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State Clearinghouse Number: 2018102008

ANCHOR QEA

Contanda Renewable Diesel Bulk Liquid Terminal Development Project Draft Environmental Impact Report

Prepared for the Port of Stockton

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Prepared for
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Project Number: 160377-01.06

Executive Summary

This Draft Environmental Impact Report (DEIR) was prepared in compliance with the California Environmental Quality Act (CEQA) to assist the Port of Stockton (Port) in considering the approval of the proposed Contanda Terminal (proposed project) located at Port Roads 11 and 13 and Port Roads G and H in Stockton, California, in accordance with 22 California Code of Regulations (CCR) Section 66265 et seq. Under the proposed project, Contanda Terminals LLC, (Contanda) proposes to develop a new bulk liquid terminal at the Port to receive, store, and transfer renewable diesel, a diesel product made from renewable resources.

The Port has principal responsibility for making a determination on the proposed project and is the lead agency under CEQA (California Public Resources Code [PRC] Section 21151.1) and the CEQA Guidelines for Implementation (14 CCR 15081.5) for preparation and approval of the DEIR.

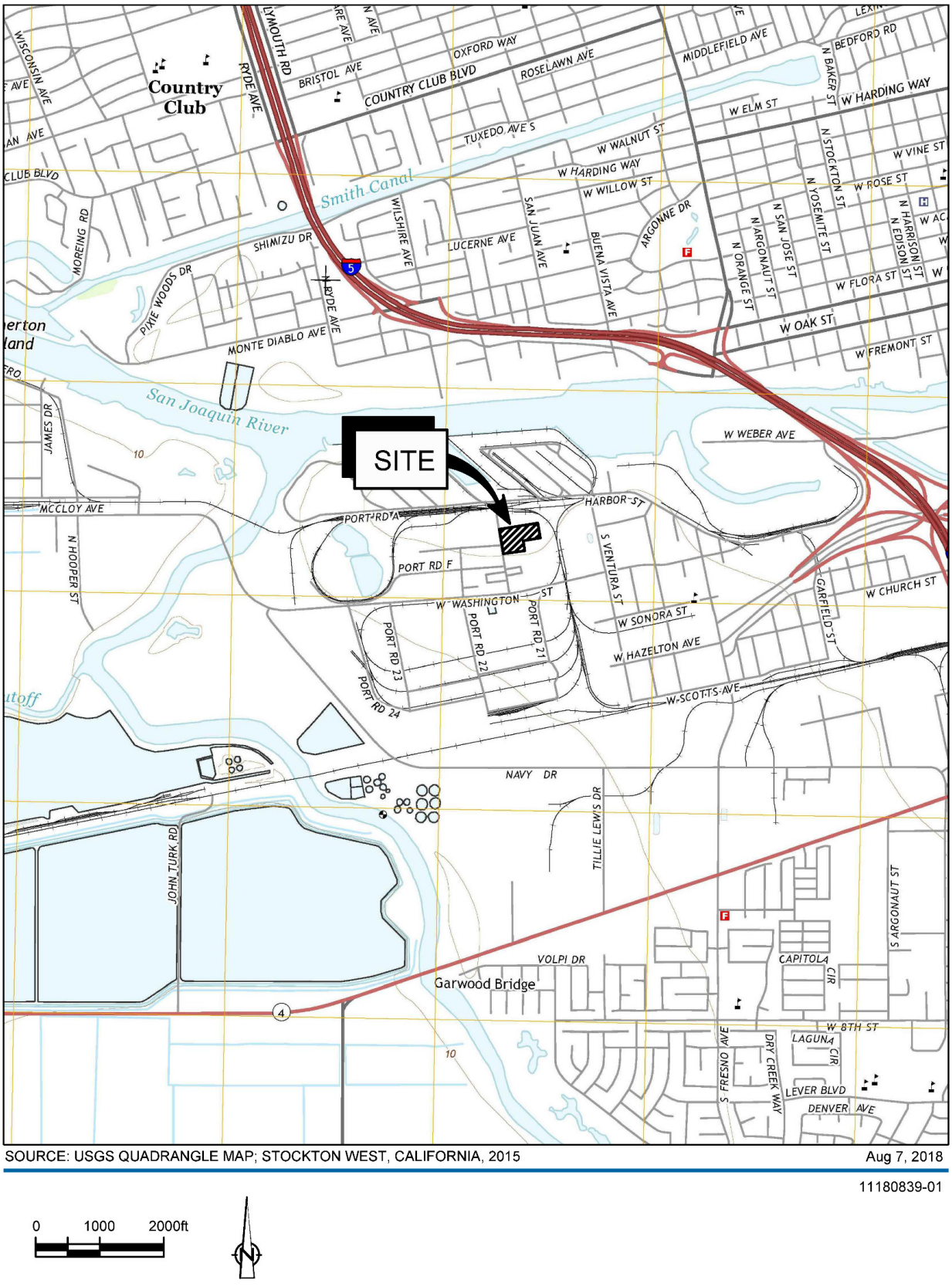
The Port aims to accomplish the following as part of this DEIR:

- Describe the proposed project and its regulatory background
- Identify any significant environmental effects associated with the proposed project
- Provide a discussion of alternatives and feasible mitigation measures for environmental resources where significant impacts are identified

As detailed in the accompanying Initial Study (IS) included in Appendix D, the proposed project is not expected to result in environmental impacts in several resource areas. Therefore, this document is a Focused EIR that relies on the analyses presented in the IS and is focused on the areas that may result in environmental impacts: air quality, greenhouse gases (GHG), hazards and hazardous materials, and traffic and transportation. In addition, a cultural resources evaluation is included in this DEIR to comply with CEQA provisions, including updates made in 2015 pursuant to Assembly Bill 52 regarding Native American consultation and resources.

Proposed Project

Contanda proposes to develop a new bulk liquid terminal at the Port to receive, store, and transfer renewable diesel, a diesel product made from renewable resources. As part of the proposed project, Contanda would enter into a 15-year lease with five 5-year extension options with the Port and would construct sixteen aboveground storage tanks (ASTs) of varying capacity at a vacant parcel at the Port. Following construction, Contanda would receive renewable diesel by rail and ship and transfer it to ASTs for storage. Product would then be transferred from ASTs to trucks for deliveries to the local Northern California market. The proposed project would also include construction of secondary containment, truck racks, and pumps and piping to transfer liquids between the new ASTs, vessels, rail cars, and trucks.



SOURCE: USGS QUADRANGLE MAP; STOCKTON WEST, CALIFORNIA, 2015

Aug 7, 2018

11180839-01

Source: GHD 2018

ANCHOR QEA

Figure ES-1

Project Site and Vicinity

Draft Environmental Impact Report
Contanda Renewable Diesel Bulk Liquid Terminal Development Project

The Port prepared this DEIR using available technical information and incorporating potential alternatives to the proposed project. As required by CEQA, the Port must evaluate the information in this DEIR, including the proposed mitigation measures and potentially feasible alternatives, before deciding whether to approve the proposed project or an alternative.

Project Objectives

Pursuant to the CEQA Guidelines and 14 CCR 15124, a "statement of the objectives sought by the proposed project" must be provided as part of the project description in an EIR. The proposed project's goal is to develop a new bulk liquid terminal to distribute renewable diesel to support broader California low-carbon fuel standard goals for lower-emitting fuels.

To accomplish this goal, the following key project objectives must be accomplished:

- Provide a facility capable of accommodating domestically produced renewable diesel
- Receive and stage trucks for distribution of renewable diesel to the Northern California market
- Optimize the use of Port land to develop bulk liquid storage facilities to promote safe and efficient shipment and storage of low-carbon energy product

Summary of Project Alternatives

The CEQA Guidelines (14 CCR 15126) require that a DEIR consider a range of reasonable alternatives to the project or to the location of the project that would feasibly attain most of its basic objectives but would avoid or substantially lessen any of the significant effects of the project. The alternatives considered in this DEIR are the following:

- Alternative 1: No Project Alternative
- Alternative 2: Reduced Project Alternative

A complete evaluation of these alternatives—including their ability to meet the objectives of the proposed project and their ability to avoid or substantially reduce significant environmental impacts—is provided in Section 6 of this DEIR.

Alternative 1: No Project Alternative

The No Project Alternative, which is required by CEQA, represents what would reasonably be expected to occur in the foreseeable future if the proposed project were not approved. Under this alternative, no new developments would be constructed at the project site; therefore, there would be no operations. Under this scenario, the Port could not preclude future development on the site, but such operations are speculative at this point.

Alternative 2: Reduced Project Alternative

The Reduced Project Alternative includes full buildout of the project site, but with a reduced number of tanks constructed and therefore reduced operations. Under this alternative, a maximum of 10 tanks with a maximum capacity of 20,000 barrels would be constructed and overall throughput would be reduced. There would be no vessel calls under the Reduced Project Alternative.

Notice of Preparation

The Port distributed the Notice of Preparation (NOP; Appendix B) for the proposed project for public review on October 3, 2018, for a 30-day period ending on November 2, 2018. The Port also released a supplemental NOP on November 26, 2018, for a 30-day review period ending December 26, 2018. Four comment letters were received, all of which are included in Appendix C of the DEIR. The letters were received from the following:

- California Department of Transportation (Caltrans)
- Central Valley Regional Water Quality Control Board
- California Native American Heritage Commission (two letters)

Summary of Impacts and Mitigation

Anticipated environmental effects associated with the proposed project are evaluated in Sections 3 and 4 of this DEIR. Feasible mitigation measures that could minimize significant adverse impacts are also identified. Table ES-1 presents a summary of the environmental impacts of, proposed mitigation measures for, and residual impacts of the proposed project.

The proposed project would result in significant and unavoidable air quality and GHG impacts. The proposed project would result in no impact or less-than-significant impacts to the following resource areas: aesthetics; agriculture and forestry resources; biological resources; cultural resources; geology and soils; hydrology and water quality; land use and planning; mineral resources; noise; population and housing; public services; recreation; and utilities and service systems. A brief discussion of these resource areas is provided in Section 1.4.

Summary of Cumulative Impacts

For this DEIR, the potential for other regional projects to contribute to cumulative impacts was analyzed using a list of closely related projects that would be constructed in the cumulative geographic scope (Table 21). In consideration of these projects, cumulative impact analyses for each environmental resource area potentially affected by the proposed project are presented in Section 4. Implementation of the proposed project, cumulatively combined with other related past, present, or probable future projects, may result in substantial cumulative adverse impacts related to air quality and GHG.

Table ES-1
Summary of Proposed Project Impacts and Proposed Mitigation Measures

	Impact Determination	Mitigation Measures	Impact Determination after Mitigation
Air Quality			
AQ-1: Would the proposed project's emissions conflict with or obstruct implementation of the applicable air quality plan?	Significant impact	MM-AQ-1 MM-AQ-2	Significant and unavoidable impact
AQ-2: Would the proposed project's emissions violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Significant impact	MM-AQ-1 MM-AQ-2	Significant and unavoidable impact
AQ-3: Would the proposed project's emissions result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	Significant impact	MM-AQ-1 MM-AQ-2	Significant and unavoidable impact
AQ-4: Would the proposed project expose sensitive receptors to substantial pollutant concentrations?	Less-than-significant impact	None	Less-than-significant impact
AQ-5: Would the proposed project create objectionable odors affecting a substantial number of people?	Less-than-significant impact	None	Less-than-significant impact
Biological Resources			
BIO-1: Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Significant impact	MM-BIO-1	Less-than-significant impact
BIO-2: Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	No impact	None	No impact
BIO-3: Would the proposed project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	No impact	None	No impact

	Impact Determination	Mitigation Measures	Impact Determination after Mitigation
BIO-4: Would the proposed project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No impact	None	No impact
BIO-5: Would the proposed project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No impact	None	No impact
BIO-6: Would the proposed project conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	Significant impact	MM-BIO-1	Less-than-significant impact
Cultural and Historic Resources			
CHR-1: Would the proposed project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	No impact	None	No impact
CHR-2: Would the proposed project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	Less-than-significant impact	Project Condition CHR-1	Less-than-significant impact
CHR-3 Would the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Less-than-significant impact	None	Less-than-significant impact
CHR-4: Would the proposed project disturb any human remains, including those interred outside of formal cemeteries?	Less-than-significant impact	Project Condition CHR-1	Less-than-significant impact
CHR-5: Would the proposed project cause a substantial adverse change in the significance of a tribal cultural resource? A tribal cultural resource is defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024. 1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Less-than-significant impact	Project Condition CHR-1	Less-than-significant impact

	Impact Determination	Mitigation Measures	Impact Determination after Mitigation
Geology and Soils			
GEO-1: Would the proposed project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: • Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. • Strong seismic ground shaking • Seismic-related ground failure, including liquefaction • Landslides?	Less-than-significant impact	Project Condition GEO-1	Less-than-significant impact
GEO-2: Would the proposed project have a substantial adverse effect from substantial soil erosion or the loss of topsoil?	No impact	None	No impact
GEO-3: Would the proposed project have a substantial adverse effect by being located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	No impact	None	No impact
GEO-4: Would the proposed project have a substantial adverse effect by being located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	No impact	None	No impact
GEO-5: Would the proposed project have a substantial adverse effect related to a location with soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	No impact	None	No impact
GEO-6: Would the proposed project have a substantial adverse effect by directly or indirectly destroying a unique paleontological resource or site or unique geologic feature?	No impact	None	No impact
Greenhouse Gas Emissions			
GHG-1: Would the proposed project's greenhouse gas emissions, either directly or indirectly, have a significant impact on the environment?	Significant impact	MM-AQ-1 MM-AQ-2	Significant and unavoidable impact
GHG-2: Would the proposed project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less-than-significant impact	None	Less-than-significant impact

	Impact Determination	Mitigation Measures	Impact Determination after Mitigation
Hazards and Hazardous Materials			
HAZ-1: Would the proposed project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less-than-significant impact	None	Less-than-significant impact
HAZ-2: Would the proposed project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Less-than-significant impact	None	Less-than-significant impact
HAZ-3: Would the proposed project emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	No impact	None	No impact
HAZ-4: Would the proposed project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No impact	None	No impact
HAZ-5: Would the proposed project be located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	No impact	None	No impact
HAZ-6: Would the proposed project be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	No impact	None	No impact
HAZ-7: Would the proposed project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less-than-significant impact	None	Less-than-significant impact
HAZ-8: Would the proposed project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	No impact	None	No impact
Noise and Vibration			
NV-1: Would the proposed project expose people to, or generate, noise levels in excess of standards established in local general plan or noise ordinance or applicable standards of other agencies?	Less-than-significant impact	None	Less-than-significant impact
NV-2: Would the proposed project expose people to, or generate, ground-borne vibration levels in excess of the Caltrans vibration damage potential threshold criteria?	Less-than-significant impact	None	Less-than-significant impact
NV-3: Would the proposed project create a substantial permanent increase in ambient noise levels in the study area above levels existing without the proposed project?	Less-than-significant impact	None	Less-than-significant impact

	Impact Determination	Mitigation Measures	Impact Determination after Mitigation
NV-4: Would the proposed project create a substantial temporary or periodic increase in ambient noise levels in the study area above levels existing without the proposed project?	Less-than-significant impact	None	Less-than-significant impact
NV-5: Would the proposed project expose people residing or working on the project site to excessive noise levels as a result of activities at a public airport or private airstrip?	No impact	None	No impact
Traffic and Transportation			
TT-1: Would the proposed project conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	Less-than-significant impact	None	Less-than-significant impact
TT-2: Would the proposed project conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?	No impact	None	No impact
TT-3: Would the proposed project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	No impact	None	No impact
TT-4: Would the proposed project substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Less-than-significant impact	None	Less-than-significant impact
TT-5: Would the proposed project result in inadequate emergency access?	Less-than-significant impact	None	Less-than-significant impact
TT-6: Would the proposed project conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	No impact	None	No impact

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ABBREVIATIONS

--	not applicable
µg/m^3	micrograms per cubic meter
AB	Assembly Bill
AQMP	Air Quality Management Plan
AST	aboveground storage tank
BAU	business-as-usual
BMP	best management practice
BNSF	BNSF Railway
BPS	Best Performance Standard
BSG	below site grade
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standard
Cal/OSHA	California Occupational Safety and Health Administration
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAP	Climate Change Action Plan
CCR	California Code of Regulations
CCT	Central California Traction Company
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	chlorofluorocarbon
CH_4	methane
CHRIS	California Historical Resources Information System
CHSC	California Health and Safety Code
CI	carbon intensity
City	City of Stockton
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalence

Contanda	Contanda Terminals LLC
CPT	cone penetration test
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
CVRWQCB	Central Valley Regional Water Quality Control Board
dBA	A-weighted decibel
DEF	diesel exhaust fluid
DEIR	Draft Environmental Impact Report
DOT	U.S. Department of Transportation
EIR	Environmental Impact Report
EO	Executive Order
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
Fed. Reg.	Federal Register
FGC	California Fish and Game Code
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
General Plan	Envision Stockton 2040 General Plan Public Review Draft
GHG	greenhouse gas
GIS	geographical information system
GWP	Global warming potential
H_2S	hydrogen sulfide
HCFC	hydrochlorofluorocarbon
HFC	hydrofluorocarbon
HMM	Hazardous Materials Management Group
HMMP	Hazardous Materials Management Plan
HMTA	Hazardous Materials Transportation Act
HMTUSA	Hazardous Materials Transportation Uniform Safety Act
HRA	health risk assessment
I-5	Interstate 5
IS	Initial Study
LCFS	Low Carbon Fuel Standard
LEPC	Local Emergency Planning Committee
L_{eq}	equivalent continuous noise level
L_{max}	maximum sound level
LOS	level of service
MBTA	Migratory Bird Treaty Act

MCE	Maximum Considered Earthquake
NAAQS	national ambient air quality standard
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PM	particulate matter
$PM_{2.5}$	PM less than 2.5 microns in diameter
PM_{10}	PM less than 10 microns in diameter
Port	Port of Stockton
ppb	part per billion
ppm	part per million
PPV	peak particle velocity
PRC	Public Resources Code
RCMP	Regional Congestion Management Program
RMP	risk management plan
ROG	reactive organic gas
RTP	Regional Transportation Plan
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SERC	State Emergency Response Commission
SIP	State Implementation Plan
SJCEHD	San Joaquin County Public Health Services, Environmental Health Division
SJCOG	San Joaquin Council of Governments
SJMSCP	San Joaquin County Multi-Species Habitat Conservation and Open Space Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	sulfur dioxide
SPCC	Spill Prevention Control and Countermeasure Plan
SR	State Route

SR-4	State Route 4
SR-99	State Route 99
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminant
TCR	tribal cultural resource
UP	Union Pacific Railroad
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound

1 Introduction and Project Purpose

1.1 Intended Use of this Environmental Impact Report

This Draft Environmental Impact Report (DEIR) was prepared by the Port of Stockton (Port) to identify the potential environmental impacts of the proposed Contanda Terminal (proposed project) under the California Environmental Quality Act (CEQA; Public Resources Code [PRC] Division 13, Section 21000 et seq. and the CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 et seq.).

CEQA, enacted by the California legislature in 1970, requires public agency decision makers to consider the environmental effects of their actions. The primary purposes of this DEIR are to inform the public, decision makers, and other responsible and interested agencies of the following information:

- Identification and evaluation of potential significant environmental effects of the proposed project
- The manner in which environmental effects can be avoided or significantly reduced
- Any effects that, even with implementation of mitigation measures, would be unavoidable and adverse
- Identification and analysis of alternatives that may avoid or substantially lessen any significant environmental effects of the proposed project

This DEIR is currently being circulated to potentially affected agencies and the public for review and comment for a 45-day review period from January 14 to February 27, 2019.

1.2 Project Background

In 2006, California adopted the Global Warming Solutions Act (also known as Assembly Bill [AB] 32), which aims to reduce greenhouse gas (GHG) emissions in California to 1990 levels by 2020. The California Air Resources Board (CARB) has developed several transportation-related measures to achieve AB 32 goals, including a clean fuels standard known as the Low Carbon Fuel Standard (LCFS). California's LCFS was adopted in 2009 and is a performance-based standard requiring petroleum refiners and other fuel providers to reduce the carbon-intensity of transportation fuels used in California by 10% by 2020 (Promotum 2015). The standard also requires substitutes for fossil fuels that demonstrate lower lifecycle GHG emissions than the fuels they replace. Renewable diesel, ethanol, and biodiesel all serve as alternative pathways that reduce the levels of GHG emissions, depending on their source and production.

Much like biodiesel, renewable diesel is made from non-petroleum resources such as natural fats, vegetable oils, and greases. However, renewable diesel is processed similar to the way petroleum

diesel is produced, which makes it the same chemically as petroleum diesel; therefore, it burns cleaner than biodiesel. Because it has the same chemical structure as petroleum diesel, renewable diesel can be used in engines that are designed to run on conventional diesel fuel without blending required, and renewable diesel can be used in existing diesel infrastructure and engines without modifications.

Because renewable diesel burns more completely during the combustion process, tailpipe emissions are reduced. The California Environmental Protection Agency (CalEPA) found that renewable diesel has about 30% less particulate matter (PM) emissions and 10% less nitrogen oxides (NO_X) than ultra-low sulfur diesel (CalEPA 2015). In addition, renewable diesel does not contain benzene, which becomes an airborne carcinogen when burned in petroleum diesel. Carbon emission reductions, however, are more nuanced and depend on the feedstock used to produce renewable diesel. The California Energy Commission, which has measured the emissions of a wide variety of alternative fuels, says renewable diesel has 58 to 80% lower GHG emissions than petroleum diesel. Carbon intensity (CI) is a measure of the net GHG impact of a particular material or activity, with lower CI values indicating lower GHG emissions. Renewable diesel made from animal tallow has a CI of 19.65, while renewable diesel made from domestic soybeans has a CI of 82.16. For comparison, ultra-low-sulfur diesel has a CI of 94.71 and biodiesel made from domestic soybeans has a CI of 82.35 (CARB 2009).

Renewable diesel is the most common diesel substitute used in California. While the majority of renewable diesel used in California is imported from overseas, all renewable diesel at the new facility would be sourced domestically.

1.3 Agency Roles and Responsibilities

The CEQA Guidelines identify the lead agency as the public agency with the principal responsibility for carrying out or approving a project (14 CCR 15367). The Port is the CEQA lead agency for the proposed project and has the primary responsibility for issuing a lease to Contanda Terminals LLC (Contanda). The Port aims to accomplish the following as part of this DEIR:

- Describe the proposed project and regulatory background
- Identify any significant environmental effects associated with construction and operation of the proposed facility
- Provide a discussion of alternatives and feasible mitigation measures for environmental resources where significant effects are identified

Projects or actions undertaken by the lead agency (in this case, the Port), may require subsequent oversight, approvals, or permits from other public agencies. Other such agencies are referred to as

responsible agencies and trustee agencies. Pursuant to CEQA Guidelines Sections 15381 and 15386, as amended, responsible agencies and trustee agencies are defined as follows:

- A **responsible agency** is a public agency that proposes to carry out or approve a project for which a lead agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA, the term "responsible agency" includes all public agencies other than the lead agency that have discretionary approval authority over a project (CEQA Guidelines Section 15381; see Table 1).
- A **trustee agency** is a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the state of California (CEQA Guidelines Section 15386). Trustee agencies have jurisdiction over natural resources held in trust for the people of California but do not have a legal authority over approving or carrying out a project. CEQA Guidelines Section 15386 designates only the following four agencies as potential trustee agencies for projects subject to CEQA, none of which are applicable to the proposed project:
  - California Department of Fish and Wildlife (CDFW), regarding fish and wildlife, native plants designated as rare or endangered, game refuges, and ecological reserves
  - California State Lands Commission, regarding state-owned "sovereign" lands, such as the beds of navigable waters and state school lands
  - California Department of Parks and Recreation, regarding units of the state park system
  - University of California, regarding sites within the Natural Land and Water Reserves System

In addition to the Port approval, the following permits and approvals would be required for the proposed project. This DEIR may be used to support decisions related to the following permits/approvals:

- National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit from the Central Valley Regional Water Quality Control Board (CVRWQCB)
- Building Permit from the City Building Department
- Plan review from the City Fire Department

Table 1 summarizes relevant regulatory agencies and their statutory authority.

Table 1
Regulatory Agencies and Authority

Regulatory Agency	Jurisdiction	Statutory Authority/Implementing Regulations
State Agencies		
California Department of Transportation	Responsible agency	Permitting authority under the Streets and Highways Code for road crossings and signage on transportation routes affected by pipeline construction activities. The proposed project is not expected to require a Caltrans permit.
Office of Historic Preservation	Responsible agency	Consultations under Section 106 of the NHPA with state and federal lead agencies regarding impacts on cultural resources that are either listed, or eligible for listing, on the NRHP. The proposed project is not expected to require Section 106 consultation with the State Historic Preservation Officer.
San Joaquin Valley Air Pollution Control District	Responsible agency	Review authority under the California Clean Air Act and responsibility for implementing federal and state regulations at the local level, permitting stationary sources of air pollution, and developing the local elements of the SIP. The proposed project is not expected to require a SJVAPCD permit.
Central Valley Regional Water Quality Control Board	Responsible agency	Permitting authority for water quality, including point and non-point source discharges. The proposed project is expected to require a NPDES Construction General Permit.
Local Agencies		
City of Stockton Building Department	Responsible agency	Approval of mechanical, electrical, demolition, and building permits.
Stockton Fire Department	Responsible agency	Approval of fire protection system.

1.3.1 Consultation and Coordination

The Port considers public participation to be an integral part of the CEQA process. Public participation ensures that there is two-way communication between the public and the Port decision makers and that public concerns and input are considered in the final decision. The Port's public participation process ensures that interested persons are informed about discretionary decisions and have the opportunity to provide input.

1.3.1.1 Notice of Preparation

After deciding that an EIR is needed, the state lead agency (in this case, the Port) is required to prepare and distribute a notice informing interested parties that an EIR will be prepared. CEQA requires that the state lead agency prepare a Notice of Preparation (NOP) to inform interested parties of a proposed project and to solicit their participation in the EIR scoping process. The CEQA

Guidelines state that an NOP be sent "immediately after deciding that an environmental impact report is required for the project" (CEQA Guidelines Section 15082[a]) and include "sufficient information describing the project and the potential environmental effects to enable the responsible agencies to make a meaningful response" (CEQA Guidelines Section 15082[a][1]). The Port distributed the NOP (Appendix B) for the proposed project on October 3, 2018, for a 30-day public review period ending on November 2, 2018. During development of the DEIR, a project change required the issuance of a supplemental NOP. The supplemental NOP was released on November 26, 2018, for a 30-day period ending on December 26, 2018. Public comments from both NOPs were considered in this DEIR.

1.3.1.2 Public Scoping and Agency Coordination

The CEQA Guidelines recommend that public scoping be combined to the extent possible with consultation with responsible agencies, as required under 14 CCR 15086. Consultation is conducted with agencies that will be locally involved in the environmental review process, as well as state and federal agencies and tribal governments, as appropriate.

CEQA Guidelines Section 15096(b) requires that the lead agency formally consult with responsible and trustee agencies. On October 3, 2018, the Port filed a NOP with the Governor's Office of Planning and Research (OPR) and the San Joaquin County Clerk, indicating that a copy of the NOP be sent to the following agencies:

- California Air Resources Board (CARB)
- CDFW
- Native American Heritage Commission (NAHC)
- Office of Historic Preservation
- CVRWQCB
- State Water Resources Control Board

The November 2018 Supplemental NOP was also filed with OPR and the San Joaquin County Clerk and sent to all agencies previously notified.

