019	0.41	2.47	3.36	0.00	0.00	0.14	0.14	0.00	0.12	0.13	572.71
Trenching Off Road Diesel	0.40	2.46	3.24	0.00	0.00	0.13	0.13	0.00	0.12	0.12	547.09
Trenching Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62

Time Slice 1/1/2019-12/31/2019 Active Days: 313	12.79	77.00	70.13	0.02	12.11	3.91	16.01	2.54	3.59	6.13	20,888.26
Asphalt 03/01/2018-12/31/2019	2.62	16.26	16.61	0.00	0.01	1.16	1.17	0.00	1.06	1.07	2,604.94
Paving Off-Gas	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.57	16.19	15.92	0.00	0.00	1.15	1.15	0.00	1.06	1.06	2,438.47
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.77
Paving Worker Trips	0.02	0.03	0.68	0.00	0.01	0.00	0.01	0.00	0.00	0.01	153.70
Mass Grading 01/01/2018-12/31/2019	9.79	58.58	50.16	0.02	12.10	2.63	14.73	2.54	2.42	4.96	17,710.61
Mass Grading Dust	0.00	0.00	0.00	0.00	12.01	0.00	12.01	2.51	0.00	2.51	0.00
Mass Grading Off Road Diesel	9.35	54.30	46.49	0.00	0.00	2.47	2.47	0.00	2.27	2.27	15,461.48
Mass Grading On Road Diesel	0.39	4.19	1.74	0.02	0.06	0.15	0.21	0.02	0.14	0.16	1,813.63
Mass Grading Worker Trips	0.05	0.09	1.93	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.50
Trenching 02/01/2018-12/31/2019	0.37	2.17	3.35	0.00	0.00	0.12	0.12	0.00	0.11	0.11	572.71
Trenching Off Road Diesel	0.37	2.16	3.24	0.00	0.00	0.12	0.12	0.00	0.11	0.11	547.09
Trenching Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.62

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/1/2012 - 12/31/2013 - Phase 1 Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 1/1/2014 - 12/31/2015 - Phase II Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

2/2/2011 5:13:45 PM

The following mitigation measures apply to Phase: Mass Grading 1/1/2016 - 12/31/2017 - Phase III Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

The following mitigation measures apply to Phase: Mass Grading 1/1/2018 - 12/31/2019 - Phase IV Grading

For Soil Stablizing Measures, the Water exposed surfaces 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%

For Unpaved Roads Measures, the Manage haul road dust 3x daily watering mitigation reduces emissions by:

PM10: 61% PM25: 61%