Four comment letters were received from the following agencies:

- California Department of Transportation (Caltrans)
- CVRWQCB
- NAHC (two letters)

The letters and a summary of the public and agency comments received on both NOPs are included as Appendix C.

1.3.1.3 Assembly Bill 52

AB 52 became effective on July 1, 2015, requiring lead agencies to consider the effects of projects on tribal cultural resources (TCRs) and to conduct notification and consultation with federally and non-federally recognized Native American tribes and NAHC early in the environmental review process. Two Native American tribes, the Buena Vista Tribe of Miwuk Indians and the Wilton Rancheria Tribe, have requested consultation on CEQA documentation for projects at the Port. The Port initiated consultation with the two tribes and requested a search of NAHC's Sacred Lands Information File in November 2018. No responses or requests for consultation were received.

1.4 Scope of this Environmental Impact Report

CEQA Guidelines Section 15125 requires that an EIR include a description of the physical environmental conditions near the proposed project as they exist at the time the NOP is published, or if no NOP is published, at the time the environmental analysis is commenced, from both a local and regional perspective. For the proposed project, the baseline period is defined as October 2018. The environmental setting normally constitutes the baseline physical conditions by which a lead agency determines whether an impact is significant.

As discussed further in Sections 2.1 and 2.2, the project site is currently vacant and not being used for Port operations. Contanda currently operates a bulk liquid terminal at Port Road A. The Port Road A site encompasses approximately 4.1 acres along with an easement granted by the Port for an aboveground pipeline corridor running from the Port Road A terminal along existing pipeline support trestle to Port Wharf No. 8. Renewable diesel is a combustible product that the Port Road A facility cannot accommodate in its tanks; therefore, the two project sites would operate independently. Therefore, this DEIR considers the vacant site with no operations as baseline conditions.

As detailed in the Initial Study (IS) prepared for this project (Appendix D), the following resource areas are not addressed in this DEIR:

- **Aesthetics:** The existing visual character in the project area is not considered scenic and the visual character of the project area would not be changed by the proposed improvements. Permanent visual changes would consist of new spill control infrastructure and above-grade improvements, including the pipeline and pump station. The proposed project also includes construction of the single-story support building, which would be similar in size and visual character as other buildings in the vicinity of the proposed project.
- **Agriculture and forestry:** The City of Stockton's (City's) 2035 General Plan designates the project site for Port use, and the zoning classification is Port District (City 2007, 2018a). Neither the project site nor the immediate surrounding areas currently support agricultural use or forestry resources. There are no timberland zoned properties within San Joaquin County as of 2001 (Stockton Port District 2012); the nearest forest area is the Stanislaus

Forest, which is more than 50 miles away. All property surrounding the project site has been developed or planned for industrial or urban land uses. The project area is zoned for non-agricultural uses.

- **Land use:** The City's 2035 General Plan designates the project site for industrial use, and the zoning classification of the project site and surrounding parcels is Port District or Industrial, General. The proposed project involves an industrial use, which is consistent with the current zoning and would not conflict with any land use or other plans for the project site.
- **Mineral resources:** The project area is classified as a Mineral Resource Zone-1 (City 2007), as such, adequate information indicates that no significant mineral deposits are present, or it is judged that little likelihood exists for their presence. The project site does not contain any known mineral resources, including any rock, sand, or gravel resources. Therefore, the proposed project would result in no impacts related to mineral resources.
- **Recreation:** There are limited park resources within the immediate project area, likely due to the industrial zoning. Neither the construction nor the operation of the proposed facility would increase the use of existing neighborhood and regional parks or other recreational facilities. The proposed project does not include construction or expansion of any recreational facilities and would not result in increased demand or other effects to recreational facilities.

1.5 Draft Environmental Impact Report Organization

The content and format of this DEIR are organized into the following sections to meet the requirements of CEQA and the CEQA Guidelines:

- **Executive Summary.** Summarizes the proposed project and alternatives, potential impacts, and mitigation measures
- **Section 1 – Introduction and Project Purpose.** Describes the purpose and use of the DEIR and outlines the organization of the DEIR
- **Section 2 – Project Description.** Describes the proposed project's history, provides details on the construction and operation of the proposed project, and discloses objectives of the proposed project
- **Section 3 – Environmental Impact Analysis.** Describes the current environmental conditions existing near the proposed project and discusses the environmental setting, significance criteria, environmental impacts, and mitigation measures for each environmental resource area examined
- **Section 4 – Cumulative Impacts.** Discusses other categories of environmental impacts that must be evaluated in an EIR in addition to those addressed in Section 3
- **Section 5 – Other Required Analysis.** Identifies unavoidable significant impacts, significant irreversible environmental changes, and direct and indirect growth-inducing impacts of the proposed project

- **Section 6 – Alternatives.** Discusses a range of reasonable alternatives to the proposed project that would feasibly attain all or most of the basic objectives and would avoid or substantially lessen any of the potentially significant environmental effects of the proposed project
- **Section 7 – References.** Provides a list of references used to provide information in preparation of the DEIR
- **Appendices.** The following appendices are attached to this DEIR:
  - Appendix A: List of Preparers
  - Appendix B: Notice of Preparation
  - Appendix C: Comments Received on the Notice of Preparation
  - Appendix D: Initial Study
  - Appendix E: Air Quality and Greenhouse Gas Report
  - Appendix F: Special-Status Species Potentially Present in the Project Area

2 Project Description

Contanda proposes to develop a new bulk liquid terminal at the Port to receive, store, and transfer renewable diesel, a diesel product made from renewable resources. As part of the proposed project, Contanda would enter into a 15-year lease with five 5-year extension options with the Port and would construct sixteen aboveground storage tanks (ASTs) of varying capacity at a vacant parcel at the Port. Following construction, Contanda would receive renewable diesel by rail and vessels and transfer it to ASTs for storage. Product would then be transferred from ASTs to truck for deliveries to the local market. The proposed project would also include construction of secondary containment, truck racks, and pumps and piping to transfer liquids between the new ASTs, berth, rail cars, and trucks.

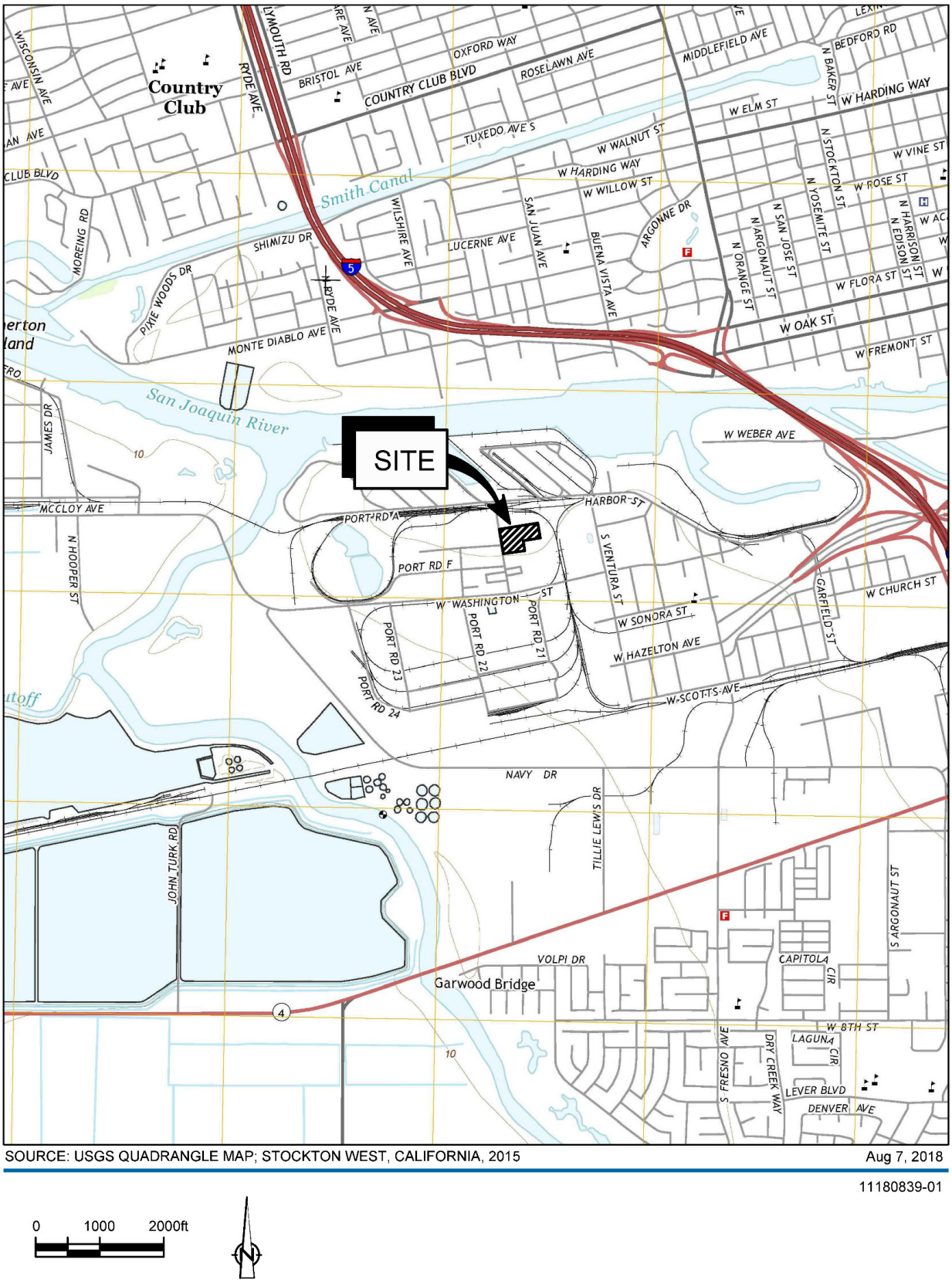
2.1 Environmental Setting

2.1.1 Regional Setting

The proposed project is located within the City's urban core, which is characterized by a mix of heavy industrial uses with limited landscape features, older residential neighborhoods, neighborhood commercial shopping centers, and a variety of other commercial and industrial parcels. In the area surrounding the project site, the Port leases property for a variety of industrial uses, characterized by the presence of storage tanks, maritime terminals, cement and grain silos, railroad facilities, large storage buildings, and stockpiles of various commodities. The City's 2035 General Plan (City 2007) designates the project site for industrial use, and the zoning classification of the project site and surrounding parcels is Port District or Industrial, General.

2.1.2 Project Setting

The project site consists of a 4.1-acre parcel of vacant dirt lot located within the Port between Port Road G and Port Road H, and Port Road 11 and Port Road 13 (Figure 1). The project site was part of a U.S. government facility sometime between 1940 and 1963. During that time, several buildings were located on the eastern portion of the project site and one building was located in the southwestern corner of the site. All structures were removed after 1963 and the site has been used as parking and storage for various vessels and vehicles since that time. The nearest surface water body to the project site is the San Joaquin River (Stockton Deep Water Ship Channel), located approximately 1,000 feet northwest, north, and northeast of the project site. While most of the site is vacant, there are several trees on the edge of the property and in a strip in the middle of the property.



SOURCE: USGS QUADRANGLE MAP; STOCKTON WEST, CALIFORNIA, 2015 Aug 7, 2018

11180839-01

Source: GHD 2018

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Figure 1

Project Site and Vicinity

Draft Environmental Impact Report
Contanda Renewable Diesel Bulk Liquid Terminal Development Project

2.1.3 Relationships to Other Projects

In addition to the project site, Contanda leases property at Port Road A from the Port, which is currently being expanded (the expansion was analyzed in the July 2018 *Initial Study/Mitigated Negative Declaration* [IS/MND] *for the Port Road A Facility Expansion Project*; Port 2018). The Port Road A site encompasses approximately 3 acres along with an easement granted by the Port for an aboveground pipeline corridor running from the Port Road A terminal along existing pipeline support trestle to Port Wharf No. 8. As discussed in the Port Road A IS/MND, Contanda is removing fourteen existing ASTs and replacing them with five new ASTs of greater capacity. Contanda currently receives, stores, and distributes biodiesel and diesel exhaust fluid (DEF) for its customers at the Port Road A facility. Product is received and shipped via manifest rail, ocean-going vessels and trucks at the levels presented in Table 2.

Table 2
Shipments in Calls and Volume at the Port Road A Facility

	Vessels		Rail		Truck	
	Number	**Million Tons**	**Number**	**Million Tons**	**Number**	**Million Tons**
Receipts	16	60,000	300	54,789	29	625
Shipments	0	0	0	0	6,159	84,358
Total	**16**	**60,000**	**300**	**54,789**	**6,188**	**84,983**

As discussed further in Section 2.2.4, while the proposed project would use the existing rail racks at the Port Road A facility for unloading product, project operations at the two sites would be separate and the two facilities would serve different customers. This separation is mainly a practical one; renewable diesel is a combustible product that the Port Road A facility cannot accommodate in its pipelines or tanks. Renewable diesel offloaded at the Port Road A facility would be pumped to the project site through new and separate pipelines. However, because the two sites would share a common rail facility, any potential environmental effects of increasing rail operations at the Port Road A facility are assessed in this DEIR.

2.2 Project Overview

2.2.1 Project Objectives

Pursuant to the CEQA Guidelines and 14 CCR 15124, a "statement of the objectives sought by the proposed project" must be provided as part of the project description in an EIR. The proposed project's goal is to develop a new bulk liquid terminal to distribute renewable diesel to support broader California low-carbon fuel standard goals for lower-emitting fuels.

To accomplish this goal, the following key project objectives must be accomplished:

- Provide a facility capable of accommodating domestically produced renewable diesel
- Receive and stage trucks for distribution of renewable diesel to the Northern California market
- Optimize the use of Port land to develop bulk liquid storage facilities to promote safe and efficient shipment and storage of low-carbon energy product

2.2.2 CEQA Baseline

CEQA Guidelines Section 15125 requires that an EIR include a description of the physical environmental conditions in the vicinity of the proposed project as they exist at the time the NOP is published, or if no NOP is published, at the time the environmental analysis is commenced, from both a local and regional perspective. These environmental conditions are referred to as the environmental setting. Further, CEQA Guidelines Section 15125(a) states that "the environmental setting normally constitutes the baseline physical conditions by which a lead agency determines whether an impact is significant." As discussed in Section 2.1.2, the project site is currently vacant with no use; therefore, there are no operations associated with the CEQA baseline. While rail would be transported to an existing rail facility at Contanda's Port Road A site, none of the current rail activity at that site would serve the new terminal, and therefore, no operations at the Port Road A site are attributed to the baseline.

2.2.3 Proposed Project Construction

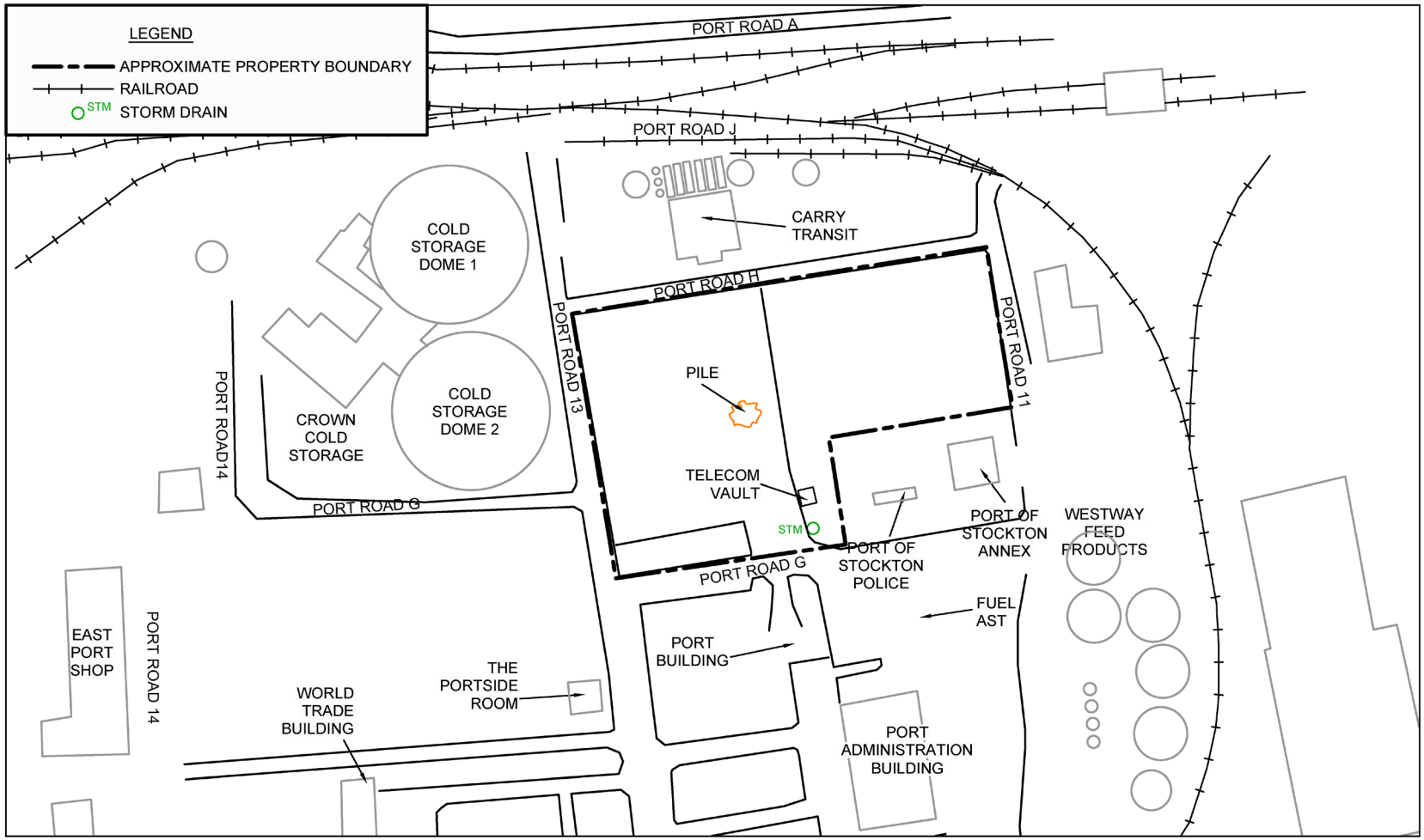
With the proposed project, Contanda would construct a total of 16 ASTs: 10 tanks with a maximum capacity of 20,000 barrels each and six tanks with a maximum capacity of 30,000 barrels each, all of which would require secondary containment. The 20,000-barrel tanks would be 60 feet in diameter by 50 feet in height and the 30,000-barrel tanks would be 60 feet in diameter by 60 feet in height. All tanks would have a fixed roof and be atmospherically vented. The proposed project would also include constructing a new truck gate and four new truck racks. New pumps and piping would be installed to facilitate bulk liquid transfers between the new ASTs and truck racks.

The proposed project would include two new pipelines, one approximately 2,500 feet long connecting the berth at Wharf 8 to the project site and another 1,800 feet long connecting the site

to the Port Road A facility's rail connection. The 2,500-foot pipeline would be added to the existing pipeline rack at Wharf 8. A 700-foot pipeline section would run from the Port Road A location to the berth Wharf 8 and an 1,800-foot pipeline section would run between the Port Road A facility and the proposed Project. The existing supports on the 700-foot section run may need to be reinforced, but no new supports or footings are required. The 1,800-foot pipeline would include 78 pipe bridge supports, each with two concrete footers, for a total of 156 footers to be drilled/poured. There would be pipe rack supports every 20 feet, except for the portion of pipeline that extends over the road and rail track. Each support would have two concrete footings. Each footing would be 24 inches in diameter and 20 feet deep. The 24-inch-diameter holes would be drilled using a corkscrew drill for cast-in-place drilled holes. The top 10 feet of the holes would be excavated and lined with rebar. The drill would drill down for the next 20 to 25 feet and mix cement with the existing soil in a slurry to create a concrete. The drill would then be removed, and the top 10 feet would be filled with traditional concrete.

The initial phase of construction would include mobilization and earthwork, including the removal of trees and vegetation, grading and demolition, followed by tank construction. Grading would consist of minor leveling of existing grade. Tanks would be built at- or 1-foot-above grade and tank foundations (ring walls and pilings) would result in a minor amount of spoils, some of which could be reused on site. Following the initial phase, most other improvements would be constructed concurrently, including the truck gates, pipeline, and spill control infrastructure. Following tank and pipeline construction, the entrance and exit from the truck rack would be paved. Otherwise, there would be no paving inside the tank farm. The final phase of construction would include construction or installation of the fire protection, electrical, and mechanical support equipment components, and painting the tanks. Tanks and piping would be coated with a low-volatile-organic-compounds (VOC) paint; paint would be rolled/brushed on, not sprayed.

The total construction duration would take 12 to 13 months, as shown in Table 3. All equipment would be diesel-powered, ranging from 10 to 100 horsepower. Work would be completed during a typical 5-day, 8-hour-per-day work week. Table 3 provides a summary of the various construction elements.



Source: GHD 2018

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Figure 2

Proposed Project Plan

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Contanda Renewable Diesel Bulk Liquid Terminal Development Project

Table 3
Construction Equipment and Duration Summary

Proposed Improvement	Construction Equipment			Construction Duration
	Equipment	Number	Horsepower	
Mobilization and Earthwork	Bulldozer	1	120	1 month
	Truck	4	320	
	Excavator	2	100	
Underground Utility Work	Truck	4	320	1 month
	Excavator	2	100	
	Welding Machine	4	25	
Tank Foundation Work	Loader/Excavator	2	100	1 month
	Truck	4	320	
Tank and Pipeline Construction	Crane	2	225	8 months
	Loader/Excavator	2	100	
	Trucks	4	320	
	Delivery Trucks	1	320	
	Skid Loader	2	60	
	Welding Machine	6	25	
	Forklift	2	110	
Asphalt Paving	Grader	1	120	1 month
	Paving Machine	1	150	
Architectural Coating	Painting	--		1 month
Total Construction Duration				**12 to 13 months**

2.2.4 Project Operations

The Contanda tank terminal would serve as a transfer hub for renewable diesel product shipments coming into the Port. Contanda would receive renewable diesel via manifest rail[1] and vessels.

For rail shipments, the trains would originate from various production facilities located throughout the country. Rail cars would be unloaded at the Port Road A site and pumped through a new aboveground pipeline connecting the Port Road A rail siding to the new ASTs. Product would be received via manifest cars at the Port Road A facility. The cars would come into the Port via blocks of two to five cars and would be switched into position for product pipeline connection. The pipeline connection procedure generally entails connecting the product car's discharge valve to the unloading hose, which is then connected to the collection manifold. The product car liquid/vapor

[1] Manifest rail refers to trains made up of mixed rail cars (e.g., boxcars and tank cars). When individual rail cars or small groups of rail cars are shipped by manifest rail, they need to wait for additional cars to collect before travelling to a destination. Shipments sent by manifest rail are often coupled and uncoupled to other trains at various points along their trip.

plug and valve would then be opened slowly to relieve negative pressure and allow product to flow through the collection manifold/overhead pipeline to the product tanks. Once zero flow is detected, indicating that the car is empty, workers would verify through a sight glass that the product has stopped flowing, close the tank car unloading valve, and secure it with the securing pin. Following discharge, all product connections to the railcar would be disengaged, including disconnecting the railcar from the unloading hose, manually draining the remaining product from the hose into the manifold, closing the manifold valve, and closing the liquid/vapor valves on the product train. After offloading, railcars would be resealed and prepared for outbound shipment back to their origin.

Product shipped by vessel would berth at Wharf 8 and unload through the new pipelines, which would transfer the product to the project site. For marine shipments, vessels would originate from various domestic production facilities. Vessels would berth at Wharf 8 and unload cargoes using onboard pumps. Renewable diesel would be transferred from the vessel through an aboveground pipeline connected to storage tanks at the proposed project site. Product from rail and vessels would be stored in tanks for an average of 1 month until ready for distribution to the Northern California market. When time came to ship to the local market, Contanda would pump the renewable diesel from the tanks to a pipeline that would be connected to the on-site truck racks. Empty trucks would enter the terminal through the truck gates and be loaded with product at the truck racks. During product transfers, a minimum of one terminal operator would be present 24 hours a day, 7 days a week, to oversee operations. Outside of product transfer periods, the project site would be staffed for security and facility maintenance by up to two employees working 8-hour shifts, Monday through Friday. Employee offices would be in the support building.

The operational throughput of the proposed project in 2020 is shown in Table 4.

Table 4
Proposed Project Throughput

	Proposed Project (2020)
Total Tank Capacity	15,960,000 gallons
Number of Tanks	16
Annual Rail Cars	3,600
Annual Marine Vessels	12
Annual Truck Trips	17,456

2.2.4.1 On-Site Spill Controls

The facility would include several design features to contain spills during facility operation. To provide containment, the rail offload yard has a 5-inch impervious asphalt layer under the track bed and a full concrete perimeter curb. The interior of the rail offload yard would be equipped with a

central collection line and monitored discharge valve, which would be closed during product transfers. In addition, all stormwater inlets in the rail offload yard would be covered with rubber mats during offload activities. Spill pans would also be used at all railcar bottom connections during connection and disconnection of product hoses.

All transfer piping would be located above ground. Aboveground piping would be designed to ensure minimal hazards with vehicular traffic. All unloading connections are securely capped or blank-flanged when not in service or when in standby service for any extended time. Piping, valves, fittings, hoses, and appurtenances would be regularly inspected for signs of leaks, corrosion, stress, or other indications of wear that could result in an accidental/uncontrolled discharge. Pipe and AST supports, alignments, and construction allow for expansion and contraction and seismic restraint. Contanda would routinely inspect and maintain all major pieces of equipment at the terminal (including aboveground valves, pumps, piping, and flanges), as is the case for the existing Port Road A facility. Inspections would be carried out monthly and documented on a monthly inspection checklist. If damage or corrosion is detected, Contanda's operators would investigate, isolate, or repair as required.

Stormwater and drainage control infrastructure would be designed in compliance with the 2009 *Port of Stockton Storm Water Development Standards Plan* (Port 2009).

The proposed project also includes construction of secondary emergency infrastructure that would be operated as needed. Secondary electrical distribution systems consisting of diesel-powered generators would be operated as needed.

2.3 Project Alternatives

The CEQA Guidelines (14 CCR 15126) require that a DEIR consider a range of reasonable alternatives to the proposed project, or to the location of the proposed project, that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. The following sections present brief descriptions of the alternatives to the proposed project that were carried forward for analysis in this DEIR. A complete evaluation of the alternatives analyzed in this DEIR—including their ability to meet the objectives of the proposed project, their ability to avoid or substantially reduce significant environmental impacts, and the rationale for the decision to eliminate the alternatives from consideration—is provided in Section 6 of this DEIR.

2.3.1 No Project Alternative

The No Project Alternative, which is required by CEQA, represents what would reasonably be expected to occur in the foreseeable future if the proposed project were not approved. Under this alternative, no new developments would be constructed at the project site; therefore, there would be

no operations. Under this scenario, the Port could not preclude future development on the site, but such operations are speculative at this point.

2.3.2 Alternative 1: Reduced Project

The Reduced Project Alternative includes full buildout of the project site, but with a reduced number of tanks constructed and therefore reduced operations. Under this alternative, a maximum of 10 tanks with a maximum capacity of 20,000 barrels would be constructed and project throughput would be reduced, as shown in Table 5. As shown, truck trips would decrease by half and rail cars would decrease by about half, although the number of rail trips would likely not be reduced by the same amount because fewer cars would come into the facility per locomotive. There would be no vessel calls under this alternative.

Table 5
Alternative 1: Reduced Project Throughput

	Proposed Project (2020)
Total Tank Capacity	8,400,000 gallons
Number of Tanks	10
Annual Rail Cars	1,895
Annual Truck Trips	6,947

3 Environmental Impact Analysis

This section discusses the CEQA requirements and terminology used in the environmental impact analysis. The environmental resource analysis sections discuss the possible effects of the proposed project on the specific environmental resource areas. To assist the reader in comparing information about the various environmental issues, Sections 3.1 through 3.8 each contain the following information for the specific resource area:

- **Environmental setting.** The physical conditions at the time of baseline, specific to the resource area
- **Regulatory setting.** The rules, regulations, and plans specific to the proposed project and resource area
- **Methodology for determining impacts.** A description of the quantitative or qualitative methods used to analyze potential impacts, including specific thresholds of significance (the criteria against which the analysis results are compared)
- **Impacts of the proposed project.** Potential impacts are compared to the thresholds of significance to determine their level of significance
- **Mitigation measures.** Mitigation measures, as well as a plan to implement measures and findings of significance after the measures are implemented, are provided where potentially significant impacts are identified

In accordance with Section 15064 of the CEQA Guidelines, the environmental impact analysis for each resource section includes an evaluation of the direct physical changes in the environment that may be caused by the proposed project, as well as reasonably foreseeable indirect physical changes in the environment that may be caused by the proposed project. Factors that may be affected by the proposed project are evaluated using the criteria set forth in Appendix G of the CEQA Guidelines (Environmental Checklist). Per 14 CCR 15382, an impact is considered significant if it would result in a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant."

Short- and long-term impacts are also considered. Short-term impacts are of a limited duration, such as those that occur during a construction phase. Long-term impacts are those of a greater duration, such as those that would encompass the proposed project duration and beyond.

As reflected in 14 CCR 15126, impacts resulting from the proposed project on environmental resources can be included in one of the following categories:

- **No impact.** No impact to the identified environmental resource would occur as a result of the proposed project.
- **Less than significant.** Some impacts to the environmental resource may result from the proposed project; however, the impacts do not reach the threshold of significance.
- **Potentially significant but mitigation measures are available to reduce impacts to a less-than-significant level.** Significant adverse impacts may occur; however, with appropriate mitigation, they can be reduced to a less-than-significant level.
- **Significant and unavoidable adverse impacts.** The environmental effect reaches or exceeds the threshold of significance even after mitigation measures have been applied to minimize their severity or no mitigation is available to reduce the impacts to a less-than-significant level.

Potential cumulative impacts for the proposed project for each environmental resource area are summarized in Section 4. Irreversible environmental changes that would be caused by the proposed project and growth-inducing impacts of the proposed project are identified in Section 5. In Section 6, the alternatives are compared to the proposed project and CEQA baseline and ranked relative to each other based on anticipated impacts for each resource area to determine the environmentally preferred alternative.

3.1 Air Quality

This section describes existing air quality conditions in the project area and analyzes how the proposed project may affect air quality. It also describes applicable rules and regulations pertaining to air quality that could affect the proposed project. For the purposes of the air quality analysis, the study area is defined as the project site and the surrounding area including roadways and rail line. The closest sensitive receptor (a residential area at North Ventura Street and West Main Street) is located approximately 1,200 feet from the facility. The project setting also includes the rail yard at the Contanda Port Road A facility, which is located more than 1,500 feet from the nearest sensitive receptor.

3.1.1 Environmental Setting

3.1.1.1 Climate and Meteorology

3.1.1.1.1 Existing Air Quality

The proposed project would occur in the northern portion of the San Joaquin Valley Air Basin (SJVAB), which is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAB is bounded by the Sierra Nevada Mountains to the east, the Coast Ranges to the west, and the Tehachapi mountains to the south; and is made up of eight counties in California's Central Valley: San Joaquin; Stanislaus; Merced; Madera; Fresno; Kings; Tulare; and the SJVAB portion of Kern. The climate within the SJVAPCD is typical of inland valleys in California with hot, dry summers and cool, mild winters. Daytime temperatures in the summer often exceed 100°F, with lows in the 60s. In winter, daytime temperatures are usually in the 50s, with lows around 35°F. Fog is common in the winter and may persist for days. Winds are predominantly up-valley (from the north) in all seasons, but more so in the summer and spring months. Winds in the fall and winter are generally lighter and more variable in direction, but generally blow toward the south and southeast.

Because of the Valley's unique physical characteristics, the potential for pollution is very high. Surrounding elevated terrain, in conjunction with temperature inversions, frequently restrict lateral and vertical dilution of pollutants. Ozone (O_3), the major component of the Valley's summertime smog, is formed via chemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_X) in the presence of ultraviolet radiation or sunlight. Abundant sunshine and warm temperatures in summer are ideal conditions for the formation of photochemical oxidants, and the photochemical pollution (O_3) becomes common. Tiny particles of solids or liquids (excluding pure water) that are suspended in the atmosphere are known as particulate matter (PM) and are classified according to their diameter in microns as either $PM_{2.5}$ (PM less than 2.5 microns in diameter) or PM_{10} (PM less than 10 microns in diameter). PM can be emitted directly (primary PM, such as dust or soot), and can form in the atmosphere through photochemical reactions or gaseous precursors (secondary PM). Much of the Valley's ambient PM_{10} and $PM_{2.5}$ is secondary PM, formed in atmospheric reactions of

NO_X. Due to the combined air pollution sources within the SJVAB and meteorological and geographical effects that limit dispersion of air pollution, the SJVAB can experience high air pollutant concentrations.

Air pollutants are defined as two general types: 1) criteria pollutants, representing pollutants for which the U.S. Environmental Protection Agency (USEPA) and CARB have set health- and welfare-protective ambient air quality standards (national ambient air quality standards [NAAQS] and California ambient air quality standards [CAAQS]); and 2) toxic air contaminants (TACs), which may lead to serious illness or increased mortality even when present at relatively low concentrations. TACs generally do not have ambient air quality standards.

3.1.1.1.1.1 Criteria Pollutants

USEPA and CARB classify an area as attainment, unclassified, or nonattainment depending on whether the monitored ambient air quality data show compliance, lack of data, or noncompliance with the ambient air quality standards, respectively. The NAAQS and CAAQS relevant to the proposed project are provided in Table 6. Areas without monitoring data are considered unclassified and are generally treated as attainment areas.

Table 6
National and California Ambient Air Quality Standards

Pollutant	Averaging Period	California Standards	National Standards	Health Effects
O_3	1-hour	0.09 ppm	--	Breathing difficulties, lung tissue damage
	8-hour[b]	0.070 ppm	0.075 ppm	
PM_{10}	24-hour	50 µg/m^3	150 µg/m^3	Increased respiratory disease, lung damage, cancer, premature death
	Annual	20 µg/m^3	--	
$PM_{2.5}$	24-hour[c]	--	35 µg/m^3	Increased respiratory disease, lung damage, cancer, premature death
	Annual	12 µg/m^3	12 µg/m^3	
CO	1-hour	20 ppm	35 ppm	Chest pain in heart patients, headaches, reduced mental alertness
	8-hour	9.0 ppm	9 ppm	
NO_2	1-hour	0.18 ppm	0.100 ppm[a]	Lung irritation and damage
	Annual	0.030 ppm	0.053 ppm	
SO_2	1-hour	0.25 ppm	0.075 ppm[a]	Increases lung disease and breathing problems for asthmatics
	3-hour	--	0.5 ppm	
	24-hour	0.04 ppm	--	

Pollutant	Averaging Period	California Standards	National Standards	Health Effects
Lead	30-day	1.5 µg/m^3	--	Increased body burden and impairment of blood formation and nerve conduction
	Quarter	--	1.5 µg/m^3	
	3-month	--	0.15 µg/m^3	
Sulfates	24-hour	25 µg/m^3	--	Decrease in ventilator function, aggravation of asthmatic symptoms, aggravation of cardiopulmonary disease
Visibility-reducing particles	8-hour	In sufficient amount to give an extinction coefficient of >0.23 inverse kilometers (visual range to less than 10 miles with relative humidity less than 70%)	--	
Hydrogen sulfide	1-hour	0.03 ppm	--	Odor
Vinyl chloride	24-hour	0.01 ppm	--	Short-term exposure: central nervous system effects – dizziness, drowsiness, and headaches Long-term exposure: liver damage, cancer

Notes:

Source: CARB 2018.

a. The federal 1-hour NO_2 and SO_2 standards are based on the 3-year average of the 98th and 99th percentile of daily maximum values, respectively.
b. The federal 8-hour O_3 standard is based on the annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
c. The federal 24-hour $PM_{2.5}$ standard is based on the 3-year average of the 98th percentile of the daily values.

The criteria pollutants of primary concern assessed in this DEIR are O_3, PM_{10}, $PM_{2.5}$, carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Lead, hydrogen sulfide, and vinyl chloride would not be generated by the proposed project; consequently, these pollutants are not evaluated.

O_3 is a unique criteria pollutant because it is not directly emitted from proposed project-related sources. Rather, O_3 is a secondary pollutant, formed from the precursor pollutants ROG and NO_X, which react to form O_3 in the presence of sunlight through a complex series of photochemical reactions. Thus, unlike inert pollutants, O_3 levels usually peak several hours after the precursors are emitted and many miles downwind of the source. Because of the complexity and uncertainty in predicting photochemical pollutant concentrations, O_3 impacts are indirectly addressed by comparing proposed project-generated emissions of ROG and NO_X to daily emission thresholds set by SJVAPCD.

In addition, CARB has established standards for sulfate, visibility, hydrogen sulfide, and vinyl chloride. Hydrogen sulfide and vinyl chloride are currently not monitored in the SJVAB because they are not a

regional air quality problem; instead, they are generally associated with localized emission sources. Vinyl chloride emissions have been associated primarily with sources such as landfills. As such, sulfate, visibility, hydrogen sulfide, and vinyl chloride are not pollutants of concern for the proposed project and are not considered in the analysis. Table 7 summarizes the federal and state attainment status of criteria pollutants for the SJVAB based on the NAAQS and CAAQS, respectively.

Table 7
San Joaquin Valley Air Pollution Control District Attainment Status

Pollutant	Attainment Status	
	Federal	State
O_3	Nonattainment (8-hour) - Extreme	Nonattainment (1-hour) – Severe Nonattainment (8-hour)
PM_{10}	Attainment - Maintenance	Nonattainment
$PM_{2.5}$	Nonattainment – Moderate (Annual) Nonattainment – Serious (24-hour)	Nonattainment
CO	Attainment - Maintenance	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead (Pb)	Attainment	Attainment
Hydrogen Sulfide (H_2S)	No Federal Standard	Unclassified
Visibility-reducing Particles	No Federal Standard	Unclassified

Note:
Sources: USEPA 2017; CARB 2016.

3.1.1.1.1.2 Local Air Monitoring Levels

Table 8 shows the most recent 3 years of monitored values for those criteria pollutants currently monitored at the Hazelton Street station in the City. During this time, there were exceedances of the state and national 8-hour O_3 standard, the state PM_{10} standard, and the state and national $PM_{2.5}$ 24-hour standard. No violations were recorded of the NO_2 or CO standards.

Table 8
Maximum Pollutant Concentrations Measured at the Stockton-Hazelton Street Monitoring Station

Pollutant/Parameter	2013	2014	2015
O_3			
Maximum 1-hour/8-hour average concentration (ppm)	0.080/0.067	0.090/0.077	0.094/0.078
Number of days state/national 1-hour standard exceeded (ppm)	0	0	0
Number of days state/national 8-hour standard exceeded	0	4	2

Pollutant/Parameter	2013	2014	2015
PM_{10}			
Maximum state/national 24-hour concentration (µg/m^3)	95.5/90.1	94.0/90.0	55.3/54.1
Number of days state/national 24-hour standard exceeded	58.2/0.0	18.0/0.0	24.5/0.0
$PM_{2.5}$			
Maximum state/national 24-hour concentration (µg/m^3)	66.5/66.5	56.8/56.8	58.8/58.8
Annual state/national average	NA/17.6	12.3/12.1	12/12.8
Number of days national 24-hour standard exceeded	27.6	16.0	12.2
NO_2			
Maximum 1-hour average concentration (ppb)	62.4	66.9	58.0
Annual average (ppb)	16	13	12
Number of days state/national standard exceeded	0/0	0/0	0/0
CO			
Maximum 1-hour/8-hour average concentration (ppm)	2.7/1.8	2.8/2.1	2.3/1.5
Number of days state/national 1-hour standard exceeded	0	0	0
Number of days state/national 8-hour standard exceeded	0	0	0

Notes:
Sources: CARB 2017a; USEPA 2017.
CO is no longer monitored in the Stockton area.
O_3 8-hour exceedances are based on 0.070 ppm.

3.1.1.1.1.3 Toxic Air Contaminants

TACs are airborne compounds that are known or suspected to cause adverse human health effects after long-term or short-term exposure. Cancer risk can result from long-term exposure, and non-cancer health effects can result from either chronic or acute exposure. Examples of TAC sources are diesel- and gasoline-powered internal combustion engines in mobile sources; industrial processes and stationary sources such as dry cleaners, gasoline stations, and paint and solvent operations; and stationary fossil fuel-burning combustion sources, such as power plants. Table 9 describes health effects of the possible TACs of concern for the proposed project.

Table 9
Toxic Air Contaminant Health Effects

Pollutant	Health Effects
Benzene	Central nervous system depression, nausea, tremors, drowsiness, dizziness, headache, irritation of the eyes and respiratory tract. Chronic exposure may reduce the production of both red and white blood cells resulting in aplastic anemia. Exposure to benzene may result in an increased risk of contracting cancer
Chlorobenzene	Headaches, numbness, sleepiness, nausea, and vomiting
Diesel particulate matter	Respiratory damage and premature death, and may result in increased risk of contracting cancer

Pollutant	Health Effects
Ethyl benzene	Eye and throat irritation; exposure to high levels can result in vertigo and dizziness
Ethylene glycol monobutyl ether	Eye, respiratory tract and skin irritation and burns; inhalation may cause headaches and hemolysis (red blood cell breakage)
Hexane	Short-term exposure affects the nervous system and can cause dizziness, nausea, headaches, and even unconsciousness. Chronic exposure can cause more severe damage to the nervous system
Isopropyl alcohol	Skin rash, itching, dryness and redness, irritation of the nose and throat. Repeated high exposure can cause headache, dizziness, confusion, loss of coordination, unconsciousness and even death
Methanol	Chronic exposure can cause visual problems and blindness, convulsions, coma, loss of consciousness, kidney failure, liver damage, low blood pressure, respiratory arrest, and damage to the central nervous system
Naphthalene	May cause nausea, vomiting, diarrhea, blood in the urine, and a yellow color to the skin
Propylene glycol monomethyl ether	Can irritate the noise, throat, and lungs causing coughing, wheezing, and/or shortness of breath, headaches, dizziness, lightheadedness, and passing out.
Toluene	Irritation of the eyes and nose; weakness, exhaustion, confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, insomnia; numbness or tingling of the skin; dermatitis; liver and kidney damage
Xylenes (mixed)	Depression of the central nervous system, with symptoms such as headache, dizziness, nausea, and vomiting

Source: USEPA Integrated Risk Information System (USEPA 2015)

Of the pollutants listed in Table 9, diesel particulate matter would be the primary TAC of concern from locomotives. Renewable diesel does not contain TACs; therefore, there would be no fugitive emissions from the vapor released while disconnecting the product offloading hose from railcars near the rail offload yard pump station.

3.1.2 Applicable Regulations

3.1.2.1 Federal

3.1.2.1.1 Clean Air Act

USEPA is responsible for setting and enforcing the NAAQS for O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead under the Clean Air Act (CAA). USEPA also establishes emission standards for on-road vehicles and off-road engines. The CAA forms the basis for national pollution control and delegates the enforcement of the federal standards to the states. In California, CARB and local air agencies have the shared responsibility for enforcing air pollution regulations, with the local agencies having primary responsibility for regulating stationary emission sources. In the SJVAB, SJVAPCD has this responsibility.

In federal nonattainment areas, the CAA requires preparation of a State Implementation Plan (SIP) detailing how the state will attain the NAAQS within mandated timeframes. In response to this requirement, local air quality agencies, in collaboration with other agencies, such as CARB, periodically prepare Air Quality Management Plans (AQMPs) designed to bring the area into attainment with federal requirements and to incorporate the latest technical planning information. The AQMP for each nonattainment area is then incorporated into the SIP, which is submitted by CARB to USEPA for approval. USEPA often approves portions and disapproves other portions of submitted SIPs.

3.1.2.1.2 Emission Standards for Locomotives

In 1998, USEPA promulgated final exhaust emission standards for NO_X, hydrocarbons, CO, PM, and smoke for newly manufactured and remanufactured locomotives and locomotive engines. The requirements for compliance with these emission standards are described in 40 CFR Part 92. These provisions apply to manufacturers, remanufacturers, and owners and operators of locomotives and locomotive engines manufactured on or after January 1, 1973. In 2008, USEPA strengthened the Tier 0 through Tier 2 standards to apply to existing locomotives and introduced more stringent Tier 3 and 4 emission requirements (73 Federal Register [Fed. Reg.] 37096). Tier 3 standards, met by engine design methods, were phased in between 2011 and 2014. Tier 4 standards, which are expected to require exhaust gas after treatment technologies, became effective for locomotives manufactured in 2015 or later (DieselNet 2008).

3.1.2.1.3 Emission Standards for Non-Road Diesel Engines

USEPA has established a series of progressively cleaner emission standards for new non-road (off-road) diesel engines. Tier 1 standards were phased in from 1996 to 2000; Tier 2 standards were phased in from 2001 to 2006; Tier 3 standards were phased in from 2006 to 2008; and Tier 4 standards, which require add-on emission control equipment, were phased in from 2008 to 2015. For each tier, the phase-in schedule is driven by engine size. To enable sulfur-sensitive control technologies in Tier 4 engines, USEPA mandated reductions in the sulfur content of non-road diesel fuels to 15 parts per million (ppm; also known as Ultra Low Sulfur Diesel), effective 2010 (DieselNet 2016). The federal fuel standard is preempted by the California standard, which took effect in 2006. These standards would apply primarily to construction equipment associated with the proposed project, as well as any other off-road diesel engines.

3.1.2.2 State

3.1.2.2.1 California Clean Air Act

The California Clean Air Act (CCAA), adopted in 1988, requires nonattainment areas to achieve and maintain CAAQS and mandates that local air districts develop triennial plans for attaining CAAQS. CARB is responsible for establishing CAAQS, ensuring CCAA implementation, and regulating

emissions from consumer products and motor vehicles. CARB established CAAQS for all pollutants for which USEPA has established NAAQS, as well as for sulfates, visibility, hydrogen sulfide, and vinyl chloride. CAAQS are generally more stringent than NAAQS.

3.1.2.2.2 California Diesel Fuel Regulation

CARB has set sulfur limitations for diesel fuel sold in California for use in on- and off-road motor vehicles and to fulfill CARB's 2000 Diesel Risk Reduction Plan. Harbor craft and intrastate locomotives (switch locomotives) were originally excluded from the rule, but were later included by a 2004 rule amendment. Under this rule, diesel fuel used in motor vehicles, except harbor craft and intrastate locomotives, has been limited to 500 ppm sulfur since 1993 and to 15 ppm sulfur since September 2006. Diesel fuel used in intrastate locomotives has been limited to 15 ppm sulfur since January 1, 2007.

3.1.2.2.3 Statewide Railyard Agreement

On June 30, 2005, CARB entered into a Statewide Railyard Agreement with Union Pacific Railroad (UP) and BNSF Railway (BNSF). This agreement obligates the railroads to significantly reduce diesel emissions in and around rail yards in California. Among the most important elements of the agreement are the following provisions, which will significantly clean up the state's biggest rail yards: 1) a statewide idling-reduction program; 2) health risk assessments (HRAs) for all major rail yards; and 3) community and air district involvement in the preparation of risk assessments, enforcement of agreement provisions, and the evaluation and development of measures to further reduce impacts on local communities. The agreement will also: 1) maximize the use of state and federal low sulfur diesel in locomotives fueled in California; 2) establish a statewide visible emissions reduction and repair program; 3) provide a detailed evaluation of advanced control measures; and 4) include an assessment of remote sensing technology to identify high-emitting locomotives.

3.1.2.2.4 Requirements for Intrastate Locomotive Fuel Use

On November 18, 2004, CARB approved new requirements for fuel used in intrastate locomotives. Beginning January 1, 2007, diesel fuel sold for use in intrastate diesel-electric locomotives operating in California must meet the specifications of CARB diesel fuel. Intrastate (diesel-electric) locomotives are defined as those locomotives that operate and fuel primarily (at or greater than 90% of annual fuel consumption, mileage, or hours of operation) within the boundaries of the state of California.

3.1.2.2.5 Heavy-Duty Truck Idling Regulation

This CARB rule became effective in 2005 and prohibits heavy-duty diesel trucks from idling for longer than 5 minutes at a time, unless they are queuing, provided the queue is located beyond 100 feet from homes or schools.

3.1.2.2.6 California Air Resources Board In-Use Off-Road Diesel Vehicle Rule

In July 2007, CARB adopted a rule that requires owners of off-road mobile equipment powered by diesel engines 25 horsepower or larger to meet the fleet average or Best Available Control Technology requirements for NO_X and PM emissions by March 1 of each year. The rule is structured by fleet size: large, medium, and small. Medium-sized fleets receive deferred compliance, and small fleets are exempt from NO_X requirements and receive deferred compliance. The regulation was adopted in April 2008 and amended in 2011, delaying the initial compliance date for all fleets by 4 years. This regulation applies primarily to equipment proposed to be used during facility closure activities such as decontamination, deconstruction, and cleanup.

3.1.2.2.7 California Air Resources Board Statewide Bus and Truck Regulation

This regulation, adopted in 2008, requires the installation of PM retrofits on all heavy-duty trucks beginning in 2012 and replacement of older trucks starting in 2015. All vehicles must have 2010 model year engines or equivalent by 2023. This regulation applies primarily to on-road vehicles to be used during proposed facility closure activities such as hauling of debris and materials to and from the site.

3.1.2.2.8 California Air Resources Board Regulation to Reduce Emissions from Diesel Engines on Commercial Harbor Craft

In November 2007, CARB adopted a regulation to reduce diesel particulate matter and NO_X emissions from new and in-use commercial harbor craft. Under CARB's definition, commercial harbor craft include tug boats, tow boats, ferries, excursion vessels, work boats, crew boats, and fishing vessels. The regulation implemented stringent emission limits on harbor craft auxiliary and propulsion engines. In 2010, CARB amended the regulation to add specific in-use requirements for barges, dredges, and crew/supply vessels.

3.1.2.2.9 California Air Resources Board Regulations for Fuel Sulfur and Other Operational Requirements for Ocean-Going Vessels within California Waters and 24 Nautical Miles of the California Coast

In 2008, CARB adopted a clean fuel regulation for ocean-going vessels within 24 nautical miles of the California coast to further reduce emissions from shipping. Since then, the permitted sulfur content of marine gas oil and marine diesel oil has been progressively lowered and since 2014 may not exceed 0.1%. CARB passed a rule in 2014 that allows marine vessels to be considered in compliance with the California ocean-going fuel regulation when they are complying with the North American Emission Control Area using alternative emission control technologies or non-distillate low sulfur (less than or equal to 0.1% sulfur) marine fuels.

3.1.2.2.10 Toxic Air Contaminant Regulations

California established the California TAC Program (AB 1807 and AB 2728) in 1983. This program sets provisions to implement the national program for control of hazardous air pollutants. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588), established in 1987, is designed to provide information to state and local agencies and to the public on the extent of airborne TAC emissions from stationary sources and the potential public health impact of those emissions. The Hot Spots Act requires that the Office of Environmental Health Hazard Assessment develop HRA guidelines. The Hot Spots Act requires operators of certain stationary sources to inventory air toxic emissions from their operations and prepare an HRA, if directed by their local air district, to determine the potential health impacts of their air toxic emissions.

3.1.2.3 Regional

SJVAPCD is responsible for implementing federal and state regulations at the local level, permitting stationary sources of air pollution, and developing the local elements of the SIP. Emissions from indirect sources, such as automobile traffic associated with development projects, are addressed through SJVAPCD's air quality plans, which are each air quality district's contribution to the SIP.

In addition to permitting and rule compliance, air quality management at the local level is also accomplished through SJVAPCD imposition of mitigation measures on project EIRs and mitigated negative declarations developed by project proponents under CEQA. Specific to project construction emissions, CEQA requires mitigation of air quality impacts that exceed certain significance thresholds set by the local air district. The SJVAPCD's CEQA significance thresholds are applicable to the proposed project, as is the following SJVAPCD rule.

3.1.2.3.1 Rule 4624: Transfer of Organic Liquid

Rule 4624 limits VOC emissions from the transfer of organic liquid, depending on the size of the facility and the amount of product transferred per day. Both direct emissions limits and operational controls are required, and all facilities are required to keep detailed records of product transfers.

3.1.2.3.2 Rule 4632: Storage of Organic Liquids

The purpose of this rule is to limit VOC emissions from the storage of organic liquids and applies to any tank with a capacity of 1,100 gallons or greater in which any organic liquid is placed, held, or stored. Under this rule, an operator shall not place, hold, or store organic liquid in any tank unless such tank is equipped with a VOC control system identified as part of the rule, differing based on storage capacity.

3.1.3 Environmental Impacts and Mitigation Measures

3.1.3.1 Baseline

At the time the NOP for the proposed project was published, the project site was vacant, and the adjacent existing Contanda Port Road A facility received bulk liquid shipments via manifest rail, as detailed in Section 2.2.2.

3.1.3.2 Thresholds

For purposes of this DEIR, the following thresholds, which are based on the Appendix G of the CEQA Guidelines (Environmental Checklist) and SJVAPCD guidance, were used to determine whether the proposed project would result in air quality impacts. The proposed project would have an impact on air quality if:

- **AQ-1:** The proposed project's emissions would conflict with or obstruct implementation of any applicable air quality plan.
- **AQ-2:** The proposed project's emissions would result in off-site ambient air pollutant concentrations that exceed any of the SJVAPCD thresholds of significance shown in Table 10.
- **AQ-3:** The proposed project's emissions would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- **AQ-4:** The proposed project's emissions would expose sensitive receptors to substantial pollutant concentrations.
- **AQ-5**: The proposed project would create objectionable odors affecting a substantial number of people.

Table 10
SJVAPCD Thresholds

Pollutant	Threshold (tons per year)	NAAQS/CAAQS Screening Level (pounds per day)
NO_X	10	100
ROG	10	100
CO	100	100
PM_{10}	15	100
$PM_{2.5}$	15	100
SO_2	27	100

Note:
Source: SJVAPCD 2015a.

3.1.3.3 Methodology for Determining Impacts

Complete details, as well as modeling results related to the air quality analysis, can be found in Appendix E. A summary of assumptions related to the air quality analysis is provided as follows.

Construction emissions would be generated by construction equipment and worker vehicles (up to 15 workers per phase). Construction is expected to take 12 to 13 months. The initial phase of construction would include mobilization and earthwork. Following the initial phase, most other improvements would be constructed sequentially, including the utility work, tank foundation work, and tank and pipeline construction. The final phase of construction would include construction or installation of the fire protection, electrical, and mechanical support equipment components. Table 3 provides a summary of the construction schedule. A full description of construction assumptions, including equipment horsepower ratings, can be found in Appendix E.

Operational emissions would originate from rail, truck, and employee vehicle movements. During operation, the facility would receive shipments via inbound trains from UP and BNSF, and from vessels berthed at Wharf 8. The trains would originate from various production facilities located throughout the United States. Product would be offloaded at the Contanda Port Road A site and transferred to the project site via the new pipeline. Vessels would originate from various domestic ports and travel to the Port. Outbound shipments would be shipped via trucks from the project site. Throughput numbers are presented in Table 11.

Table 11
Operational Mode Split

	Proposed Project (2020)
Total Tank Capacity	15,960,000 gallons
Number of Tanks	16
Annual Rail Cars	3,600[a]
Annual Marine Vessels	12
Annual Truck Trips	17,456

a. Assumes one manifest train would accommodate 10 rail cars.

3.1.3.4 Impact Analysis

3.1.3.4.1 AQ-1: Would proposed project emissions conflict with or obstruct implementation of any applicable air quality plan?

SJVAPCD has established thresholds of significance for criteria pollutant emissions, which are based on New Source Review offset requirements for stationary sources. Because the SJVAB is an extreme O_3 nonattainment area, stationary sources in SJVAPCD are subject to some of the toughest regulatory requirements in the nation. Emission reductions achieved through implementation of

offset requirements are a major component of SJVAPCD's air quality plans. Therefore, projects with emissions below the thresholds of significance for criteria pollutants would be determined to not conflict or obstruct implementation of the air quality plans, while emissions exceeding those thresholds would conflict with and obstruct implementation.

Tables 12 through 14, shown on the following pages under AQ-2, present the construction and operational emissions resulting from the proposed project. As shown, operational emissions would exceed NO_X thresholds.

Impact Determination: As shown under AQ-2, because the proposed project would exceed thresholds, it would conflict with and obstruct implementation of the SJVAPCD's O_3 attainment plans, including its most recent 2016 Plan for the 2008 8-hour O_3 standard. Impacts would be considered significant.

Mitigation Measures:

- **MM-AQ-1: Truck Idling Reductions** (see AQ-2 for more information).
- **MM-AQ-2: Use of Clean Trucks** (see AQ-2 for more information).

Residual Impact: Implementation of MM-AQ-1 would reduce operational emissions but emissions would remain significant. As discussed in more detail under AQ-2, because operational emissions would come largely from locomotives and trucks that are not within Contanda's power to mitigate, impacts would remain significant and unavoidable for proposed project operations.

3.1.3.4.2 AQ-2: Would proposed project emissions result in off-site ambient air pollutant concentrations that exceed any of the SJVAPCD thresholds of significance?

SJVAPCD has developed quantitative criteria to evaluate the significance of air emissions under CEQA. Specifically, a significant impact would occur if implementation of a project alternative would result in emissions that exceed the SJVAPCD-established thresholds shown in Table 10. SJVAPCD's CEQA thresholds represent the emission levels that would result in a direct or indirect project impact, as well as impacts resulting in a cumulatively considerable net increase in pollutants. SJVAPCD applies the CEQA thresholds separately to three emission categories: 1) construction emissions; 2) operational non-exempt equipment emissions; and 3) operational exempt emissions.

Construction. Table 12 shows that the proposed project would not generate construction emissions that exceed SJVAPCD's thresholds.

Table 12
Construction Emissions

Source Category	PM_{10}	$PM_{2.5}$	NO_X	SO_X	CO	VOC
	Tons per year					
2019 Construction	0.3	0.2	2.8	0.0	1.9	0.3
2020 Construction	0.1	0.1	1.1	0.0	0.7	0.7
Significance Threshold	15	15	10	27	100	10
Significant?	No	No	No	No	No	No
	Pounds per day					
2019 Construction	2	2	25	0	17	3
2020 Construction	1	1	14	0	10	10
Significance Threshold	100	100	100	100	100	100
Significant?	No	No	No	No	No	No

Notes:
Emissions may not add precisely due to rounding.
Emissions estimated using CalEEMod 2016.3.1.

Operations. Operational non-exempt emissions include emissions from any operational source subject to stationary source air permitting. Operational exempt emissions include emissions from all operational sources that are exempt from stationary source air permitting, including both stationary and mobile sources (SJVAPCD 2015a). No operational non-exempt emission sources are part of the proposed project.

Tables 13 and 14 show operational emissions for proposed project conditions. As shown, the proposed project would result in a net increase of emissions, which is attributable primarily to truck and locomotive emissions.

Table 13
Proposed Project (2020) Operational Emissions (tons per year)

Source Category	PM_{10}	$PM_{2.5}$	NO_X	SO_X	CO	VOC
Trucks	0.4	0.2	21.0	0.1	3.4	0.9
Rail	0.3	0.3	16.3	0	4.8	0.6
Ships at Berth	0.2	0.1	6.9	0.4	0.6	0.2
Ships Transit	0.0	0.0	1.9	0.0	0.2	0.1
Tugboats	0.0	0.0	0.9	0.0	0.5	0.0
Employee Vehicles	0.0	0.0	0.0	0.0	0.2	0.0
Emergency Generator	0.0	0.0	0.0	0.0	0.0	0.0
2020 Project Total	1.0	1.0	47.0	1.0	10.0	2.0

Source Category	PM_{10}	$PM_{2.5}$	NO_X	SO_X	CO	VOC
CEQA Impacts						
Significance Threshold	15	15	10	27	100	10
Significant?	No	No	**Yes**	No	No	No

Note:
Emissions may not add precisely due to rounding

Table 14
Proposed Project (2020) Operational Emissions (pounds per day)

Source Category	PM_{10}	$PM_{2.5}$	NO_X	SO_X	CO	VOC
2020 Project						
Trucks	0	0	2	0	1	0
Rail Switching	1	1	16	0	4	1
Ships at Berth	1	1	38	2	3	1
Tugboats at Berth	0	0	1	0	0	0
Emergency Generator	0	0	0	0	0	0
2020 Project Total	2	1	57	2	9	2
CEQA Impacts						
Significance Threshold	100	100	100	100	100	100
Significant?	No	No	No	No	No	No

Note:
Emissions may not add precisely due to rounding.

Impact Determination: As shown in Table 12, construction emissions would be below significance. As shown in Tables 13 and 14, emissions of annual NO_X emissions during operations would exceed SJVAPCD's significance threshold. Therefore, emissions would be considered significant.

Mitigation Measures: The following mitigation measures would be implemented to reduce operational emissions:

- **MM-AQ-1: Truck Idling Reductions.** Contanda will require trucks to minimize idling time to 2 minutes while on terminal.
- **MM-AQ-2: Use of Clean Trucks.** Where possible, Contanda will encourage the use of clean trucks (defined as model year 2017 or newer) to transport fuel. Use of such trucks will be incentivized through contract benefits.

Residual Impacts: As shown in Tables 13 and 14, the proposed project's operational emissions are mainly the result of vessel and locomotives emissions. While truck idling restrictions would reduce

emissions slightly, truck emissions are being generated mainly through transit and therefore would not reduce emissions below significance. Use of cleaner trucks, defined as model year 2017 or newer, would reduce transit emissions; however, it is unknown at this time how many such trucks would visit the terminal as part of incentives. Therefore, impacts are considered significant.

Marine vessels and locomotives are regulated by the federal and state governments. CARB is addressing rail emissions through a state-wide rail plan, which includes agreements directly with the two main line locomotive companies. Central California Traction Company (CCT) has also recently upgraded several of its locomotives, including a new ultra-low-emissions locomotive purchased through USEPA's Diesel Emissions Reduction Program. CARB also regulates marine vessels through a number of comprehensive measures, including fuel and engine standards. One example of regulation is the 2007 At-Berth Regulation, which was enacted to reduce at berth emissions from container ships, passenger ships, and refrigerated-cargo ships at a number of California ports. The At-Berth Regulation provides two options to reduce at-berth emissions: shore power or an alternative control technology that achieves equivalent emission reductions.

Neither the Port nor liquid bulk vessels are covered under the 2007 At-Berth Rule. CARB is currently considering expanding the rule to include smaller fleets, additional vessel visits and types, and ports, including the Port. However, there are several issues, including cost and equipment availability, which would need to be addressed prior to expanding this rule to the Port and operations such as Contanda. For example, most vessel calls related to the proposed project are one-time visits, meaning they would call at the Port only one time per year. Unlike larger coastal ports, which are home to captive vessel strings that make multiple repeat visits to the same port each year, the vessels that call at the Port are part of the "tramp fleet;" they are not under direct contract to Contanda but are instead calling at the Port to discharge or receive product based on third-party arrangements. Exhaust gas scrubber systems, in which a bonnet scrubber is placed over a ship's stack either from a barge that is positioned alongside the ship or from a system placed on the terminal adjacent to the berth, were also considered for the project. However, these systems require proper placement due to the configuration and accessibility of the exhaust stacks to place a bonnet over the stack. The narrow width of the channel in the project area would prohibit the use of a barge-based bonnet system, and the barge would create a navigational constraint, especially when tug maneuvering is required to maintain the barge's position. In addition, the berth is not configured with large available backlands to support a terminal-based exhaust gas scrubber system.

Consequently, no additional feasible mitigation is available to reduce the significance of the operational impact. Therefore, operational impacts would be considered significant and unavoidable.

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

A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project would comply with the requirements in a previously approved plan or mitigation program, including, but not limited to, an air quality attainment or maintenance plan that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (14 CCR 15064[h][3]). As discussed under AQ-2, the proposed project would result in significant levels of NO_X emissions and is located in the SJVAB, which is classified as an extreme O_3 nonattainment area (NO_X is a precursor to O_3).

Impact Determination: As noted under AQ-1 and AQ-2, the proposed project's operational emissions would be significant and therefore would result in a cumulatively considerable net increase of a criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard. Impacts would be considered significant.

Mitigation Measures:

- **MM-AQ-1: Truck Idling Reductions** (see AQ-2 for more information).
- **MM-AQ-2: Use of Clean Trucks** (see AQ-2 for more information).

Residual Impact: Significant and unavoidable impact.

3.1.3.4.4 AQ-4: Would proposed project emissions expose sensitive receptors to substantial pollutant concentrations?

A significant impact would occur if a project would emit TACs that could cause a significant increase in health risks, including both carcinogenic and non-carcinogenic risks. A project is considered to have a significant TAC impact if it would:

- Result in ground-level concentrations of carcinogenic TACs that would increase the probability of contracting cancer for the maximally exposed individual by 20 in one million or more
- Increase ground-level concentrations of non-carcinogenic TACs that would result in an acute or chronic hazard index exceeding one for the maximally exposed individual receptor (SJVAPCD 2015b)

Sources associated with the proposed project that are expected to have emissions significant enough to warrant consideration include switching locomotives and product loading. Specifically, these sources include the following:

- Construction equipment on site
- Switching locomotive engine movement along rail lines within the boundaries of the Port
- Switching locomotive engine idling at switching railyards
- Vessel maneuvering at berth
- Product offloading

TACs emitted from switching locomotives include diesel particulate matter emissions (during both idling and movement) and fugitive emissions from the vapor released while disconnecting the product offloading hose from railcars near the rail offload yard pump station. Appendix E provides additional details on the assumptions and modeling results used to conduct the health risk assessment. Table 15 shows the proposed project's construction and operations maximum cancer risks and non-cancer health hazards.

Table 15
Proposed Project (Construction plus Operations) Maximum Cancer Risk and Hazards

Project Phase	Increased Cancer Risk	Maximum Hazard Index (Chronic)
Construction	6.97 in 1 million	0.0078
Operations	6.970 in 1 million	0.0020
Total	13.9 in 1 million	0.0099
Threshold	20.0 in 1 million	1.0
Exceeds Threshold?	No	No

Impact Determination: As shown in Table 15, the proposed project would result in a less-than-significant cancer risk, chronic health hazard, and acute health hazard at the maximally affected individual receptors. Therefore, the proposed project's health risk impacts would be less than significant.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

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

SJVAPCD's CEQA guidance defines a significant odor impact as one that creates objectionable odors affecting a substantial number of people. The SJVAPCD's guidance lists facility types that commonly

produce odors and the separation distance from sensitive receptors (typically 1 mile) needed to prevent significant odor impacts (SJVAPCD 2015a). As noted in SJVAPCD's guidance, the list of facility types is not meant to be all-inclusive. Consequently, SJVAPCD recommends that all potential odor sources be evaluated in additional detail if they are located within 1 mile of sensitive receptors.

During construction, diesel exhaust produced by off-road construction equipment could generate odors; however, several pieces of construction equipment would need to operate concurrently in a relatively small area to generate a constant plume of diesel exhaust that would cause objectionable odors for a substantial number of people. These circumstances would not occur as part of the proposed project.

During operation, diesel exhaust produced by locomotives vessels and trucks could generate odors. However, the majority of the locomotive operation would occur within the confines of the Port. The closest residential receptors to the rail line are approximately 600 feet at their closest location. Although locomotive emissions may be detectable at a few residences on occasion, these odors are not expected to be significant. Similarly, the odors from the product unloading area are not expected to be significant because of the low amount of fugitive emissions that would be generated and because of the substantial distance of the product unloading area from residences.

Impact Determination: Construction and operational odors would not affect a substantial number of people. Therefore, this impact is considered to be less than significant.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.2 Biological Resources

This section describes existing biological resources conditions in the project area and analyzes how the proposed project may affect these resources. It also describes applicable rules and regulations pertaining to biological resources that could affect the proposed project.

3.2.1 Environmental Setting

Biological conditions occurring in the project area were observed during a reconnaissance survey conducted in August 2018 to assess current habitat conditions, determine presence of any jurisdictional waters and wetlands, and evaluate the project area's potential to support special-status species or sensitive habitats (Anchor QEA 2018). A search of the California Natural Diversity Database (CNDDB) was conducted to identify recorded special-status species occurrences within the U.S. Geological Survey (USGS) Stockton West 7.5-minute quadrangle and surrounding quadrangles (Terminous, Lodi South, Waterloo, Stockton East, Manteca, Lathrop, Union Island, and Holt; CDFW CNDDB 2018).

3.2.1.1 Habitat Communities

The project site occurs within a highly developed and industrialized area and is entirely surrounded by existing industrial or commercial developments, roadways, and rail lines. This includes Port Road H, the Carry Transit terminal, and railroads to the north; Port Road 11, Westway Feed Products terminal, and railroads to the east; the Port Annex and Police Department buildings, Port Road G, Port Administrative buildings, and an AST to the south; and Port Road 13 and two Crowne Cold Storage domes to the west.

The area proposed for terminal development is currently vacant. It is entirely flat and surfaced in compacted dirt, with some coverage of loose gravel. Typical site conditions are shown in Photographs 1 through 4. The proposed project would include two new pipelines: one approximately 2,500 feet long connecting the berth at Wharf 8 to the project site and another 1,800 feet long connecting the site to the Port Road A facility's rail connection. The 2,500-foot pipeline would be added to the existing pipeline rack at Wharf 8: a 700-foot pipeline section would run from the Port Road A location to the berth Wharf 8 and an 1,800-foot pipeline section would run between the Port Road A facility and the proposed Project. The existing supports on the 700-foot section run may need to be reinforced but no new supports or footings would be required. The 1,800-foot-long elevated pipeline would extend above Port Road H, the Carry Transit terminal, and railroads before connecting the site to the Port Road A facility's rail connection. Pipeline support footers would be constructed in these areas. The second 2,500-foot-long connection would be added to the existing pipeline rack at Wharf 8, terminating at the product berthing site adjacent to the San Joaquin River. This shorter pipeline would not require any new footers.

Photograph 1
View of western portion of project site looking south

Photograph 2
View of eastern portion of project site looking east

Photograph 3
View from inside Wharf 8 building looking southeast

Photograph 4
View of Wharf 8 inlet shoreline looking south towards existing Contanda Port Road A facility from northern edge of Wharf 8 building

Vegetation within the project site includes a row of approximately 15 mature ornamental 30-foot-tall ash trees (*Fraxinus* sp.) that extends north to south across the center length of the area proposed for development (Photograph 5). There are an additional two moderate-size ornamental trees on the southwestern edge of the project site. Extremely sparse coverage of ruderal vegetation also occurs throughout the project site. Ornamental shrubs are present just outside the project site, along the northern edge of the Port Annex building. There is no significant vegetation in the location of the proposed pipelines and support footings, although the support footings may encroach on very small areas of ruderal vegetation.

Photograph 5
View of mature ash across center of project area and sparse ruderal vegetation

Although vacant, the project site has been significantly altered, as evidenced by the flat topography, compacted dirt and gravel surfaces, and ornamental vegetation. Based on a review of historical documents, several buildings were historically located on the project site; approximately six on the eastern portion of the site and one in the southwestern corner of the site. The buildings were constructed sometime after 1940 and were all removed by 1963 (GHD 2018).

3.2.1.2 Wetlands and Jurisdictional Waters

There are no known wetlands or jurisdictional waters within or adjoining the project site.

3.2.1.3 Special-Status Wildlife Species

The CNDDB identifies 21 special-status (threatened or endangered under the federal Endangered Species Act [ESA] or California Endangered Species Act [CESA], state species of special concern, or CDFW fully protected species) wildlife species within the study area, as identified through a search of

the proposed project quadrangle and eight surrounding quadrangles (Appendix F). Potential species occurrence was determined based on habitat requirements and on-site conditions. The project site's disturbed and previously developed condition and presence within a highly industrialized area precludes the presence of most special-status species, although several special-status bird species may have a low potential for occurrence in or around the project site, primarily within mature trees. This includes Swainson's hawk (*Buteo swainsoni*; CESA threatened) and white-tailed kite *(Elanus leucurus*; CDFW fully protected). Trees within and in proximity to the project site may also provide suitable nesting habitat for Migratory Bird Treaty Act (MBTA)-protected bird species. These potentially present species are described in the following subsections.

3.2.1.3.1 Swainson's hawk

Swainson's hawk is a long-distance migrant species. Central Valley populations winter primarily in Mexico and arrive at their Central Valley breeding grounds in mid-March to early April. Nests are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures. Egg laying generally occurs in April, and young are present in May and June. Most young have fledged the nest by the end of July and are relatively independent of parental protection; however, fledged young remain with their parents until they depart in the fall for migration. Migration to wintering grounds generally occurs around September; however, some individuals or small groups may winter in California (Caltrans and Port 2013). Swainson's hawks are regularly observed throughout the Port.

The row of mature ash trees across the center of the project site, as well as other mature trees south and southwest of the project site, may provide nesting habitat to the Swainson's hawk.

3.2.1.3.2 White-tailed kite

White-tailed kites nest and forage in a variety of settings. They hunt over grassland, savanna, cultivated fields, marshes, and riparian woodland and are also commonly observed foraging along freeway medians and edges. Kites prey primarily on voles and other small rodents but also eat birds, snakes, lizards, frogs, and large insects. They build stick nests in the tops of trees, preferentially near an open foraging area, and typically forage within 0.5 mile of the nest during breeding season, which extends from February through October. The nearest white-tailed kite occurrence was recorded approximately 3.5 miles southeast of the project area in April 2002 (CDFW CNDDB 2018).

As with Swainson's hawk, mature trees within and in proximity to the project site may provide nesting habitat for white-tailed kites.

3.2.1.3.3 Migratory Bird Treaty Act Protected Birds and Raptors

MBTA-protected birds could roost or nest in trees within or near to the project site. Several MBTA-protected birds have been observed at the Port, including, but not limited to the following (Anchor QEA 2018):

- Barn swallow (*Hirundo rustica*)
- Bushtit (*Psaltriparus minimus*)
- Belted kingfisher (*Megaceryle alcyon*)
- House finch (*Haemorhous mexicanus*)
- Cliff swallow (*Petrochelidon pyrrhonota*)
- White-tailed kite (*Elanus leucurus*)
- Swainson's hawk (*Buteo swainsoni*)
- Common raven (*Corvus corax*)

3.2.1.4 Special-Status Plant Species

There are 21 plant species considered rare, threatened, or endangered by the California Native Plant Society (CNPS; a CNPS Rank 1 or 2 species) with recorded occurrences in the vicinity of the project site, as identified through a search of the proposed project quadrangle and eight surrounding quadrangles (Appendix F; CDFW CNDDB 2018). Of these 19 species, two are state or federal endangered: palmate-bracted bird's-beak (*Chloropyron palmatum*; federal and state endangered) and Delta button-celery (*Eryngium racemosum*; state endangered). Due to the lack of suitable habitat within the project area, none of the special-status plant species with recorded occurrences have the potential to occur within the project site.

3.2.2 Applicable Regulations

3.2.2.1 Federal

3.2.2.1.1 Federal Endangered Species Act

Under the ESA, the Secretary of the Interior and the Secretary of Commerce have the joint authority to list a species as threatened or endangered (16 USC 1533[c]). Pursuant to the requirements of the ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the study area and determine whether the proposed project may affect or "take" such species. "Take" is defined by the ESA (16 USC 1532[19]) to mean, "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." An incidental take of a listed species requires consultation with the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service to determine whether the project is likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3]).

3.2.2.1.2 Migratory Bird Treaty Act

The MBTA of 1918 (16 USC 703–711) is the primary legislation in the United States to conserve migratory birds. It implements the United States' commitment to four bilateral treaties, or conventions, for the protection of a shared migratory bird resource. The MBTA prohibits the taking, killing, trading, or possessing of migratory birds. This includes disturbance that causes nest abandonment or loss of reproductive effort (e.g., killing or abandonment of eggs or young).

3.2.2.2 State

3.2.2.2.1 California Endangered Species Act

Under the CESA, CDFW is responsible for maintaining a list of threatened, endangered, and candidate species (California Fish and Game Code [FGC] Section 2070). CDFW also designates "fully protected" or "protected" species as those that may not be taken or possessed. Species designated as fully protected or protected may or may not be listed as endangered or threatened. CDFW also tracks species of special concern, which are animal species whose populations have diminished and may be considered for listing if declines continue. Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the study area and determine whether the proposed project would have a potentially significant impact on such species. "Take" of a species, under the CESA, is defined as an activity that would directly or indirectly kill an individual of a species. The CESA definition of "take" does not include "harm" or "harass," as is included in ESA. As a result, the threshold for a take under the CESA may be higher than under ESA because habitat modification is not necessarily considered take under the CESA. CDFW may issue incidental take permits when adequate minimization measures are met and issuance of the permit would not jeopardize the continued existence of a state-listed species. Should the project applicant receive authorization to take federally listed species under ESA, take authorization may also be sought as a "consistency determination" from CDFW under FGC Section 2080.1.

3.2.2.2.2 California Native Plant Protection Act

The California Native Plant Protection Act (FGC Sections 1900–1913), Natural Communities Conservation Planning Act, and CESA provide guidance on the preservation of plant resources. Vascular plants listed as rare or endangered by the CNPS, but which may have no designated status or protection under federal or state endangered species legislation, are defined as follows:

- Rank 1A: Plants presumed to be extirpated in California and either rare or extinct elsewhere.
- Rank 1B: Plants rare, threatened, or endangered in California and elsewhere.
- Rank 2A: Plants presumed to be extirpated in California, but more common elsewhere.
- Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere.
- Rank 3: Plants about which more information is needed—a review list.

- Rank 4: Plants of limited distribution—a watch list.

In general, plants listed as CNPS Rank 1A, 1B, 2A, or 2B also meet the definition of Section 1901, Chapter 10 of the Native Plant Protection Act, and FGC Sections 2062 and 2067. The CNDDB identifies three special-status plant species (CNPS Rank 1 or 2 species) with historic ranges in the vicinity of the study area. However, suitable habitat or microhabitat conditions specific to these species does not exist at the project site.

3.2.2.2.3 Fish and Game Code Sections 3503, 3511, 3513, 4700, 5050, and 5515

Provisions of the MBTA are adopted through the FGC. Under FGC Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or related regulations. FGC Section 3513 prohibits take or possession of any designated migratory non-game bird or any part of such migratory non-game bird. The state code offers no mechanism for obtaining an incidental take permit for the loss of non-game, migratory birds.

The FGC strictly prohibits the incidental or deliberate take of fully protected species. CDFW cannot issue a take permit for fully protected species, except under narrow conditions for scientific research or the protection of livestock; therefore, avoidance measures may be required to avoid a take (FGC Section 3511 for birds, Section 4700 for mammals, Section 5050 for reptiles and amphibians, and Section 5515 for fish).

3.2.2.3 Local

3.2.2.3.1 San Joaquin County Multi-Species Habitat Conservation and Open Space Plan

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), in accordance with ESA Section 10(a)(1)(B) and CESA Section 2081(b) Incidental Take Permits, provides compensation for the conversion of open space to non-open space uses which affect the plant, fish, and wildlife species covered by the plan. The SJMSCP covers 97 species, including federal and state-listed species, as well as species specifically addressed by CEQA.

For projects with the potential to adversely affect special-status species or habitats, project proponents may opt into the SJMSCP to obtain take coverage for species covered by the plan. Opting into the SJMSCP typically entails adhering to avoidance and minimization measures during project construction and mitigating for potential species take or loss of habitat (through credit purchase or other means).

3.2.2.3.2 Stockton Municipal Code Title 16, Division 5, Chapter 16.130

Title 16, Division 5, Chapter 16.130 of the City Municipal Code provides protection for heritage oaks in the City. Heritage oak trees are defined as any *Quercus lobata* (commonly known as valley oak), *Quercus agrifolia* (coast live oak), or *Quercus wislizeni* (interior live oak) tree which is located on

public or private property within the limits of the City and which has a trunk diameter of 16 inches or more, measured at 24 inches above actual grade. Removal of any heritage oak requires a permit from the City Community Development Department.

3.2.3 Environmental Impacts and Mitigation Measures

3.2.3.1 Baseline

At the time of publication of the NOP for the proposed project, the project site was vacant, as detailed in Section 2.2.2. Vegetation was limited to the row of mature ash trees that extends north to south across the center length of the area proposed for development, two ornamental trees on the southwest end of the property, ornamental shrubs north of the existing Port Annex building, and very sparse intermittent coverage of ruderal vegetation.

3.2.3.2 Thresholds

For purposes of this DEIR, the following thresholds, which are based on Appendix G of the CEQA Guidelines (Environmental Checklist), were used to determine whether the proposed project would result in impacts on biological resources. The proposed project would have an impact on biological resources if:

- **BIO-1:** The proposed project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- **BIO-2:** The proposed project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- **BIO-3:** The proposed project would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means.
- **BIO-4:** The proposed project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- **BIO-5:** The proposed project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- **BIO-6:** The proposed project would conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

3.2.3.3 Methodology for Determining Impacts

Potential impacts on biological resources were qualitatively evaluated based on the habitat preferences for various species known or suspected to be in the project area, as well as the quantity and quality of existing habitat. Potential impacts were analyzed using recent CDFW lists for special-status species with the potential to inhabit the study area, local observations, and professional expertise and judgment in evaluating how the proposed project could interact with biological resources.

The proposed measurement indices used to evaluate impacts on biological resources include impacts on special-status species or habitats. The proposed project would be considered to have a major impact if it would be inconsistent with applicable regulations and policies protecting biological resources.

3.2.3.4 Impact Analysis

3.2.3.4.1 BIO-1: Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS?

The proposed project would be constructed within an existing vacant but previously disturbed and developed area within the industrialized Port, and the pipelines and pipeline footings would similarly be constructed in developed industrialized areas. The project site and surrounding area are devoid of unique habitats or habitat features suitable for special-status species, except for mature trees within and near the project site. The row of ash trees across the center of the proposed terminal site, as well as mature trees to the south and southwest, may provide suitable nesting habitat for Swainson's hawk, white-tailed kites, or MBTA-protected bird species. The proposed project includes removing the row of approximately 15 ash trees across the center of the project site and may include removal of the two ornamental trees at the southwestern perimeter of the site. Tree removal could adversely affect nesting birds, if present.

Impact Determination: As described in the analysis presented above, the proposed project has the potential to adversely affect special-status species, which would constitute a potentially significant impact.

Mitigation Measures: The following mitigation measure would be implemented during construction:

- **MM-BIO-1: Obtain Coverage under the SJMSCP.** The proposed project shall obtain coverage for potential impacts to special-status bird species by obtaining coverage under the SJMSCP. It is anticipated that the following avoidance and minimization measures from the SJMSCP and pertaining to special-status bird species would be required and implemented:
  - The project proponent has the option of retaining known or potential Swainson's hawk nest trees (i.e., trees that hawks are known to have nested in within the past 3 years or trees, such as large oaks, which the hawks prefer for nesting) or removing the nest trees. If the project proponent elects to retain a nest tree, and in order to encourage tree retention, the following Incidental Take Minimization Measure shall be implemented during construction activities:
    - If a nest tree becomes occupied during construction activities, then all construction activities shall remain a distance of two times the dripline of the tree, measured from the nest.
    - If the project proponent elects to remove a nest tree, then nest trees may be removed between September 1 and February 15, when the nests are unoccupied.
    - For white-tailed kites, preconstruction surveys shall investigate all potential nesting trees on the project site (e.g., especially tree tops 15 to 59 feet above the ground in oak, willow, eucalyptus, cottonwood, or other deciduous trees), during the nesting season (February 15 to September 15) whenever white-tailed kites are noted on site or within the vicinity of the project site during the nesting season.
    - For the white-tailed kite, or other birds nesting along riparian corridors, a setback of 100 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.
    - For ground nesting or streamside/lakeside nesting birds, a setback of 500 feet from nesting areas shall be established and maintained during the nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.
    - For birds nesting in isolated trees or shrubs outside of riparian areas, a setback of 100 feet from nesting areas shall be established and maintained during the

nesting season for the period encompassing nest building and continuing until fledglings leave nests. This setback applies whenever construction or other ground-disturbing activities must begin during the nesting season in the presence of nests which are known to be occupied. Setbacks shall be marked by brightly colored temporary fencing.

Residual Impact: Less-than-significant impact.

3.2.3.4.2 BIO-2: Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS?

There are no riparian habitats or other sensitive natural communities within or directly adjacent to the project site. While the proposed pipeline alignment occurs adjacent to the San Joaquin River shoreline, which includes riparian vegetation, it would be constructed within an existing developed area and is unlikely to affect any riparian vegetation or habitat. Therefore, the proposed project would have no impact on these biological resources.

Impact Determination: Based on the analysis presented above, the proposed project would result in no impact to riparian habitat or other sensitive natural communities.

Mitigation Measures: None required.

Residual Impact: No impact.

3.2.3.4.3 BIO-3: Would the proposed project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?

There are no wetlands within or directly adjacent to the project site or pipeline alignments, and no in-water work is required as part of the proposed project. Ships would berth at existing docks that currently receive vessels or other ship calls. Therefore, the proposed project would have no impact on federally protected wetlands.

Impact Determination: Based on the analysis presented above, the proposed project would result in no impact to federally protected wetlands.

Mitigation Measures: None required.

Residual Impact: No impact.

3.2.3.4.4 BIO-4: Would the proposed project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Although the project area is along the Pacific Flyway, an established air route of waterfowl and other birds migrating between wintering grounds in Central and South America and nesting grounds in Pacific Coast states and provinces of North America, the disturbed, previously developed, and industrialized nature of the project site and surrounding area likely precludes migratory bird species from using the project site as a stopover during their migration.

The Wharf 8 berthing area is not within any nursery sites for special-status fish species, and the proposed project would not impede migration within the San Joaquin River or other waters. Although docked vessels would temporarily impede localized movement of fish within the immediate berthing area, fish movement throughout the remainder of the channel would remain unimpeded. The very small increase in vessels calls to existing docks (estimated at up to 12 additional ship visits per year) is not anticipated to degrade aquatic habitat values compared to existing conditions, as docks currently accommodate a multitude of vessels throughout the year.

Impact Determination: Based on the analysis presented above, the proposed project would result in no impact to movement of fish or wildlife species, or to wildlife nursery sites.

Mitigation Measures: None required.

Residual Impact: No impact.

3.2.3.4.5 BIO-5: Would the proposed project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The proposed project would not require removal of any oak or street trees and would therefore not conflict with the City Heritage Tree Ordinance or City Municipal Code pertaining to street trees. Conformance with the SJMSCP is addressed under BIO-6. There are no other local policies or ordinances for protecting biological resources that are applicable to the project site or proposed project.

Impact Determination: Based on the analysis presented above, the proposed project would result in no impact from conflicting with local policies or ordinances pertaining to biological resources.

Mitigation Measures: None required.

Residual Impact: No impact.

3.2.3.4.6 BIO-6: The proposed project would conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

As discussed under BIO-1, the row of ash trees across the center of the project site, as well as mature trees to the south and southwest of the project site, may provide suitable nesting habitat for Swainson's hawk, white tailed kites, or MBTA-protected bird species. Tree removal could adversely affect nesting birds, if present. Therefore, the proposed project has the potential to conflict with biological resource goals and policies from the SJMSCP.

Impact Determination: Because the proposed project has the potential to adversely affect special-status species, it has the potential to conflict with biological resource goals and policies from the SJMSCP.

Mitigation Measures:

- MM-BIO-1: Obtain Coverage under the SJMSCP.

Residual Impact: Less-than-significant impact.

3.3 Cultural Resources

This section details the existing historical, archaeological, and paleontological resources within the project area; the variety of resources in the project area and surrounding vicinity; and the relevant federal, state, and local regulations and policies. The information presented in this section is largely based on historical maps and documents about the development of the project area.

Cultural resources are defined as archaeological sites, elements of the historic built environment (e.g., buildings, structures, bridges, or other built features), and places of traditional cultural importance that meet one of the following criteria (14 CCR 15064.5):

- Listed in or eligible for listing in the California Register of Historical Resources (CRHR)
- Listed in a local preservation register
- Identified as significant in a historical resource survey (unless the preponderance of evidence demonstrates that it is not historically or culturally significant)
- Determined to be significant by the CEQA lead agency, provided the determination is supported by substantial evidence considering the whole record

3.3.1 Environmental Setting

3.3.1.1 Paleontological Setting

The proposed project is located east of the San Joaquin River, south of the confluence with the Stockton Deep Water Ship Channel. Prior to historic land modifications, the region was characterized

by extensive wetlands, with dry land available only on small hills and natural levees (Wagner 1981). The area was a slightly elevated stream terrace with the low-lying Sacramento-San Joaquin Delta to the west and the higher ground of the Central Valley to the east. Soils are Sacramento clay loam, which is derived from alluvium, found in nearly level basins, and "subject to frequent overflow where not protected by levees or located within flood control systems" (NRCS 1999).

The Bureau of Land Management developed a classification system based on the potential for the occurrence of significant paleontological resources in a geologic unit and the associated risk for impacts to the resource (BLM 2007, 2008). The system is summarized here from those references. Any rock material that contains fossils has the potential to yield fossils that are unique or significant to science. However, paleontologists consider that geological formations having the potential to contain vertebrate fossils are more sensitive than those likely to contain only invertebrate fossils. Invertebrate fossils found in marine sediments are usually not considered by paleontologists to be unique resources, because the geological contexts in which they are encountered are widespread and fairly predictable. Invertebrate fossil species are usually abundant and well-preserved. In contrast, vertebrate fossils are much rarer than invertebrate fossils, and are often poorly preserved. Therefore, when found in a complete state, vertebrate fossils are more likely to be a significant resource than are invertebrate fossils. Thus, geologic formations having the potential to contain vertebrate fossils are considered the most sensitive. Vertebrate fossil sites are usually found in non-marine upland deposits (BLM 2007). The project site is situated on fill materials, atop Holocene alluvium. Alluvial deposits typically contain only invertebrate fossils (if any), and those are out of original depositional context (BLM 2007). Vertebrate fossils are considerably more likely to be significant or unique, as are fossils in their original context (BLM 2008).

3.3.1.2 Cultural and Ethnographic Setting

The Sacramento-San Joaquin Delta has probably been occupied since the late Pleistocene/early Holocene, beginning around 11,000 years ago. However, alluvial processes have likely erased most early archaeological sites. The earliest documented sites in the region date to about 9,000 years ago and are thought to have been mobile communities focused on hunting and fishing (Milliken et al. 2007; Chartkoff and Chartkoff 1984). Warm and dry conditions in the mid-Holocene (about 7,000 to 3,000 years ago) are associated with a change in subsistence focus towards plant gathering; millingstones are common during this period, though communities are still thought to have been fairly mobile (Fagan 2003). Later in this period, a trend towards sedentary communities and economic diversification emerges. The late Holocene is characterized by a continued increase in economic diversity and sociopolitical complexity, with emphasis on long-distance trade (Moratto 1984; Chartkoff and Chartkoff 1984). Cultures from this era correspond with ethnographically described cultures.

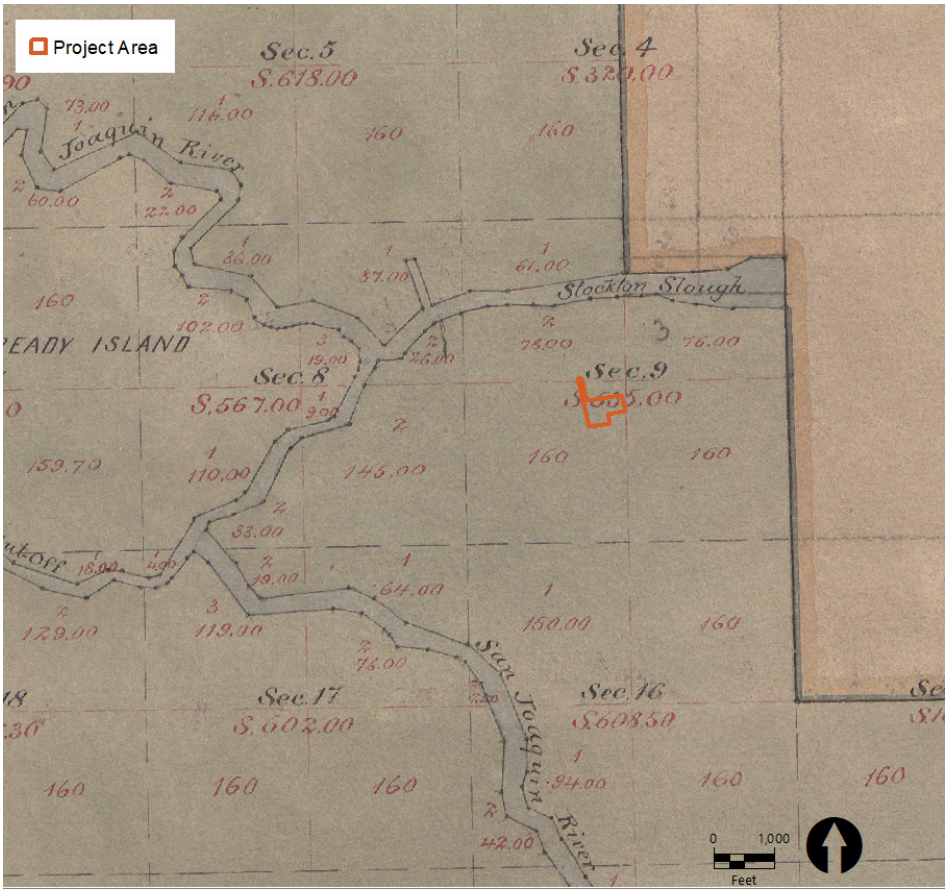
The project area is in the traditional territory of the Yokuts tribe and may also have been used or settled by Plaines Miwok and Wintun peoples. Yokuts communities were organized into a number of tribes united by a common language (Golla 2007). They lived throughout the San Joaquin Valley and relied on the region's rich fishing and hunting resources (Kroeber 1976). Native American communities were severely impacted by European contact (Milliken 1995). However, Yokuts people have endured and are now members of several federally recognized tribes.

The earliest European contact in the region dates to the late 1500s and was characterized by the establishment of Spanish missions and pueblos. Trappers from the Hudson's Bay Company also settled in the area that would become Stockton in the early 1800s, founding what is still known as French Camp (Wood 1973). The new Mexican government took control of California in 1822 and began to distribute lands to private owners. In 1842, German immigrant Charles Weber passed through what would become Stockton; he settled there and established a store in 1847 (Wood 1973).

The gold rush that began in 1848 spurred a boom in the Stockton area, and the city incorporated in 1850. Hundreds of vessels, from paddlewheelers to barks, plied the area serving miners. The Swamp Land Act of 1850 (also known as the Overflow Land Act) allowed for the transfer of wetlands from federal to state ownership, which began the process of reclaiming lands through drainage, dredging, levee construction, and fill placement (Garone 2011). Post-gold rush, the economy was driven by shipbuilding and agriculture, which remain primary industries today.

Prior to historic land-making, the project area would likely have been seasonally inundated. An 1880 General Land Office map shows conditions prior to historic land modifications; the project area was in the uplands about 0.25 mile from the "Stockton Slough" (Figure 3). By 1913, levees had been constructed, which channelized the San Joaquin River and Stockton Deep Water Ship Channel and allowed for the filling of adjacent uplands. Industrial development intensified through the mid- to late twentieth century. The site is currently occupied by rail spurs to the north and a vacant lot, and has been since at least 1993, according to aerial photographs.

Figure 3
1880 General Land Office Map



Township 1 North, Range 6 East, Mount Diablo Meridian

Results of geotechnical work at the project site are consistent with the environmental and cultural history. Six geotechnical borings conducted for the project revealed that "the upper 1 to 4 feet of soils include undocumented fill soils" (SEG 2018). The origin of sediments between the fill and the current water level is unclear; it is likely that some of the sediments are dredge spoils from the straightening of the San Joaquin River to create the ship channel and the berth near the project site.

Water level at the time of the borings (October 2018) was approximately 12 to 18 feet below the surface (SEG 2018). Groundwater levels in the region vary by 10 to 20 feet seasonally, with lows in late summer and fall. The groundwater level has fallen throughout San Joaquin County since the 1960s, with a low "cone of depression" around the City. This indicates that groundwater was likely higher prior to historically increasing withdrawals (GBA 2004). Based on seasonal variance and historically higher groundwater levels prior to historic and modern land modifications, the project area likely exhibited historically higher groundwater tables and possible surface inundation.

According to a search of the California Historical Resources Information System (CHRIS), there are no recorded cultural resources in the project area, and no cultural resources surveys have been conducted at the project site. Two archaeological sites have been recorded within a mile of the project area. Site P-39-05238 is a historic refuse scatter along West Charter Way, approximately 0.5 mile south of the project area. Site CA-SJO-103, a precontact village site containing burials, is located near the eastern approach of the West Charter Way Bridge (Garwood Bridge) over the San Joaquin River, approximately 0.9 mile south of the project area. No archaeological surveys have been conducted at the project site.

3.3.2 Applicable Regulations

3.3.2.1 State

3.3.2.1.1 California Environmental Quality Act

CEQA and the CEQA Guidelines include procedures for identifying, analyzing, and disclosing potentially significant adverse impacts of a project to historical and unique archaeological resources, including resources listed in or formally determined eligible for the National Register of Historic Places (NRHP), the CRHR, or local registers. CEQA requires the lead agency to consider the effects of a project on archaeological resources and determine whether any identified archaeological resource is a historical resource (i.e., if the archaeological resource meets the criteria for listing in the CRHR) (CEQA Guidelines Sections 15064.5[a][1],[3] and 15064.5[c][1–2]). An archaeological resource that qualifies as a historical resource under CEQA generally qualifies for listing under Criterion 4 of the CRHR (CEQA Guidelines Section 15064.5[a][3][D]; NRHP Criterion D). An archaeological resource may qualify for listing under Criterion 4 when it can be demonstrated that the resource has the potential to significantly contribute to questions of scientific or historical importance. Archaeological resources that are not historical resources according to the above definitions may be "unique archaeological resources," as defined in PRC Section 21083.2, which generally provides that "non-unique archaeological resources" do not receive any protection under CEQA. If an archaeological resource is neither a unique archaeological resource nor a historical resource, the effects of a project on those resources are not considered significant under CEQA.

3.3.2.1.2 Assembly Bill 52

AB 52, enacted in 2016, establishes a formal role for California Native American Tribes[2] in the CEQA process and promotes the involvement of California Native American Tribes in the decision-making process when it comes to identifying and developing mitigation for impacts to resources of importance to their culture. AB 52 requires consideration of TCRs. A TCR is defined as a property,

[2] California Native American Tribes are defined as tribes located in California that are on the contact list maintained by NAHC. This definition does not distinguish between federally recognized and non-federally recognized tribal groups and is therefore more inclusive than the federal definition of "Indian tribe" (PRC Section 21073).

landscape, or object which is of cultural value to a tribe and is eligible for the CRHR or a local historic register (or is determined by the lead agency to be a TCR). Under the updated guidelines, tribes must be notified of a project when it is initiated, and can request consultation within 30 days, after which the lead agency must begin consultation within 30 days of the request.

3.3.2.1.3 California Executive Order W-26-92

California Executive Order W-26-92 affirms that all state agencies shall recognize, preserve, and maintain significant heritage resources of the state.

3.3.2.2 Local

3.3.2.2.1 City of Stockton Municipal Code

The City designates Landmarks and Historic Sites under the City Municipal Code, Title 16, Division 7, Chapter 16.220. Landmarks are artifacts, natural features, or structures notable for one or more of the following: archaeological interest; architectural craftsmanship, style, or type; association with a historic event or person; association with the heritage of the City, state, or nation; visual characteristics; relationship to another landmark; or integrity as a natural environment. Historic sites are areas, neighborhoods, properties, or sites which meet one or more of the following: archaeological interest; association with the heritage of the City, state, or nation; visual characteristics; association with a particular way of life important to the city; or association with a historic event, significant person, or a person significant to a specific national origin. Historic sites cannot be relocated or demolished without a permit.

3.3.3 Environmental Impacts and Mitigation Measures

3.3.3.1 Baseline

At the time of publication of the NOP for the proposed project, the project site was vacant, as detailed in Section 2.2.2.

3.3.3.2 Thresholds

For purposes of this DEIR, the following thresholds, which are based on Appendix G of the CEQA Guidelines (Environmental Checklist), were used to determine whether the proposed project would result in impacts on cultural resources. The proposed project would have an impact on cultural resources, including tribal cultural resources, if:

- **CHR-1:** The proposed project would cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.
- **CHR-2:** The proposed project would cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

- **CHR-3:** The proposed project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- **CHR-4:** The proposed project would disturb any human remains, including those interred outside of formal cemeteries.
- **CHR-5:** The proposed project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: 1) listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k); or 2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024. 1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.3.3.3 Methodology for Determining Impacts

The CEQA guidelines define a substantial adverse change in the significance of a historical resource as a significant effect on the environment. A substantial adverse change to archaeological or historical resources is defined to include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired (CEQA Guidelines Section 15064.5[b][1]). The significance of a historical resource is materially impaired when a project diminishes the characteristics that convey its historical significance and that justify its inclusion on a historic register. This is consistent with the criteria for determination of adverse effect in the National Historic Preservation Act Section 106 regulations and guidelines.

3.3.3.4 Impact Analysis

3.3.3.4.1 CHR-1: Would the proposed project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

The project site is a vacant industrial site within an industrial port with no known historical resources. No structures would be modified or demolished for the proposed project. There would be no changes to the character of the surrounding area. As previously noted, a search of CHRIS concluded that there are no recorded historical resources in the project area.

Impact Determination: There are no historical resources in the project area. Therefore, there would be no impacts to historical resources.

Mitigation Measures: None required.

Residual Impact: No impact.

3.3.3.4.2 CHR-2: Would the proposed project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Ground disturbing activities would include the following:

- Minor grading and tree/vegetation removal across the site expected to extend no deeper than 2 feet below the ground surface
- Construction of a foundation for ASTs, consisting of a 2-foot-thick reinforced concrete slab supported by approximately 60 drilled concrete piers that are 2 feet in diameter and 40 feet deep
- Construction of the pipeline, consisting of two piers on each side of the pipeline approximately every 20 feet for a total of about 156 piers. Each pier would be 2.5 feet in diameter and 20 feet deep

Native sediments would be encountered where piers would be installed, as the artificial fill in the project area is likely only 1 to 4 feet thick (possibly underlain by an unknown amount of dredge spoils). However, the landform history and nearby borings results indicate that the native sediments in the project area were probably inundated at least seasonally, and if so, would have little potential for archaeological resources.

Because of the low risk of finding resources, the following condition would be added to construction specifications for the proposed project:

- **Project Condition CHR-1: Stop Work in the Area If Prehistoric or Historical Archaeological Resources Are Encountered.** In the unlikely event that any artifact, or an unusual amount of bone, shell, or non-native stone, is encountered during construction, work would be immediately stopped and relocated to another area. The contractor would stop construction within 10 meters (30 feet) of the exposure of these finds until a qualified archaeologist can be retained by the Port to evaluate the find (see 36 CFR 800.11.1 and 14 CCR 15064.5[f]). Examples of such cultural materials might include concentrations of ground stone tools such as mortars, bowls, pestles, and manos; chipped stone tools such as projectile points or choppers; flakes of stone not consistent with the immediate geology, such as obsidian or fused shale; a historic trash pit containing bottles and/or ceramics; or structural remains. If the resources are found to be significant, they would be avoided or mitigated consistent with State Historic Preservation Officer Guidelines.

Impact Determination: The proposed project is not expected to encounter subsurface material that might contain intact archaeological resources. However, because the proposed project includes disturbance of soil through direct removal, if archaeological materials are present in previously undisturbed native sediments, they could potentially be disturbed during construction. If

archaeological materials are encountered during construction, the proposed project would comply with state requirements regarding identification, evaluation, and mitigation of impacts to significant archaeological sites, as well as consultation with tribes and agencies as detailed in Project Condition CHR-1. This includes CEQA Guidelines Section 15064.5(f), which requires implementing "provisions for historical or unique archaeological resources accidentally discovered during construction." Therefore, the proposed project would result in less-than-significant impacts.

Mitigation Measure: None required.

Residual Impact: Less-than-significant impact.

3.3.3.4.3 CHR-3: Would the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

As previously discussed, the project site is situated on fill materials, atop Holocene alluvium. There are no geological features on or near the site. Alluvial deposits typically contain only invertebrate fossils (if any), and those are out of original depositional context. Vertebrate fossils are considerably more likely to be significant or unique. Due to its geomorphological history, the project site is not likely to contain any fossils other than invertebrate fossils that are in a re-deposited context. Therefore, it is very unlikely that any fossil that is unique or scientifically significant is present at the site.

Impact Determination: Because it is unlikely that unique or significant paleontological resources are present at the project site, and there are no geological features on or near the facility, there is little to no potential for the proposed project to directly or indirectly impact paleontological or geologic features. Impacts would be considered less than significant.

Mitigation Measure: None required.

Residual Impact: Less-than-significant impact.

3.3.3.4.4 CHR-4: Would the proposed project disturb any human remains, including those interred outside of formal cemeteries?

Impact Determination: As described under CHR-2, the proposed project would be built in fill, possibly extending into native sediments that have low potential for human remains. However, because the proposed project includes disturbance of soil through direct removal, if remains are present in previously undisturbed native sediments, they could potentially be disturbed during construction. If human remains are encountered during construction, the proposed project would comply with state and federal requirements regarding identification, evaluation, and mitigation of impacts to significant archaeological sites, as well as consultation with tribes and agencies as detailed in Project Condition CHR-1. This includes CEQA Guidelines Section 15064.5(f), which requires

implementing "provisions for historical or unique archaeological resources accidentally discovered during construction." Therefore, the proposed project would result in less-than-significant impacts.

Mitigation Measure: None required.

Residual Impact: Less-than-significant impact.

3.3.3.4.5 CHR-5: Would the proposed project cause a substantial adverse change in the significance of a tribal cultural resource?

The proposed project would be located at a vacant industrial site within an industrial port with no known historical resources. No structures would be modified or demolished for the proposed project. As previously discussed, a search of CHRIS concluded that there are no recorded historical resources in the project area.

The NOP was sent to the NAHC, who responded and requested that: a) the Port contact any tribes that had previously requested consultation under AB 52 for Port projects; and b) the Port submit a request for a search of NAHC's Sacred Lands Information File. A search of the NAHC's Sacred Lands Information File was requested, and consultation initiation letters were sent to the Buena Vista Tribe of Miwuk Indians and the Wilton Rancheria Tribe, in November 2018. No responses or requests for consultation were received.

Impact Determination: The proposed project is not expected to encounter subsurface material that may contain human remains. However, because the proposed project includes disturbance of soil through direct removal, if remains are present in previously undisturbed native sediments, they could potentially be disturbed during construction. If human remains are encountered during construction, the proposed project would comply with state and federal requirements regarding identification, evaluation, and mitigation of impacts to significant archaeological sites, as well as consultation with tribes and agencies as detailed in Project Condition CHR-1. This includes CEQA Guidelines Section 15064.5(f), which requires implementing "provisions for historical or unique archaeological resources accidentally discovered during construction." Therefore, the proposed project would result in less-than-significant impacts.

Mitigation Measure: None required.

Residual Impact: Less-than-significant impact.

3.4 Geology and Soils

This section describes the geology and soil conditions at the project site and analyzes how the proposed project may affect or be affected by those conditions. This section also describes applicable rules and regulations pertaining to geology and soil conditions, including but not limited to seismic hazards. The analysis in this section is based in part on information and data presented in the geotechnical report completed for the proposed project (SEG 2018).

3.4.1 Environmental Setting

3.4.1.1 Soils

Seven test borings were drilled throughout the project site to investigate soil conditions. In general, the soils encountered from the surface and below the pavements primarily included sand with silt, sandy silt, silty sand, lean clay with sand, and sandy lean clay within the upper 10 feet below site grade (BSG). Below the near surface soils interbedded layers of lean clay, clayey sand, silty sand, sand with silt, and sandy lean clay were encountered to the maximum depth explored during drilling of 46.5 feet BSG. The cone penetration tests (CPT) interpreted soil conditions generally similar to those encountered during drilling. According to the CPT soundings, below a depth of about 30 feet BSG, sand to silty sand to sandy silt soils were encountered to depths around 37.5 feet BSG. Below these clay soils, silty sand soils were encountered to depths around 43 feet BSG. Below 43 feet BSG, the soils encountered included sand, sand to silty sand, sandy silt to clayey silt, and clayey silt to silty clay to the maximum depth explored of 75 feet BSG. It should be noted that undocumented fills were observed in two of the borings to an approximate depths of 1 to 4 feet (SEG 2018).

Two consolidation tests performed on near surface samples resulted in about 2 to 7% consolidation under a load of 8 kips per square foot. When wetted under a load of 2.0 kips per square foot, these samples exhibited less than 1% collapse. Two Atterberg limits tests performed on soil samples resulted in plasticity indexes of 4 and 14 with liquid limits values of 21 and 30, respectively. An expansion index test performed on a near surface sample resulted in an expansion index of 29 (SEG 2018).

Soils within the project site are classified as Site Class D in accordance with Chapter 16 of the California Building Code (SEG 2018).

The proposed pipeline alignment area has been mapped by the National Resources Conservation Service as entirely underlain with Yellowlark gravelly loam with 2 to 5% slopes (NRCS 2017). Yellowlark gravelly loam is well-drained with slow infiltration rates and is also associated with a high water table (3 to 4 feet below ground surface).

3.4.1.2 Fault Rupture

Surface fault rupture is defined as slip on a fault plane that has spread to the Earth's surface and caused a rupture or disturbance. Fault rupture almost always follows pre-existing faults, which are zones of weakness. No known active faults (defined by the state of California as faults that show evidence of movement during the past 10,000 years) are within 25 miles of the project area (Caltrans and Port 2013), and the project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone (Stockton Port District 2012; SEG 2018). Numerous active and potentially active faults, however, are identified east and west of the project site. The nearest active fault is the Great Valley 7 fault, which is located 18.38 miles from the project site (SEG 2018).

3.4.1.3 Ground Shaking

Ground shaking is the most widespread effect of earthquakes. The most likely sources of strong ground shaking are from the San Andreas, Hayward, Calaveras, Midland, Green Valley-Concord, and Tracy-Stockton faults. Based on the proximity of several dominant active faults and seismogenic structures, as well as the historic seismic record, the project area is considered subject to relatively low seismicity and ground shaking. Based on the USGS web-based application "U.S. Seismic Design Maps", the estimated Maximum Considered Earthquake (MCE) peak ground acceleration adjusted for site class effects was determined to be 0.393g (based on both probabilistic and deterministic seismic ground motion; SEG 2018).

3.4.1.4 Liquefaction

Soil liquefaction is a state of soil particle suspension caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs under saturated conditions in soils such as sand in which the strength is purely frictional. Primary factors that trigger liquefaction are: moderate to strong ground shaking (seismic source), relatively clean, loose granular soils (primarily poorly graded sands and silty sands), and saturated soil conditions (shallow groundwater). Due to the increasing overburden pressure with depth, liquefaction of granular soils is generally limited to the upper 50 feet of a soil profile. However, liquefaction has occurred in soils other than clean sand.

Soils at the project site are described in Section 3.4.1.1. Free groundwater was encountered at a depth of 14 feet below ground surface during the geotechnical investigation. In addition, based on available water well data, groundwater depths in April 1983 indicate a high groundwater depth of approximately 10.8 feet below ground surface (SEG 2018).

A seismic hazard, which could cause damage to the proposed development during seismic shaking, is the post-liquefaction settlement of the liquefied sands. As such, the potential for soil liquefaction during a seismic event was evaluated using the Liquefy Pro computer program (version V.5) developed by CivilTech Corporation and using data obtained from the CPTs conducted as part of this investigation. For the analysis, a maximum earthquake magnitude of 6.1 Mw, a peak horizontal

ground surface acceleration of 0.393g, and an historical high groundwater depth of 10 feet below site grade. The maximum earthquake magnitude was derived from deaggregation of seismic sources obtained using the USGS 2008 "Interactive Deaggregation" website (SEG 2018). Based on the results of this analysis, total seismic-induced settlement of about 4.5 inches and differential seismic settlements of about 2.5 inches in 40 feet were estimated. Relatively thick layers (approximately 15 feet thick) of liquefiable soils were noted at depths between about 27 feet BSG and 42 feet BSG (SEG 2018).

3.4.1.5 Lateral Spreading

Lateral spreading is a form of liquefaction that results in lateral ground movement during which cohesive soil layers may fracture, subside, rotate, or disintegrate as a result of seismic activity. During an earthquake, lateral spreading usually takes place along weak shear zones that have formed within a liquefiable soil layer. Lateral spreading has generally been observed to take place in the direction of a free face (i.e., retaining wall, slope, and channel) but has also been observed to a lesser extent on ground surfaces with very gentle slopes. Due to the relatively flat topography in the project area, and observed liquefaction potential, the geotechnical report concluded the likelihood of lateral spreading to be low (SEG 2018).

3.4.1.6 Slope Failure and Slope Stability

Earthquakes can cause significant slope stress, potentially resulting in earthquake-induced landslides. Landslides most commonly occur in areas with steep slopes or within slide-prone geologic units that contain excessive amounts of water. Other factors that affect slope stability include site geology, climate, and human activity. The project site is entirely flat, as are parcels to the north, south, east, and west. No signs of slope failure or slope instability were observed at the project site (Anchor QEA 2018), and the geotechnical report concluded that landslide is not considered a hazard for the proposed project (SEG 2018).

3.4.1.7 Expansive Soils

Expansive soils are high in clay content and increase and decrease in volume upon wetting and drying, respectively. The change in volume exerts stress on buildings and other loads placed on these soils. Expansive soils are common throughout California and can cause damage to foundations and slabs unless properly treated during construction. Grading, site preparations, and backfill operations associated with subsurface structures can often eliminate the potential for expansion. Expansion index testing performed during the geotechnical report identified an expansion index of 29 for the near surface sample (SEG 2018), which represents low expansive susceptibility per the Uniform Building Code (International Conference of Building Officials 1994).

3.4.1.8 Static Settlement

The increases in effective stress to underlying soils which can occur from proposed project activities, including but not limited to tank loading, placement of fill, or withdrawal of groundwater, can cause vertical settlement resulting in surface deformation and excessive total and differential settlement to the proposed tank structure. Static settlement was evaluated based on the subsurface data obtained from test borings, CPTs, and the results of associated laboratory testing. Evaluation of total and differential static settlements was prepared based on the following: 1) a tank diameter of about 62 feet; 2) total anticipated tank loads of 11,000 kips; and 3) the compressibility of the native soils encountered. Based on a tank diameter of 62 feet and maximum anticipated load of 11,000 kips, an estimated uniform bearing pressure of about 3,200 pounds per square foot was estimated. Based on the anticipated loading and soils encountered, total and differential static settlements of about 4.75 inches and 2.5 inches, respectively, in 40 feet were estimated.

3.4.1.9 Erosion

Erosion is the detachment and movement of soil materials through natural processes or human activities. The project site resides within a Mediterranean climate, which is exemplified by moist winters and dry summers. Therefore, during the winter the project area is more prone to water erosion, while in the summer the project area is more prone to wind erosion. As noted, the project site and surrounding parcels are entirely flat, and there are no surface waterbodies on site. No evidence of erosion was observed at the project site (Anchor QEA 2018).

3.4.2 Applicable Regulations

3.4.2.1 Federal

3.4.2.1.1 International Building Code

The International Building Code addresses the design and installation of building systems through requirements that safeguard public health and safety. The code establishes minimum regulations for building systems, using prescriptive and performance-related provisions. The International Building Code is available for adoption and use by jurisdictions internationally. The California Building Code is based on the International Building Code.

3.4.2.2 State

3.4.2.2.1 Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. According to the act, buildings for human occupancy cannot be constructed in regulatory "earthquake fault zones" established and mapped around the surface traces of active faults. This typically includes areas within approximately 200 to 500 feet of

major fault lines. The construction of habitable structures is not proposed as part of the proposed project, and the study area is not in an earthquake fault zone as defined by the act; as such, this act would not apply to the proposed project.

3.4.2.2.2 Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 was developed to reduce threats to public health and safety and to minimize property damage caused by earthquakes, including the effects of ground shaking, liquefaction, landslides, other ground failure, and other hazards. The act directs the California Geological Survey to identify and map seismic hazard zones for the purpose of assisting cities, counties, and other local permitting agencies to regulate certain development projects in these zones. Before a development permit may be granted for a site in a seismic hazard zone, a geotechnical investigation of the site must be conducted, and appropriate mitigation measures must be incorporated into the project's design.

3.4.2.2.3 California Building Code

The California Building Code contains the minimum standards for design and construction in California. The standards provide requirements for general structural design and include means for determining earthquake loads, as well as other loads (e.g., flood, snow, and wind), for inclusion into building codes. The provisions of the California Building Code apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California. This code would apply to construction of the proposed project.

3.4.2.3 Local

3.4.2.3.1 Stockton Municipal Code

Section 15.48.050, "Construction and Application," of the City Municipal Code, includes a requirement that seeks to mitigate hazards associated with erosion: "During construction, construction activities shall be designed and conducted to minimize runoff of sediment and all other pollutants onto public properties, other private properties and into the waters of the United States." Section 15.48.110, "Erosion Control Requirements," contains specific provisions for erosion control for those construction projects where a grading permit is not required. Section 15.48.070 includes requirements for a grading permit that apply to most construction projects. Such permits require implementation of erosion control measures, often referred to as Best Management Practices (BMPs).

3.4.2.3.2 General Plan

The Envision Stockton 2040 General Plan Public Review Draft (General Plan; City 2018b) contains a safety element that addresses environmental hazards, including but not limited to seismic hazards. Relevant safety element policies include the following:

- **POLICY SAF-2.1:** Ensure that community members are adequately prepared for natural disasters and emergencies through education and training.
- **POLICY SAF-2.2:** Prepare sufficiently for major events to enable quick and effective response.

The General Plan is considered a policy document rather than a formal regulation, though many elements are based on existing regulations.

3.4.3 Environmental Impacts and Mitigation Measures

3.4.3.1 Baseline

At the time of publication of the NOP for the proposed project, the project site was vacant, entirely flat, and devoid of notable geologic or soil features.

3.4.3.2 Thresholds

For purposes of this DEIR, the following thresholds, which are based on Appendix G of the CEQA Guidelines (Environmental Checklist), were used to determine whether the proposed project would result in impacts related to geology and soils. The proposed project would have an impact related to this topic if:

- **GEO-1:** The proposed project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
  - Strong seismic ground shaking
  - Seismic-related ground failure, including liquefaction
  - Landslides
- **GEO-2:** The proposed project would have a substantial adverse effect from substantial soil erosion or the loss of topsoil.
- **GEO-3:** The proposed project would have a substantial adverse effect by being located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

- **GEO-4:** The proposed project would have a substantial adverse effect by being located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.
- **GEO-5:** The proposed project would have a substantial adverse effect related to a location with soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater.
- **GEO-6:** The proposed project would have a substantial adverse effect by directly or indirectly destroying a unique paleontological resource or site or unique geologic feature.

3.4.3.3 Methodology for Determining Impacts

Impacts to or associated with geological conditions were qualitatively evaluated based on the potential for the alternatives to temporarily or permanently alter the geology of the project area. In addition, because geological hazards such as earthquakes happen independently of the proposed project, the potential for damage to proposed structures or increased risk of injury due to geologic and seismic hazards were also qualitatively evaluated.

The measurement index for evaluating impacts associated with geology, soils, or seismicity is risk to the public or the environment from geologic processes. A project would be considered to have a major impact if it would result in substantial changes in risks to the public and the environment throughout the project area.

3.4.3.4 Impact Analysis

3.4.3.4.1 GEO-1: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: 1) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42); 2) strong seismic ground shaking; 3) seismic-related ground failure, including liquefaction; or 4) landslides?

The project area is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, and no known surface expression of active faults is believed to cross the project site; therefore, fault rupture through the site is not anticipated.

The project site is within an area considered subject to relatively low seismicity and ground shaking, with MCE peak ground acceleration estimated at 0.393g. Proposed improvements would be limited to on-site structures (e.g., tanks, pipelines, pipeline footings, truck loading infrastructure, and other improvements described in Section 2). Damage to these structures is possible in the event of a large earthquake. Proposed improvements would be constructed in adherence with applicable seismic design parameters and would not increase the potential for human injury or loss of life. This includes

adherence to seismic design parameters from the 2016 California Building Code and American Society of Civil Engineers, as recommended in the geotechnical report (SEG 2018).

The geotechnical report identified relatively thick layers (approximately 15 feet thick) of liquefiable soils were noted at depths between about 27 feet BSG and 42 feet BSG (SEG 2018). To ensure adverse effects from seismic induced settlement are avoided, the following condition (as recommended in the geotechnical report) would be added to construction specifications for the proposed project:

- **Project Condition GEO-1: Methods to Increase Soil Density.** Ground improvement shall include methods such as soil cement mix columns (dry or wet method) in order to increase the density of the potentially liquefiable layers by laterally displacing and/or densifying the in situ soils. Other methods, such as stone columns, deep dynamic compaction, etc., may be considered.

Based on the anticipated loading and soils encountered, total and differential static settlements of about 4.75 inches and 2.5 inches, respectively, in 40 feet were estimated in the geotechnical report (SEG 2018). To ensure adverse effects from tank settlement are avoided, the following condition (as recommended in the geotechnical report) would be added to construction specifications for the proposed project:

- **Project Condition GEO-2: Support Tank Pads.** The tank pads shall be supported on a uniform layer of engineered fill reinforced with geogrid reinforcement (Tensar Tx7 or equivalent). In the event that deep foundations or deep ground improvement occurs, engineered fill reinforced with geogrid would not be required.

Additional protection from seismic hazards would be provided through development and implementation of applicable hazard response plans. For the existing Port Road A facility, Contanda has developed a *Crisis Management Plan* which includes earthquake emergency procedures (Contanda 2017). This plan would be employed and modified as needed for operations under the proposed project. Emergency response plans have been developed for the area in consideration of potential natural disasters, which would address and minimize potential hazards during emergencies such as a large seismic event. Therefore, the proposed project would result in less-than-significant impacts related to seismic ground shaking.

Soils mapped as occurring at the project site are not notably susceptible to lateral spreading or expansion. All grading would be performed in accordance with the recommended grading specifications contained in the City Grading Regulations, and the proposed improvements would be constructed in adherence with applicable seismic design parameters. Therefore, the proposed project is not anticipated to result in impacts related to lateral spreading or expansion.

The project site does not contain any steep slopes or other features suggesting susceptibility to slope failure or landslides. The proposed project would not result in changes that would increase the potential for slope failure or landslides, and there would be no impact related to these hazards.

Impact Determination: The proposed project would construct improvements that would be subject to ground shaking, as is common for the region, as well as liquefaction and settlement. In consideration of design standards relating to seismic hazards, plans addressing earthquake hazards, and the proposed project's adherence to Project Conditions GEO-1 and GEO-2, potential impacts associated with ground shaking, liquefaction, and settlement would be less than significant. There would be no impact associated with rupture of a known earthquake fault or landslides, as the site does not exhibit susceptibility to these hazards.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.4.3.4.2 GEO-2: Would the project result in substantial soil erosion or the loss of topsoil?

Because the project site is generally flat and largely contains previously developed surfaces that appear to have been compacted or otherwise prepared for development, the potential for substantial soil erosion is considered minimal. Evidence of erosion was not observed within or surrounding the project site. BMPs for controlling erosion would be implemented to reduce erosion of soils during construction. Topsoil that would be removed during grading or other surface preparation does not serve agricultural purposes or other valuable functions.

Impact Determination: Based on the analysis presented above, the proposed project would result in no impact from soil erosion or loss of topsoil.

Mitigation Measures: None required.

Residual Impact: No impact.

3.4.3.4.3 GEO-3: Would the project be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

As addressed in GEO-1, the proposed project would be located in an area potentially susceptible to ground shaking, liquefaction, and settlement. In consideration of design standards relating to seismic hazards, plans addressing earthquake hazards, and the proposed project's adherence to Project Conditions GEO-1 and GEO-2, potential impacts associated with ground shaking, liquefaction, and

settlement would be reduced to a level of less than significant. There are no additional hazards pertaining to unstable geologic units or soil on- or off-site.

Impact Determination: Based on the analysis presented above, the proposed project would result in no impact related to geologic unit or soils instability.

Mitigation Measures: None required.

Residual Impact: No impact.

3.4.3.4.4 GEO-4: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Expansion index testing performed during the geotechnical investigation identified an expansion index of 29 for the near surface sample (SEG 2018), which represents low expansive susceptibility per the Uniform Building Code (International Conference of Building Officials 1994). As part of the proposed project, site grading and surface preparation would be completed as needed to eliminate the potential for expansion.

Impact Determination: Based on the analysis presented above, the proposed project would result in no impact related to siting on expansive soils.

Mitigation Measures: None required.

Residual Impact: No impact.

3.4.3.4.5 GEO-5: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

The proposed project would be served by the municipal sewage system and would not require the use of septic tanks or alternative wastewater disposal systems or affect any such systems.

Impact Determination: Based on the analysis presented above, the proposed project would result in no impact related to septic tanks or alternative wastewater disposal systems.

Mitigation Measures: None required.

Residual Impact: No impact.

3.4.3.4.6 GEO-6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

There are no known unique geological or paleontological resources in the project area. Ground disturbance would be minimal and would occur in already disturbed or previously developed areas. Due to its geomorphological history, the project area is not likely to contain any fossils other than invertebrate fossils that are in a re-deposited context (see Section 3.3 for more information).

Impact Determination: Based on the analysis presented above, the proposed project would result in no impact related to unique paleontological or geologic resources.

Mitigation Measures: None required.

Residual Impact: No impact.

3.5 Greenhouse Gas Emissions

This section describes the GHG impacts of the proposed project and analyzes how the proposed project may affect global climate change. It also describes applicable rules and regulations pertaining to GHG emissions.

3.5.1 Environmental Setting

Global climate change results from GHG emissions caused by several activities, including fossil fuel combustion, deforestation, and land use change. GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which otherwise escapes to space. The most prominent GHGs contributing to this process include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Certain refrigerants, including chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and hydrofluorocarbons (HFCs), also contribute to climate change. The greenhouse effect keeps the Earth's atmosphere near the surface warmer than it would be otherwise and allows for successful habitation by humans and other forms of life.

Global warming potential (GWP) is a measure of how much a given mass of GHG contributes to global warming. A relative scale is used to compare the gas in question to carbon dioxide (whose GWP is defined as 1). In this analysis, CH_4 is assumed to have a GWP of 21 and N_2O 310. Refrigerants have GWPs ranging from 76 to 12,240. Consequently, using each pollutant's GWP, emissions of CO_2, CH_4, N_2O, CFCs, HCFCs, and HFCs can be converted into CO_2 equivalence, also denoted as CO_2e.

Fossil fuel combustion removes carbon stored underground and releases it into the atmosphere. Emissions of GHGs are responsible for the enhancement of the greenhouse effect and contribute to what is termed "global warming," a trend of unnatural warming of the Earth's natural climate. Increased concentrations of GHGs in the earth's atmosphere increase the absorption of radiation and further warm the lower atmosphere. This process increases evaporation rates and temperatures near

the surface. Climate change is a global problem, and GHGs are global pollutants, unlike criteria pollutants (such as O_3, CO, and PM) and TACs, which are pollutants of regional and local concern.

Global warming is the increase in average global temperatures of the earth's surface and atmosphere. The natural balance of GHGs in the atmosphere regulates the earth's temperature; without this natural greenhouse effect, the earth's surface would be approximately 60°F cooler (USGCRP 2014).

Recent environmental changes linked to global warming include rising temperatures, shrinking glaciers, thawing permafrost, a lengthened growing season, and shifts in plant and animal ranges (IPCC 1995; USGCRP 2014; CCCC 2012). In California, an assessment of climate change impacts predicts that temperatures will increase between 4.1°F to 8.6°F by 2100, based on low and high global GHG emission scenarios (CCCC 2012). Predictions of long-term negative environmental impacts in California include worsening of air quality problems; a reduction in municipal water supply from the Sierra snowpack; sea level rise; an increase in wildfires; damage to marine and terrestrial ecosystems; and an increase in the incidence of infectious diseases, asthma, and other human health problems (CCCC 2012).

3.5.2 Applicable Regulations

3.5.2.1 Federal

3.5.2.1.1 Greenhouse Gas Endangerment Finding (December 7, 2009)

In the 2007 *Massachusetts v. Environmental Protection Agency* case, the U.S. Supreme Court gave USEPA the authority to regulate GHGs as air pollutants under the CAA.

3.5.2.1.2 Mobile Sources

3.5.2.1.2.1 Heavy-Duty Vehicle National Program

In September 2011, USEPA and the National Highway Traffic Safety Administration (NHTSA) developed a program designed to reduce fuel consumption (and GHG emissions by association) from medium- and heavy-duty vehicles. The program was directed at model year 2014 to 2018 vehicles and is projected to reduce GHG emissions by approximately 270 million metric tons.

3.5.2.1.2.2 Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards

In May 2010, USEPA and NHTSA developed a program designed to reduce fuel consumption (and GHG emissions by association) from light-duty vehicles. The program was directed at model year 2012 to 2016 vehicles and is projected to reduce GHG emissions by approximately 960 million metric tons. In October 2012, USEPA and NHTSA expanded the program to vehicle model years 2017

through 2025. Requirements of this program apply to light-duty vehicles, such as worker vehicles, used during proposed closure activities.

3.5.2.1.2.3 Renewable Fuel Standard

In 2005, USEPA's Renewable Fuel Standard established the first renewable fuel volume mandate in the United States. The original Renewable Fuel Standard program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. The program was expanded in 2007 and currently requires that 36 billion gallons of renewable fuel be blended into gasoline by 2022. This program, although not directly relevant to proposed project activities, serves to highlight the developing GHG regulatory framework.

3.5.2.2 State

3.5.2.2.1 Executive Order S-3-05

Executive Order (EO) S-3-05, signed by then-Governor Schwarzenegger on June 1, 2005, established the following GHG reduction targets for California: 1) by 2010, reduce GHG emissions to 2000 levels; 2) by 2020, reduce GHG emissions to 1990 levels; and 3) by 2050, reduce GHG emissions to 80% below 1990 levels. EO S-3-05 also called for the California Environmental Protection Agency to prepare biennial reports on: 1) progress made towards achieving these goals; 2) impacts to California from global warming; and 3) mitigation and adaptation plans to combat these impacts. The most recent of these Climate Action Team reports was completed in December 2010 (CAT 2010).

3.5.2.2.2 Assembly Bill 32: California Global Warming Solutions Act of 2006, Scoping Plan (2008), Scoping Plan Update (2014), and Scoping Plan 2030 (2017)

The California Global Warming Solutions Act of 2006, widely known as AB 32, required CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB was directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner. AB 32 also required CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

On December 11, 2008, CARB adopted the AB 32 Scoping Plan, which set forth the framework for meeting the state's GHG reduction goal set by EO S-3-05. On October 20, 2011, CARB adopted the final cap-and-trade regulation. CARB also approved an adaptive management plan that monitors the progress of reductions and recommends corrective actions if progress is not as planned or there are unintended consequences in other environmental areas (e.g., concentration of local criteria pollutants).

In 2014, CARB adopted an update to the 2008 Scoping Plan, which builds upon the initial Scoping Plan with new strategies and recommendations. The 2008 Scoping Plan and 2014 Scoping Plan

Update require that reductions in GHG emissions come from virtually all sectors of the economy and be accomplished from a combination of policies, regulations, market approaches, incentives, and voluntary efforts. These efforts target GHG emission reductions from cars and trucks, electricity production, fuels, and other sources.

CARB prepared an update to the Scoping Plan designed to reduce GHG emissions 40% below 1990 inventory levels by 2030 (CARB 2017b).

3.5.2.2.3 California Senate Bill 97 and Amendments

Senate Bill (SB) 97, enacted in 2007, directed the State Office of Planning and Research to develop CEQA Guidelines "for the mitigation of GHG emissions or the effects of GHG emissions." In December 2009, the Office of Planning and Research adopted amendments to Appendix G of the CEQA Guidelines (Environmental Checklist), which created a new resource section for GHG emissions and indicated criteria that may be used to establish the significance of GHG emissions.

3.5.2.2.4 California's Renewables Portfolio Standard

Established in 2002 under SB 1078, accelerated in 2006 under SB 107, and expanded in 2011 under SB 2, California's Renewables Portfolio Standard is an ambitious renewable energy standard. The Renewables Portfolio Standard requires that 33% of total retail sales of electricity be procured from eligible renewable sources by the end of 2020. Renewables Portfolio Standard requirements were conservatively excluded from emission calculations associated with electricity use.

3.5.2.2.5 Senate Bill 1368 (GHG Emissions Standard for Baseload Generation)

SB 1368 was signed into law in September 2006. The law prohibits retail sellers of electricity in California from entering into a long-term financial commitment for baseload generation if the GHG emissions are higher than those from a combined-cycle natural gas power plant.

3.5.2.2.6 Senate Bill 375

The law requires metropolitan planning organizations to incorporate a "sustainable communities strategy" in their regional transportation plans that will achieve GHG emission reduction targets set by CARB. The San Joaquin Valley Council of Governments (SJCOG) has adopted a Sustainable Communities Strategy that would reduce on-road GHG emissions by 24.4% by 2020 (compared to the 2005 baseline) and by 23.7% by 2035 (compared to the 2005 baseline; SJCOG 2014).

3.5.2.2.7 State Standards Addressing Vehicle Emissions

AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. CARB estimated that the regulation will reduce climate change emissions from light-duty passenger vehicle fleet by an estimated 18% in 2020 and by 27% in 2030.

3.5.2.2.8 Governor's Executive Order S-01-07 (January 2007) and Low Carbon Fuel Standards (LCFS) (approved April 2009, effective April 2010)

EO S-01-07 was enacted by then-Governor Schwarzenegger on January 18, 2007. The executive order mandated that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020, and that a Low Carbon Fuel Standard for transportation fuels be established for California.

3.5.2.2.9 Senate Bill 350

This law established clean energy, clean air, and GHG reduction goals. The bill increases California's renewable electricity procurement goal from 33% by 2020 to 50% by 2030. In addition, SB 350 requires California to double statewide energy efficiency savings in electricity and natural gas end use by 2030.

3.5.2.3 Regional

3.5.2.3.1 San Joaquin Valley Air Pollution Control District

SJVAPCD adopted the Climate Change Action Plan (CCAP) in August 2008 to assist lead agencies in assessing and reducing the impacts of project-specific GHG emissions on global climate change. The CCAP relies on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), to assess the significance of project-specific GHG emissions on global climate change. Projects implementing BPS are determined to have a less-than-significant impact. Otherwise, demonstration of a 29% reduction in GHG emissions from business-as-usual (BAU) is required to classify a project's impact as less than significant. In 2009, the SJVAPCD adopted its Final Staff Report, *Climate Change Action Plan: Addressing GHG Emissions Impacts under CEQA*. SJVAPCD was not able to determine a specific quantitative level of GHG emissions increase above which a project would have a significant impact on the environment, and below which it would have an insignificant impact. SJVAPCD staff concluded that impacts of project-specific emissions on global climatic change are cumulative in nature, and the significance thereof should be examined in that context. SJVAPCD requires all projects to reduce their GHG emissions, whether through project design elements or mitigation. Projects achieving performance-based standards that have been demonstrated to be BPS would be considered to have a less-than-significant cumulative impact on global climate change (SJVAPCD 2009).

3.5.2.4 Local

3.5.2.4.1 San Joaquin County General Plan

San Joaquin County released its Draft 2035 General Plan for San Joaquin County in 2014, which included climate planning and promoting sustainable development patterns (San Joaquin County 2015).

3.5.2.4.2 City of Stockton General Plan

The City adopted Policy HS-4.20 in its 2035 General Plan to reduce GHG emissions by adopting new policies, in the form of a new ordinance, resolution, or other type of policy document, that will require new development to reduce its GHG emissions to the extent feasible in a manner consistent with state legislative policy as set forth in AB 32 (Health & Safety Code, 38500 et seq.).

3.5.2.4.3 City of Stockton Climate Action Plan

In 2014, the City approved the *City of Stockton Climate Action Plan* (CAP), which outlines a program to reduce GHG emissions from both existing and new development within the financial limitations of both the City government and the Stockton community. As described in the CAP, the City will revisit this plan in the future to examine whether there exist additional options to further reduce GHG emissions, and whether such options might be feasible in improved economic conditions. The CAP relies on numerous voluntary measures for both existing and new development, but also includes several mandatory measures where required by other state or local existing mandates and other City initiatives (City 2014).

3.5.3 Environmental Impacts and Mitigation Measures

3.5.3.1 Baseline

At the time of publication of the NOP for the proposed project, the project site was vacant, and the adjacent existing Contanda Port Road A facility received bulk liquid shipments via manifest rail, as detailed in Section 2.2.2.

3.5.3.2 Thresholds

For purposes of this DEIR, the following thresholds, which are based on Appendix G of the CEQA Guidelines (Environmental Checklist) and SJVAPCD guidance, were used to determine if the proposed project would result in GHG impacts. The proposed project would have a GHG impact if:

- **GHG-1**: The proposed project's GHG emissions, either directly or indirectly, would have a significant impact on the environment.
- **GHG-2**: The proposed project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

3.5.3.3 Methodology for Determining Impacts

GHG emissions during construction would come from the construction equipment, worker vehicle trips, and energy used on site. As described in Section 2.2.3, construction is expected to take 12 to 13 months. Table 3 provides a summary of the construction schedule. A full description of emission sources, including equipment horsepower ratings, can be found in Appendix E.

GHG emissions during proposed project operations would originate from vessel maneuvering and at-berth emissions, truck and rail engines, employee vehicle trips, and electricity use on site. During operation, the facility would receive shipments via vessels and inbound trains from UP and BNSF. Product would be offloaded at the berth (vessels) and at the Contanda Port Road A facility (rail) and transferred to the proposed project terminal. Trucks would transfer the product from the terminal to the local Northern California market. The operational mode split is summarized in Table 11.

3.5.3.4 Impact Analysis

3.5.3.4.1 GHG-1: Would the proposed project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

SJVAPCD has established GHG thresholds for projects subject to CEQA. For projects implementing SJVAPCD's BPS, quantification of project-specific GHGs is not required (SJVAPCD 2009). SJVAPCD's BPS generally apply to projects with stationary industrial emission sources. Most the proposed project's emissions are from industrial sources; therefore, SJVAPCD's BPS do not apply.

SJVAPCD has not established BPS for the wide variety of land use sources that can occur within the San Joaquin Valley. Instead, SJVAPCD recommends determining whether the GHG emissions applied to a project would result in a 29% reduction compared to BAU. However, the BAU approach has been invalidated in the 2015 *Center for Biological Diversity v. California Department of Fish and Wildlife* California Supreme Court decision. Several California Air Districts, including the Bay Area Air Quality Management District, have established a GHG threshold of 1,100 metric tons of CO_2e per year for land use plans and 10,000 metric tons per year for stationary sources. However, the proposed project is neither a land use plan nor considered to be a stationary source. The South Coast Air Quality Management District (SCAQMD) has established a threshold of 10,000 metric tons per year of CO_2e emissions per year for industrial projects, including port projects which include a number of industrial emission sources. Construction GHG emissions, amortized over the life of a project, are required to be included in a project's annual GHG emissions totals (SCAQMD 2010). For purposes of this analysis, SCAQMD's industrial project threshold is used to evaluate the significance of the proposed project's GHG emissions.

Table 16 shows the total proposed project GHG emissions, as estimated using CalEEMod. Construction emissions would occur in 2019. Operational emissions include line-haul locomotives, switching locomotives, and on-road vehicles. The total emissions include the annual operational emissions plus the amortized construction emissions. Detailed emission estimates are summarized in Appendix E.

Table 16
Proposed Project Construction and Operational GHG Emissions

Source Category	CO_2	CH_4	N_2O	CO_2e
	Metric tons of CO_2e per year			
Construction				
2019 Construction	368	0	0	370
2020 Construction	144	0	0	145
Amortized Annual Construction	17	0	0	17
2020 Project Operations				
Trucks	5,814	0	1	6,097
Rail	1,763	0	0	1,763
Ships at Berth	513	0	0	522
Ships Transit	2,359	0	0	2,396
Tugboats	58	0	0	59
Employee Vehicles	69	0	0	70
Emergency Generator	1	0	0	1
Operational Total	**10,577**	**0**	**1**	**10,906**

Notes:
Emissions may not add precisely due to rounding.
Construction emissions were amortized over 30 years.
Total annual GHG emissions are the sum of amortized construction and annual operational emissions.

Impact Determination: As shown in Table 16, the proposed project would result in a net increase in GHG emissions. The bulk of the proposed project's GHG emissions are from vessels, trucks, and locomotives traveling within the SJVAPCD. Emissions would exceed the 10,000 metric tons per year threshold and are therefore considered to result in a significant impact.

Mitigation Measures: The following mitigation measures would be implemented to reduce GHG emissions:

- **MM-AQ-1: Truck Idling Reductions** (see Section 3.1.3.4.2 [AQ-2] for more information)
- **MM-AQ-2: Use of Clean Trucks** (see Section 3.1.3.4.2 [AQ-2] for more information)

Residual Impact: As discussed in Section 3.1.3.4.2, there are no additional mitigation measures available to reduce emissions from vessels, locomotive, or truck engines. Therefore, proposed project emissions are considered to be a significant and unavoidable impact.

3.5.3.4.2 GHG-2: Would the proposed project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As described under GHG-1, the proposed project would exceed the 10,000 metric tons per year of CO_2e threshold used to determine GHG impact significance and therefore would not reduce GHG emissions consistent with applicable state policies. However, the proposed project would likely reduce regionwide emissions by increasing the renewable diesel supply within California to meet carbon intensity goals for transportation fuels, which is consistent with state policies. As discussed in Section 1.2, renewable diesel is a component of California's LCFS (RFA 2016). It is assumed the project-specific GHG increases would be offset by the larger goals as the transportation network would become cleaner through the use of cleaner fuels, eventually spilling over to trucks and rail.

Impact Determination: Project emissions are above the applicable threshold. However, because the proposed project helps accomplish California's LCFS, impacts would be less than significant.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.6 Hazards and Hazardous Materials

This section describes the known hazards and hazardous material conditions in the project area. The analysis in this section is based in part on information and data presented in the Phase I Environmental Site Assessment completed for the project (GHD 2018); site-specific and regional emergency response plans; BNSF and UP hazardous material procedures; federal, state, and local regulations; fire hazard maps; public records for school and airfields; and established operational procedures for Contanda facilities.

3.6.1 Environmental Setting

3.6.1.1 Site Setting

Under existing and recent conditions, the project site is undeveloped and has been used for parking and storage of various vessels and vehicles. However, based on review of historical documents, the site was part of the U.S. Government Reservation sometime between 1940 and 1957 when several buildings were located on the eastern portion of the site and one building was located in the southwestern corner of the site. Specific site use during this period is not publicly available; no information was available regarding demolition of the structures, potential underground storage tanks (USTs) or ASTs, water supply, chemical use or storage, solid waste generation, or potential hazardous waste generation. Prior to its developed status from approximately 1940 and 1957, the site was undeveloped from at least 1937 (GHD 2018).

The project site is surrounded on all sides by road and railways and industrial or commercial parcels. This includes Port Road H, the Carry Transit terminal, and railroads to the north; Port Road 11, Westway Feed Products terminal, and railroads to the east; the Port Annex and Police Department buildings, Port Road G, Port Administrative buildings, and an above ground storage tank to the south; and Port Road 13 and two Crowne Cold Storage domes to the west.

The existing Contanda Port Road A facility currently receives, stores, and distributes biodiesel and DEF for its customers. Contanda also dilutes concentrated DEF with water for one of its customers.

3.6.1.2 Listed Hazardous Material Sites

The Environmental Site Assessment completed for the proposed project included an environmental database search, historical records review, site reconnaissance of accessible areas, review of relevant site records, and interviews with individuals associated with the site. The project site (including proposed terminal and pipeline alignments) was not listed on any of the reviewed databases, and no recognized environmental conditions were identified at the site (as defined in ASTM International Standard E1527-13). Two hazardous materials database-listed properties were identified adjacent to the project site, and another property occurs west of the proposed pipeline alignment.

Pacific Molasses Company. Pacific Molasses Company, addressed at 2115 West Washington Street, was listed in the Hazardous Substance Storage Container Database for historically having a 10,000-gallon diesel fuel UST installed in 1972; the Emission Inventory Data database for having a permit with SJVAPCD from 2009 through 2015; and the UST database for an inactive 10,000-gallon gasoline UST. No other pertinent information was provided in the database listings. This property is located east and southeast of the project site. Based on available information, adverse impact to the project site from this adjoining property is not expected.

Westway Feed Products, Inc. Westway Feed Products, Inc, addressed at 2115 West Washington Street, was listed in the Resource Conservation and Recovery Act Information Small Quantity Generator; Cleanup Program Sites Spills, Leaks, Investigations, and Cleanups; Statewide Environmental Evaluation and Planning System UST; Hazardous Substance Storage Container Database UST; California Facility Inventory Database UST; Waste Discharge Systems; California Integrated Water Quality System; and California Environmental Reporting System databases. According to the Geotracker website, in 1988, between 500 and 1,000 gallons of urea ammonium nitrate spilled and pooled at the south end of this property. In 1990, 2,500 cubic yards of soil was excavated. Groundwater at 21 feet initially contained 40 milligrams per liter of urea ammonium nitrate but declined to below 10 milligrams per liter in the following four quarters. The case was closed April 15, 2015. No other pertinent information was provided in the database listings. This property is located east and southeast of the project site. Based on available information, and the

location of the spill downgradient, adverse impact to the project site from this adjoining property is not expected.

Namolco, Inc., Namolco, Inc., located 675 feet north-northwest of the project site, was listed in the Historical Cal Sites, Response, and EnviroStor databases. According to EnviroStor, the Namolco facility is a molasses/cattle liquid feed distribution and storage terminal. In April 1983, a phosphoric acid transfer pump was found to be leaking at the site. The pump was repaired, and contaminated soil was removed and transported to a Class I site by a hazardous waste hauler. The contaminated material was replaced by a concrete slab. In a follow-up field investigation in December 1983, it was noted that a siphon system to pump any acid back into the phosphoric mixing tank for recycling had been installed. Inspection of the grounds revealed all spillages of acid had been cleaned. No further action was deemed necessary (Conestoga-Rovers & Associates 2013).

The Environmental Site Assessment identified an additional 21 listed properties within the ASTM Standard E1527-05 search radius (within a one-eighth-mile to 1-mile radius of the project site). Per the Environmental Site Assessment, no evidence of the likelihood for a hazardous substance or petroleum product release impacting the site through migration from these listed properties was identified (GHD 2018).

3.6.1.3 On-site Hazardous Materials

The project site does not appear to contain any on-site hazardous or potentially hazardous materials. As noted, the site is currently undeveloped and is not listed in any hazardous material databases. Nonetheless, potential presence of on-site hazardous materials was analyzed during the Environmental Site Assessment, which included a reconnaissance of the site, review of relevant records, visual observations of adjoining properties as viewed from the site and surrounding roadways, and interviews with individuals associated with the site. Based on these sources, the Environmental Site Assessment did not identify evidence of any USTs, ASTs, hazardous waste, raw material and chemical use and storage, wastewater- or sewer-generating items, air emissions infrastructure, on-site transformers, or other potential polychlorinated-biphenyl-containing materials.

The Environmental Site Assessment did note on-site presence of debris, including a small (approximately 10 cubic yards) pile of imported grey soil material in the western portion of the project site; a soil pile, wood pile, and concrete debris at the tree line in the middle of the project site; a degraded horizontal telephone pole, concrete debris, and a vertical rusting metal pole along the western project site boundary; and two semi-trailers and tires in the southwestern portion of the project site. The Environmental Site Assessment did not conclude that these materials were hazardous. However, based on the unknown composition of the imported grey soil material, the Environmental Site Assessment did identify the potential for hazardous substances or petroleum products within this debris.

The Environmental Site Assessment additionally notes that insufficient information exists to evaluate potential adverse impact to soil and groundwater at the site from prior uses of the project site. Although no evidence was found to suggest a release of hazardous substances or petroleum products has occurred, historical site use as a former U.S. Government Reservation may affect the environmental risk from future land use at the site.

3.6.1.4 Emergency Plans

3.6.1.4.1 Regional Municipal Plans

Regional emergency response plans are detailed in the 2008 *San Joaquin County Office of Emergency Services Hazardous Materials Area Plan* (SJCOES 2008). The plan discusses topics such as natural hazards, emergency management, mitigation programs, emergency preparedness, and state roles and responsibilities. Under the plan, considerations have been made for the area, including for hazardous materials. Additionally, Appendix 5 of the plan addresses non-routine emergency responses, including responses to industrial chemical hazards and terrorist chemical release (SJCOES 2009). Other hazard plans for the region and throughout California would be applicable to the proposed project.

3.6.1.4.2 Contanda Facility Plans

For its existing Port Road A facility, Contanda maintains a *Crisis Management Plan* detailing plans and actions for a variety of potential emergencies, including but not limited to natural disaster; technological crisis; confrontation; terrorist acts; workplace violence; and social unrest or riots. The plan communicates policies and procedures to follow in an emergency. These procedures apply to all employees involved with crisis management planning, crisis plan implementation, communications, and actions, and post crisis analysis and actions (Contanda 2017). In addition, Contanda maintains Spill Prevention Control and Countermeasure (SPCC) plans for the Port Road A facility; these would also be required for the proposed project.

3.6.1.4.3 Rail Emergency Plans

3.6.1.4.3.1 BNSF Hazardous Material Plans

BNSF is a partner member of the Responsible Care® program, a voluntary chemical safety and handling management system under the auspices of the American Chemistry Council. In addition, BNSF has several internal programs, discussed as follows, to address personnel safety and reduce releases of hazardous materials due to accidents (also called accident releases). BNSF works with customers to reduce non-accident releases by improving packaging and containment. In the event that a problem does occur, BNSF's spill response program, discussed as follows, is designed to minimize impact to the environment, the community, and BNSF operations.

A Hazardous Materials Emergency Response Plan is developed for every BNSF facility in the United States. For BNSF facilities located in California, the Hazardous Materials Emergency Response Plans and California Business Plans consist of the following components:

- A list of emergency contact numbers for the following parties: the Emergency Coordinator at the BNSF facility; the local fire and police departments; the County Environmental Health Department; the State Office of Emergency Services; the National Spill Response Center; the USEPA Emergency Reporting Number; the State Water Resources Control Board; the Regional Water Quality Control Board; the California Occupational Safety and Health Department; and spill response contractors
- A list of the types and locations of emergency equipment at the BNSF facility
- A County Health Department Business Activities Form that identifies the sizes of storage containers for hazardous materials, including USTs and ASTs, hazardous wastes, and other regulated substances present at the facility, as well as total volume of materials being stored at the facility
- A facility contingency plan that summarizes emergency response procedures for the proposed project in the event of fire, explosion, or other unauthorized release of hazardous substances. The plan also includes the following:
  - Emergency evacuation plan
  - Employee hazardous materials training program
  - Contracts that are prepared and signed by designated qualified emergency response contractors that identify the scope of services, the types of materials to be handled, and the term of the contract.

BNSF additionally participates in the Transportation Community Awareness and Emergency Response outreach program. BNSF provides hazardous materials awareness training to the communities in which BNSF facilities are located. These programs, which include both classroom and hands-on sessions, are designed to promote an understanding of safe transportation of hazardous materials by rail.

BNSF's spill response program delivers resources to the area of the spill in the shortest time possible. The program includes 200 emergency response personnel who are located throughout the BNSF system. All response personnel are required to complete annual responder training. This support team has responsibility for monitoring all emergency responses, mobilizing response and remediation contractors, and lending technical support when necessary. BNSF has also posted a toll-free emergency telephone number at highway/rail crossings to provide the public with a way to contact BNSF immediately in an emergency.

When responding to a spill, information about the spill area and type of material involved is critical. BNSF uses a geographical information system (GIS) to provide "point-and-click" information about

specific track locations, surrounding communities, emergency responders, healthcare facilities, schools, nursing homes, pipelines, and detailed response procedures. The GIS includes a model for simulating chemical concentrations and "footprints" if a release were to occur. Output from the model includes consideration for complex topography, such as mountains and river valleys.

3.6.1.4.3.2 Union Pacific Hazardous Materials Management Group

The UP Hazardous Materials Management Group (HMM) consists of hazardous material experts focused on the following four areas of hazardous material management:

1. **Prevention.** UP's HMM team members regularly inspect tank cars moving on the UP network. HMM is responsible for training employees about hazardous materials safety. U.S. Department of Transportation (DOT)-defined "hazmat employees" are required to be trained in the safe handling of hazardous materials. Train crews are required to carry a copy of *Instructions for Handling Hazardous Materials*, provided by HMM, while operating a train carrying hazardous materials.
2. **Preparedness.** HMM develops the UP *Hazardous Materials Emergency Response Plan*, a performance-based plan which provides guidance about reporting a release as well as a list of training requirements for those responding to an incident. HMM team members reach out to fire departments on an annual basis to offer training or information to assist fire departments in their preparation for a potential incident.
3. **Response.** The response process used by HMM is designed to be incorporated into public response incident command structure. UP's Response Management Communication Center (RMCC) is an around-the-clock security response center where critical call dispatchers manage calls from the public, law enforcement, and others who are reporting emergencies and other incidents on UP's 32,000-mile network. RMCC follows all regulations regarding notification of local, state, and federal agencies in the event of an accident and works closely with first responders throughout an incident. In addition, UP has approximately 30 highly trained hazardous materials responders. HMM response equipment includes firefighting trailers, foam caches, air monitoring equipment, and specialty tools.
4. **Recovery.** In the event of a hazardous material incident, UP is equipped to transfer any liquid or compressed gas from damaged tanks and clean and purge any damaged cars. The UP Site Remediation Group is responsible for remediation and closure with regulatory agencies.

3.6.1.5 Sensitive Receptors

There are no schools, airstrips, airports, or other sites potentially sensitive to hazards or hazardous materials within the proposed project vicinity. The nearest school is Washington Elementary School, located approximately 0.6 mile to the southeast. The closest airport is the Stockton Municipal Airport, located approximately 5.5 miles to the southeast.

3.6.1.6 Wildfire Hazards

The project site is not within any fire hazard severity zones (Cal Fire 2007). There are no wildlands within the project area, and wildland fires do not pose a risk to the project site.

3.6.2 Applicable Regulations

3.6.2.1 Federal

3.6.2.1.1 Hazardous Materials Transportation Uniform Safety Act of 1990

In 1990, Congress enacted the Hazardous Materials Transportation Uniform Safety Act (HMTUSA) to clarify the maze of conflicting state, local, and federal regulations. Like the Hazardous Materials Transportation Act (HMTA), the HMTUSA requires the Secretary of Transportation to promulgate regulations for the safe transport of hazardous material in intrastate, interstate, and foreign commerce. The Secretary of Transportation also retains authority to designate materials as hazardous when they pose unreasonable risks to health, safety, or property.

The statute includes provisions to encourage uniformity among different state and local highway routing regulations, to develop criteria for the issuance of federal permits to motor carriers of hazardous materials, and to regulate the transport of radioactive materials. The HMTA requires that carriers report accidental releases of hazardous materials (e.g., spills) to DOT at the earliest practical moment.

3.6.2.1.2 U.S. Department of Transportation Hazardous Materials Regulations (49 CFR 100–185)

The DOT Hazardous Materials Regulations cover all aspects of hazardous materials packaging, handling, and transportation. Under DOT regulations, a hazardous material is "a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under section 5103 of Federal hazardous materials transportation law" (49 CFR 171.8). Parts 172 ("Emergency Response"), 173 ("Packaging Requirements"), 174 ("Rail Transportation"), 177 ("Highway Transportation"), 178 ("Packaging Specifications"), 180 ("Packaging Maintenance"), and 397 ("Driving and Parking Rules") would apply to the proposed project activities. Additional potentially applicable parts include Part 171 ("General Information, Regulations and Definitions") and Part 172 ("Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Requirements, and Security Plans").

3.6.2.1.3 Emergency Planning and Community Right-to-Know Act (EPCRA; 42 USC. 11001 et seq.)

Also known as Title III of the Superfund Amendments and Reauthorization Act, EPCRA was enacted by Congress as the national legislation on community safety. This law was designated to help local communities protect public health, safety, and the environment from chemical hazards. To implement EPCRA, Congress required each state to appoint a State Emergency Response Commission (SERC). These commissions were required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee for each district. EPCRA provides requirements for emergency release notification, chemical inventory reporting, and toxic release inventories for facilities that handle chemicals.

3.6.2.2 State

3.6.2.2.1 Hazardous Material Release Response Plans and Inventory Law (California Health and Safety Code, Division 20, Chapter 6.95)

This state right-to-know law requires businesses to develop a Hazardous Material Management Plan (HMMP) or a business plan for hazardous materials emergencies if they handle more than 500 pounds, 55 gallons, or 200 cubic feet of hazardous materials. In addition, the business plan must include an inventory of all hazardous materials stored or handled at the facility above these thresholds. This law is designed to reduce the occurrence and severity of hazardous materials releases. The HMMP or business plan must be submitted to the Certified Unified Program Agency (CUPA), in this case, the San Joaquin County Public Health Services, Environmental Health Division (SJCEHD). The state has integrated the federal EPCRA reporting requirements into this law, and once a facility is in compliance with the local administering agency requirements, submittals to other agencies are not required.

3.6.2.2.2 California Health and Safety Code Chapter 13 (Standards Applicable to Transporters of Hazardous Waste) (22 CCR 66263.10–66263.50)

These regulations establish standards that apply to persons transporting hazardous waste within, into, out of, or through the state if the transportation requires a manifest under the California Health and Safety Code (CHSC), Section 25160. "Transporter" means a person engaged in the off-site transportation (or movement) of hazardous waste by air, rail, highway, or water. This hazardous waste regulation applies to carriers transporting hazardous waste when that waste is subject to the manifesting requirements of Chapter 12. In general, transporters of hazardous waste must comply with these requirements and statutory requirements in CHSC, Division 20, Chapter 6.5, Articles 6 and 6.5, as well as the specific DOT requirements referenced throughout the transporter regulations.

3.6.2.2.3 29 Code of Federal Regulations

The California Division of Occupational Safety and Health (Cal/OSHA) and the Federal Occupational Safety and Health Administration (OSHA) are the agencies responsible for assuring worker safety in the handling and use of chemicals in the workplace. Pursuant to the Occupational Safety and Health Act of 1970, OSHA has adopted numerous regulations pertaining to worker safety, contained in 29 CFR. These regulations set standards for safe workplaces and work practices, including standards relating to hazardous material handling. Cal/OSHA assumes primary responsibility for developing and enforcing state workplace safety regulations. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in 29 CFR. Cal/OSHA standards are generally more stringent than federal regulations.

Cal/OSHA regulations concerning the use of hazardous materials in the workplace, as detailed in 8 CCR, include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous waste sites. The hazard communication program requires that Material Safety Data Sheets be available to employees and that employee information and training programs be documented.

3.6.2.3 Local

3.6.2.3.1 Unified Hazardous Waste and Hazardous Management Regulatory Program (SB 1082, 1993) and San Joaquin County Public Health Services

The Unified Hazardous Waste and Hazardous Management Regulatory Program (SB 1082, 1993) is a state and local effort to consolidate, coordinate, and make consistent existing programs regulating hazardous waste and hazardous materials management. CalEPA adopted implementing regulations for the Unified Program (27 CCR, Division 1, Subdivision 4, Chapter 1) in January 1996. The Unified Program is implemented at the local level by CUPAs.

SJCEHD is the CUPA for all cities and unincorporated areas within San Joaquin County. The concept of a CUPA was created by the California legislature to minimize the number of inspections and different fees for businesses. SJCEHD provides the management and record keeping of hazardous materials and UST sites for San Joaquin County, including the City. Through the Hazardous Materials Program, SJCEHD inspects businesses for compliance with the Hazardous Waste Control Act. Hazardous waste is subject to storage time limits, disposal requirements, and container labeling requirements. SJCEHD also issues permits to businesses that handle quantities of hazardous materials or wastes greater than or equal to 55 gallons, 500 pounds, or 200 cubic feet of a

compressed gas at any time. Businesses who handle those quantities of hazardous materials or wastes are required to submit an HMMP to SJCEHD. The HMMP must include an inventory of hazardous materials and hazardous wastes, as well as an emergency response plan to incidents involving those hazardous materials and wastes.

3.6.2.3.2 California Health and Safety Code Section 25500 and San Joaquin County Office of Emergency Services

The responsibilities of the San Joaquin County Office of Emergency Services (SJCOES) include effective planning for emergencies, including those related to hazardous material incidents. SJCOES coordinates planning, response to emergencies, improves procedures for incident notification, and provides training and equipment to safety personnel. SJCOES is required by CHSC Section 25500 to: 1) prepare an inventory and information system for the storage and location of hazardous materials in San Joaquin County; 2) oversee the preparation and collection of plans for those businesses that use hazardous substances; 3) prepare area response plans that will incorporate inventory data, training for emergency responses, and evacuation plans; and 4) present an inspection plan and data management plan to the state for approval.

3.6.2.3.3 Senate Bill 1889 and San Joaquin County Risk Management Plans

SB 1889 requires businesses that handle threshold quantities of regulated substances included in the federal Accidental Release Prevention Program to submit risk management plans (RMPs). SB 1889 also requires businesses that handle more than a threshold quantity of state-regulated substances that are not also over the federal threshold to implement the Accidental Release Prevention Program upon a request from the local government implementing agency. Where a CUPA has been established (SJCEHD for San Joaquin County), they will be the first contact for a business. The SJCOES Hazardous Materials Division administers the RMP program, which requires businesses that use specific extremely hazardous substances to prepare a comprehensive plan to reduce the risk of an accident.

An RMP includes safety information, hazard review, operating procedures, training, maintenance, compliance audits, and incident investigation. The RMP must consider the proximity to sensitive populations located in schools, residential areas, general acute care hospitals, long-term health care facilities, and child day care facilities. The RMP must also consider external events such as seismic activity. There are three program levels depending on the type of business, potential impact, accident history, and other factors.

3.6.2.3.4 City of Stockton Fire Department

The City Fire Department provides limited oversight of hazardous materials. The Fire Department is responsible for conducting inspections for code compliance and fire-safe practices, and for the investigation of fire and hazardous materials incidents. The Fire Department regulates explosive and

hazardous materials under the Uniform Fire Code, and permits the handling, storage, and use of any explosive or other hazardous material.

3.6.3 Environmental Impacts and Mitigation Measures

3.6.3.1 Baseline

At the time of publication of the NOP for the proposed project, the project site was vacant, and the adjacent existing Contanda Port Road A facility received bulk liquid shipments via manifest rail, as detailed in Section 2.2.2.

3.6.3.2 Thresholds

For purposes of this DEIR, the following thresholds, which are based on Appendix G of the CEQA Guidelines (Environmental Checklist), were used to determine if the proposed project would result in impacts related to hazards and hazardous materials. The proposed project would have an impact if:

- **HAZ-1:** The proposed project would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- **HAZ-2:** The proposed project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- **HAZ-3:** The proposed project would emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- **HAZ-4:** The proposed project would be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.
- **HAZ-5:** The proposed project would be located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area.
- **HAZ-6:** The proposed project would be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area.
- **HAZ-7:** The proposed project would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- **HAZ-8:** The proposed project would involve people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

3.6.3.3 Methodology for Determining Impacts

Analysis of impacts pertaining to hazards and hazardous materials was based on existing hazardous material conditions recorded on- and off-site; existing and planned emergency action plans; and siting relative to schools, residents, airports, or other sensitive receptors.

3.6.3.4 Impact Analysis

3.6.3.4.1 HAZ-1: Would the proposed project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Proposed project-related construction work would involve routine site preparation, grading, excavation, and infrastructure construction. Although contaminated soils or other hazardous materials are not known to occur on site, the Environmental Site Assessment concluded that insufficient information exists to evaluate potential adverse impacts to soil from prior uses. On-site debris has also not been investigated to conclusively determine if hazardous materials are present. Therefore, contaminated soils or debris not previously known and remediated could be encountered.

As these site conditions are commonly encountered during redevelopment of previously industrialized areas, construction contractors would be required to have ensured appropriate worker training, to have developed contingencies for responding to contaminated soil, and to comply with established measures to protect human health and the environment. Excavation and disposal activities would be carried out in accordance with federal, state, and local regulations regarding management of hazardous wastes, including but not limited to 29 CFR pertaining to worker safety in the handling and use of chemicals in the workplace as administered by Cal/OSHA. Potential or suspected contaminated substances in on-site debris and soil would be removed in accordance with federal, state, and local regulations prior to construction and with appropriate regulatory oversight, thereby minimizing the exposure of construction workers to contaminants and minimizing the potential for releases of such substances to the environment.

Construction activities would involve the use of equipment that contains oil, gas, or hydraulic fluids that could be spilled during normal usage or during refueling. The proposed project would be required to obtain NPDES Construction Stormwater General Permit coverage, which requires the development of a Storm Water Pollution Prevention Plan (SWPPP). Development and implementation of the SWPPP, along with other general construction BMPs, would ensure that that the proposed project does not result in significant adverse impacts related to use of potentially hazardous construction materials.

Site operation under the proposed project would entail the receipt, storage, and transfer of bulk liquids currently managed at the existing Contanda Port Road A facility. This includes biodiesel and DEF. These products are classified as nonhazardous to health or the environment.

The existing Contanda Port Road A facility operates according to the following plans:

- *Spill Prevention Control and Countermeasures.* Contanda has an SPCC plan certified by a California-licensed Professional Engineer.
- *United States Coast Guard Operations Manual*. Contanda has an Operations Manual, reviewed and approved by the U.S. Coast Guard. The terminal is subject to annual and unannounced inspections by the U.S. Coast Guard.
- *Crisis Management Plan*. Contanda maintains a Crisis Management Plan which incorporates its Emergency Action Plan (required by the Cal/OSHA regulations, Section 3220), spill/fire response plan, site-specific emergency contact information, site maps, and response resources.

The facility also operates in compliance with USEPA SPCC regulations requiring secondary containment for biodiesel (oil) ASTs.

The proposed project would also operate in adherence with the plans and regulations listed above, as applicable. The SPCC and *Crisis Management Plan* would be modified as needed to address operations at the new facility.

The proposed project would be designed and operated to avoid potential hazardous material accidents. All transfer piping would be located aboveground. Aboveground piping would be designed to ensure minimal hazards with vehicular traffic. All unloading connections would be securely capped or blank-flanged when not in service or when in standby service for any extended time. Piping, valves, fittings, hoses, and appurtenances would be regularly inspected for signs of leaks, corrosion, stress, or other indications of wear that could result in an accidental/uncontrolled discharge. Pipe and AST supports, alignments, and construction would allow for expansion and contraction and seismic restraint. As occurs at the existing Port Road A facility, Contanda would routinely inspect and maintains all major pieces of equipment (aboveground valves, pumps, piping, and flanges) at the proposed terminal. Inspections would be carried out monthly and documented on a monthly inspection checklist. If damage or corrosion is detected, Contanda's operators would investigate, isolate, or repair as required.

Impact Determination: Based on the analysis presented above, the proposed project would result in less-than-significant impacts to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.6.3.4.2 HAZ-2: Would the proposed project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

As described under HAZ-1, site operation pertaining to bulk liquid receiving, storage, and distribution would occur in compliance with all applicable regulations designed to minimize the potential for accidents. Contanda would maintain and implement as needed a *Crisis Management Plan* detailing plans and actions for a variety of potential emergencies. In addition, Contanda would develop an SPCC plan for the facility to be certified by a California-licensed Professional Engineer. The City Fire Department is equipped to provide response in the unlikely event of a site accident, and response plans have been developed for the region. Furthermore, safety and environmental control measures are integrated into the facility's design and operation.

Impact Determination: Based on the analysis presented above, the proposed project would result in less-than-significant impacts to the public or the environment through reasonably foreseeable upset and accident conditions.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.6.3.4.3 HAZ-3: Would the proposed project emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The nearest school to the project site is the Washington Elementary School, located approximately 0.6 mile to the southeast. Given the area's zoning (Port Area), it is unlikely that a school would be constructed within 0.25 mile of the project site. While proposed project construction and operation would not occur within 0.25 mile of a school, transportation of potentially hazardous materials may occur on railways in the vicinity of existing or proposed schools. However, BNSF and UP currently accommodate shipments of hazardous materials, and both railways maintain hazardous material programs or plans designed to address hazardous material handling including potential hazardous material emissions or accidents. In addition, trucks would travel on dedicated truck routes, and transport of hazardous materials would occur in compliance with Caltrans and DOT regulations. Containers used to store hazardous materials would be properly labeled and kept in good condition, and a qualified transporter would be selected to comply with DOT and Caltrans regulations. Under existing conditions, transport of hazardous materials from other industrial facilities in the region occurs via truck and railcar, which may also include shipping routes within the vicinity of schools.

Impact Determination: Based on the analysis presented above, the proposed project would result in no impacts related to hazardous material emissions or handling in the vicinity of a school.

Mitigation Measures: None required.

Residual Impact: No impact.

3.6.3.4.4 HAZ-4: Would the proposed project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

As determined in the Environmental Site Assessment for the proposed project, the facility is not included on any reviewed hazardous materials sites.

Impact Determination: Based on the analysis presented above, the proposed project would result in no impact related to siting on listed hazardous materials sites.

Mitigation Measures: None required.

Residual Impact: No impact.

3.6.3.4.5 HAZ-5: Would the proposed project be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?

The proposed project is not located within an airport land use plan area, and the nearest airport is located approximately 5.5 miles southeast of the project site. Although rail transport may occur in proximity to airports, BNSF and UP accommodate hazardous material shipments under existing conditions, and both railways are equipped to manage hazardous material transport.

Impact Determination: Based on the analyses presented above, the proposed project would result in no impacts related to aviation, airports, or public use of airports.

Mitigation Measures: None required.

Residual Impact: No impact.

3.6.3.4.6 HAZ-6: Would the proposed project be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?

The project site is not located within an airport land use plan area, and the nearest airport or airstrip is located approximately 5.5 miles to the southeast. Although rail or truck transport may occur in proximity to airports, road and railways accommodate hazardous material shipments under existing conditions, and both transportation methods would occur in adherence with applicable hazardous material regulations.

Impact Determination: Based on the analyses presented above, the proposed project would result in no impacts related to private airstrips.

Mitigation Measures: None required.

Residual Impact: No impact.

3.6.3.4.7 HAZ-7: Would the proposed project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Emergency response plans, including the *San Joaquin County Hazardous Materials Area Plan* and the City's *Multi-Hazard Functional Operations Plan*, were developed in consideration of activities occurring within industrial areas of the City. Both UP and BNSF have developed emergency response plans as part of their hazardous material management programs. Additionally, the City Fire Department is equipped to respond during an emergency.

Impact Determination: The proposed project would not interfere with implementation of any response or hazardous material plans. Construction would occur on an existing parcel and would not physically interfere with any emergency response or evacuation pathways. As discussed in Section 3.8.3.4, the proposed project would have less-than-significant traffic impacts, including effects on emergency response. Therefore, impacts are considered less than significant.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.6.3.4.8 HAZ-8: Would the proposed project involve people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The project site is not located within any designated fire hazard severity zones, and the site is not susceptible to wildland fire hazards. The facility is located within a heavily industrialized area of the City, and there is no surrounding vegetation that would be susceptible to wildland fires. Construction and operation of the proposed facility would not expose individuals or structures to any wildland fire risks.

Impact Determination: As the proposed project is not within any designated fire hazard severity zones and the site is not susceptible to wildland fire hazards, the proposed project would result in no impacts related to wildland fires.

Mitigation Measures: None required.

Residual Impact: No impact.

3.7 Noise

This section describes the existing noise and vibration environment of the proposed project and surrounding area and analyzes how the proposed project may affect these characteristics. This section also describes applicable rules and regulations pertaining to noise and vibration. For the purposes of the noise and vibration analysis, the study area is defined as the project site and the surrounding area extending approximately 1,200 feet from the facility to the nearest sensitive receptors (residential area at North Ventura Street and West Main Street). The project setting also includes the rail yard at the Contanda Port Road A facility, which is located more than 1,500 feet from the nearest sensitive receptor.

3.7.1 Environmental Setting

Existing noise in the project area can be attributed to various stationary and mobile sources, including ship traffic, tractor-trailer truck traffic, rail activity, and terminal equipment (Port 2004). Other sources that contribute to the existing noise environment in the general site vicinity include recreational boating along the San Joaquin River (reduced during fall and winter months), landscaping activities (e.g., leaf blowing and lawn mowing), and local and regional roadway traffic on nearby local roads and highways (i.e., Interstate 5 and State Routes 4 and 99). Noise monitoring previously conducted for the Rough and Ready Development Plan concluded that the equivalent continuous noise level (L_{eq}) on Rough and Ready Island near the project generally ranges between 60 decibels (A-weighted; dBA) and 84 dBA, with higher levels from short-term increases in noise levels 85 dBA or higher.

Noise-sensitive land uses are generally considered to be uses in which noise exposure could result in health-related risks to individuals or places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other land uses such as parks, historic sites, cemeteries, and other recreation areas are also considered sensitive to increases in exterior noise levels. Schools, places of worship, hotels, libraries, nursing homes, retirement residences, and other places where low interior noise levels are essential are also considered noise-sensitive land uses. The nearest sensitive receptor includes a residential area approximately 1,200 feet to the east.

3.7.1.1 Fundamentals of Sound

Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to the human ear. Noise is most simply defined as unwanted sound. Sound is measured in dB and accounts for variations such as frequency and amplitude, using a relative scale adjusted to the human range for hearing (referred to as the A-weighted decibel [dBA]). More specifically, the dBA measures sound reflective of how the average human ear responds to sound;

the range of human hearing typically ranges from 0 dBA (the threshold of hearing) to about 140 dBA (the threshold for pain).

A given noise may be more or less tolerable depending on the duration exposure, as well as the time of day which the noise occurs. The community noise equivalent level (CNEL) measures the cumulative 24-hour noise exposure, considering not only the variation of the A-weighted noise level but also the duration and the time of day of the noise. Various state and local agencies have adopted CNEL as the measure of community noise, including the State Department of Aeronautics and the California Commission on Housing and Community Development.

3.7.1.1.1 Percentile-exceeded Noise Level

The percentile-exceeded noise level, designated as L_n, describes the noise level that is met or exceeded by a fluctuating sound level n-percent of a stated time period. For example, the L_{50} is the sound level that is equaled or exceeded for 50% of the time period (equivalent to 30 minutes in an hour) and the L_{25} is the sound level that is equaled or exceeded for 25% of the time period (equivalent to 15 minutes in an hour).

3.7.1.2 Fundamentals of Ground-borne Vibration

Ground-borne vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. Each of these measures can be further described in terms of frequency and amplitude. Displacement is the easiest descriptor to understand; it is simply the distance that a vibrating point moves from its static position (i.e., its resting position when the vibration is not present). The velocity describes the instantaneous speed of the movement, and acceleration is the instantaneous rate of change of the speed.

Although displacement is fundamentally easier to understand than velocity or acceleration, it is rarely used for describing ground-borne vibration, because: 1) human response to ground-borne vibration correlates more accurately with velocity or acceleration; 2) the effect on buildings and sensitive equipment is more accurately described using velocity or acceleration; and 3) most transducers used in the measurement of ground-borne vibration actually measure either velocity or acceleration. For this study, velocity was the fundamental measure used to evaluate the effects of ground-borne vibration.

Vibration consists of rapidly fluctuating motions with an average motion of zero. The peak particle velocity (PPV) is defined as the maximum instantaneous positive or negative peak amplitude of the vibration velocity. The accepted unit for measuring PPV in the United States is inches per second.

3.7.2 Regulatory Setting

3.7.2.1 Federal

OSHA has established acceptable occupational noise exposure levels (29 CFR 1910.95). These regulations state that employees shall not be exposed to occupational noise levels greater than 90 dB without adequate hearing protection. If occupational noise levels exceed 85 dB, the employer must establish a hearing conservation program as described under 29 CFR 1910.95(c-o). For occupational noise exposure levels greater than 90 dB, the daily period of noise exposure must be decreased from 8 hours, as described under 29 CFR 1910.95(b).

The USEPA Office of Noise Abatement and Control was established to coordinate federal noise control activities and issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health and welfare and the environment. USEPA determined in 1981 that subjective issues such as noise would be better addressed at lower levels of government, and responsibilities for regulating noise control policies were transferred to state and local governments in 1982.

3.7.2.2 State

The State of California General Plan Guidelines, published by the Governor's Office of Planning and Research, provides guidance for the acceptability of projects within areas that are exposed to specific noise levels. For areas zoned for industrial, manufacturing, utilities, and agricultural land uses, the normally acceptable level of community noise exposure is less than 75 CNEL with 70 to 80 CNEL being considered conditionally acceptable (OPR 2003). The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

For the protection of fragile, historic, and residential structures from ground-borne vibration, Caltrans recommends a threshold of 0.2 inch per second PPV for normal residential buildings and 0.08 inch per second PPV for old or historically significant structures (Caltrans 2004).

3.7.2.3 Local

The City has developed community noise control regulations and standards which are consistent with or exceed the guidelines of the State Office of Noise Control and the standards adopted by the Federal Highway Administration (FHWA), Caltrans, and other government and regulatory agencies (City Municipal Code Title 16, Division 3, Chapter 16.60). Regarding construction, the City prohibits "operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work between the hours of 10:00 PM and 7:00 AM, so that

the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities."

The Noise Element of the City's 2035 General Plan establishes goals, policies, and criteria for determining land use compatibility with major noise sources within the community. The General Plan includes the following two central goals:

1. Protect the citizens of the Stockton Planning Area by preventing incompatible land uses from encroaching upon areas with existing noise-producing areas.
2. Protect the economic base of the Stockton Planning Area by preventing incompatible land uses from encroaching upon areas with existing noise-producing uses.

Additionally, the General Plan includes the following eight policies:

- Policies 1 to 5 restrict residential development near existing noise sources.
- Policy 6 addresses commercial uses and relegates such uses to 75 dBA CNEL measured from the nearest property line.
- Policy 7 requires that industrial uses not generate noise exceeding 80 dBA CNEL measured from the nearest property line.
- Policy 8 allows for exceptions to commercial and industrial uses when noise easements are obtained from affected property owners.

3.7.3 Environmental Impacts and Mitigation Measures

3.7.3.1 Baseline

At the time of publication of the NOP for the proposed project, the project site was vacant, as detailed in Section 2.2.2.

3.7.3.2 Thresholds

For purposes of this DEIR, the following thresholds, which are based on Appendix G of the CEQA Guidelines (Environmental Checklist), were used to determine if the proposed project would result in impacts related to noise and vibration. The proposed project would have an impact if:

- **NV-1:** The proposed project would expose people to, or generate, noise levels in excess of standards established in local general plan or noise ordinance or applicable standards of other agencies.
- **NV-2:** The proposed project would expose people to, or generate, ground-borne vibration levels in excess of the Caltrans vibration damage potential threshold criteria.
- **NV-3:** The proposed project would create a substantial permanent increase in ambient noise levels in the study area above levels existing without the proposed project.

- **NV-4:** The proposed project would create a substantial temporary or periodic increase in ambient noise levels in the study area above levels existing without the proposed project.
- **NV-5:** The proposed project would expose people residing or working on the project site to excessive noise levels as a result of activities at a public airport or private airstrip.

3.7.3.3 Methodology for Determining Impacts

The noise and vibration analysis was performed to determine whether the proposed project would affect existing noise and vibration levels in the vicinity of the Contanda facility. Specifically, the proposed project was evaluated to determine if noise and vibration levels would exceed pertinent thresholds for residential and commercial structures.

3.7.3.4 Impact Analysis

3.7.3.4.1 NV-1: Would the proposed project expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?

Construction. Construction activities typically require the use of numerous pieces of noise-generating equipment. These activities would temporarily increase ambient noise levels on an intermittent basis. Noise levels would fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers. Table 17 presents the typical noise level of proposed construction equipment for the proposed project.

Table 17
Proposed Construction Equipment

Type of Equipment	Typical Sound Level at 50 feet (dBA)
Crane	85
Grader	85
Loader	80
Truck	84
Dozer	85
Compactor	80
Backhoe	80
Generator	82

Source: FTA 2006.

Construction noise attenuates with distance from the source. Noise- and vibration-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely

affect the use of the land. Residences, schools, hospitals, and senior care facilities would each be considered noise- and vibration-sensitive and may warrant unique measures for protection from intruding noise. The closest sensitive receptor to the project site, a residence, is located approximately 1,200 feet to the east.

To calculate noise from construction, construction equipment was input into the FHWA Roadway Construction Noise Model, a computer program that enables the prediction of construction noise levels for a variety of operations based on a compilation of empirical data and the application of acoustical propagation formulas. As a conservative approach, no shielding was assumed. As shown in Table 18, the model indicates the maximum sound level (L_{max}) of combined noise equipment would be 59.9 dBA at 1,200 feet from the project site, and the L_{eq} would be 62.9 dBA, which is within the existing range for ambient noise levels in the area (60 to 84 dBA) and below the City's maximum noise level for industrial uses (80 dBA).

Table 18
Construction Daytime Noise Limits and Exceedances

Equipment	Calculated (dBA)		Noise Limits (dBA)		Noise Limit Exceedance (dBA)	
	L_{max}	L_{eq}	L_{max}	L_{eq}	L_{max}	L_{eq}
Backhoe	52.5	51.5	80	60	None	None
Grader	59.9	58.9	80	60	None	None
Crane	55.4	50.5	80	60	None	None
Compactor (ground)	58.1	54.1	80	60	None	None
Generator	55.5	55.5	80	60	None	None
Dump Truck	51.3	50.4	80	60	None	None
Concrete Mixer Truck	53.7	52.7	80	60	None	None
Total	**59.9**	**62.9**	**80**	**60**	**None**	**2.9**

Notes:
The L_{max} noise limit is representative of the maximum volume permitted by the City for industrial uses.
Per previous noise analyses conducted, the existing day-night noise level (CNEL) near the project site on Rough and Ready Island ranges between 60 to 84 dBA (Port 2004). To analyze noise increases conservatively, a baseline of 60 dBA was used as the hourly L_{eq} limit.
Evening and night noise has not been analyzed because construction would not occur during evening hours (7:00 PM to 10:00 PM) or nighttime hours (10:00 PM to 7:00 AM).

Operation. The City's noise regulations and standards apply to operations of the proposed project. Specifically, the City's General Plan regulates industrial uses with day-night noise levels of 70 dBA and below as "normally acceptable," and between 70 and 80 dBA as "conditionally acceptable" following the incorporation of noise reduction features. Noise levels above 80 dBA are considered unacceptable. The City's noise ordinance also requires that the maximum sound level generated by industrial land uses, or other permitted noise-generating activities within any industrial zoning

district, remain below 80 dBA. However, the City notes that if existing noise standards are currently exceeded, a proposed project shall not incrementally increase noise levels by more than 3 dBA. Previous noise monitoring conducted determined that the existing average day-night noise level nearby the project site ranges between 60 to 84 dBA.

The City's noise ordinance further defines noise standards for industrial uses that adjoin any other industrial or public facilities districts. Noise standards are also restricted for industrial uses located adjacent to noise-sensitive land uses such as residential and zoning districts. In this case, the project site neither adjoins other industrial or public facilities districts, nor is it adjacent to noise-sensitive land uses. Instead, the project site is surrounded on all sides by Port land and uses.

As part of the proposed project, approximately 175 trucks would enter and exit the project site per day, whereas rail operations would occur at the Port Road A site and vessel operations would occur at Berth 8. These different locations for offloading and loading operations would reduce overall noise operations as noise would not be all generated in the same area. The closest residence is over 1,200 feet to the east of the truck gates and rail yard, and more than 1,800 feet north of Berth 8. To evaluate noise impacts from current operations at sensitive receptors, noise levels from current operations were logarithmically calculated using the Federal Transit Administration's (FTA's) Noise Impact Assessment Spreadsheet, which accounted for the following:

- **Existing noise at the site.** Existing noise at the site ranges from 75 to 80 dBA (Caltrans and Port 2013).
- **Proximity of sensitive receptors to proposed operational noise.** The nearest residential area is located 1,200 feet to the east.
- **Noise barriers.** To be conservative, no shielding was assumed.

Based on the above inputs, the Noise Impact Assessment Spreadsheet shows that proposed project operations would produce a total equivalent continuous noise level of 31 dBA at the nearest sensitive receptor 1,200 feet away. This noise level is within the City's acceptable range for noise within residential areas. The levels are also well within the existing ambient noise levels for the area (ranging from 60 to 84 dBA).

Impact Determination: As shown in Table 18, the proposed project's construction noise levels would be within the existing range for ambient noise levels in the area and below the City's maximum noise level for industrial uses. For these reasons, noise associated with construction of the proposed project would result in a less-than-significant impact.

The proposed project's operations noise levels would be within the City's acceptable range for noise within residential areas and within the existing ambient noise levels for the area. Therefore, the proposed project operations would not exceed noise level standards from applicable ordinances, and impacts are considered less than significant.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.7.3.4.2 NV-2: Would the proposed project expose persons to or generate excessive groundborne vibration or groundborne noise levels?

Unless heavy construction activities are conducted extremely close (within a few feet) to neighboring structures, vibrations from construction activities rarely reach levels that damage structures. Typical vibration levels associated with construction equipment are provided in Table 19. Heavy equipment (e.g., a large bulldozer) generates vibrations levels of 0.089 inch per second PPV at a distance of 25 feet.

Table 19
Vibration Velocities for Construction Equipment

Equipment	PPV at 25 feet (inches/second)
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer/Backhoe	0.003

Note:
Source: FTA 2006.

The construction vibration damage criterion for buildings that are extremely susceptible to vibration damage is 0.12 inch per second PPV. This is the strictest PPV vibration threshold established by FTA. The nearest building to the construction area would be approximately 50 feet to the north and the typical vibration level from heavy equipment at this distance would be less than 0.035 PPV, which would not exceed the FTA damage criteria.

Proposed project operations would create some groundborne vibrations due to truck and rail movements. However, the project area is industrial and any vibrations produced as a result of proposed project operations would be low and infrequent.

Impact Determination: Because the construction-related vibration would not exceed FTA thresholds, the proposed project would result in a less-than-significant impact related to construction vibration. Due to the industrial nature of the area and the anticipated low and infrequent emissions of vibrations, it is expected that the proposed project-related operational vibration would result in a less-than-significant impact.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.7.3.4.3 NV-3: Would the proposed project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

As discussed in above, the proposed project would result in temporary construction and long-term operational noise, which would potentially increase ambient noise levels in the immediate project area. However, these levels would not increase to a level that would be considered substantial or have impacts on sensitive receptors.

Impact Determination: Based on the analysis presented above, the proposed project would result in less-than-significant impacts on ambient noise levels in the project vicinity.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.7.3.4.4 NV-4: Would the proposed project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

As discussed above, the proposed project would result in temporary construction and long-term operational noise, which would potentially increase ambient noise levels in the immediate area. However, these levels would not increase to a level that would be considered substantial or have impacts on sensitive receptors.

Impact Determination: Based on the analysis presented above, the proposed project would result in less-than-significant impacts on ambient noise levels in the project vicinity.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.7.3.4.5 NV-5: Would the proposed project expose people residing or working in the project area to excessive noise levels as a result of activities at a public airport or private airstrip?

There are no public airports located within 2 miles of the project area. The nearest public airport is the Stockton Metropolitan Airport, located nearly 5.5 miles southeast from the project site. The project site is not located in the vicinity of a private airstrip.

Impact Determination: Due to the distance of the project site from the nearest public airport or private airstrip, the proposed project would not expose people residing or working in the project area to excessive noise levels. There would be no impact.

Mitigation Measures: None required.

Residual Impact: No impact.

3.8 Traffic and Transportation

This section describes the existing transportation resources in the project area surrounding the project site and analyzes how the proposed project may affect transportation and traffic. Transportation resources for the proposed project include roads, highways, and rail lines. This analysis considers the potential for transportation impacts at the project site and the rail yard at the Contanda Port Road A facility. This section also describes applicable rules and regulations pertaining to transportation resources. During construction, trucks would be used to transport construction to the site and haul construction waste from the site. Construction workers and facility personnel would access the site almost exclusively by personal vehicles. Public transportation, bicycle use, and pedestrian access to the facility is extremely limited.

3.8.1 Environmental Setting

This section discusses the transportation-related context in which the proposed project would be constructed and would operate, including the street network that serves the area; existing transit service, bicycle, and pedestrian facilities near the project site; and a summary of current conditions.

3.8.1.1 Existing Roadways Providing Regional and Local Access

The Port is served by a number of regional freeways and highways, namely Interstate 5 (I-5), State Route 4 (SR-4), and State Route 99 (SR-99), with local roads serving the terminals and wharves. I-5, Fresno Avenue, Center Street, and El Dorado Street serve the major north-south movements of traffic in the proposed project vicinity, with Washington Street, Navy Drive, and Charter Way serving the east-west flow of traffic in the area. Existing roadways are discussed as follows:

- **Interstate 5** provides local, regional, and statewide access to the proposed project. It is an eight-lane freeway with a freeway-to freeway interchange located at the confluence of I-5 and SR-4.
- **State Route 4** is an east-west highway. Immediately west of I-5, SR-4 is also called Charter Way, and is an east-west arterial with two lanes. The roadway has four through lanes. Surrounding land uses are mainly industrial, with some commercial uses at major intersections. The second part of SR-4, known as the Crosstown Freeway, begins at Fresno Avenue, has an interchange with I-5, and continues east. This section of SR-4 is a divided freeway with two to four lanes in each direction, plus auxiliary lanes. Caltrans opened the Crosstown Freeway Extension project in 2016, which extended the Crosstown Freeway west from Fresno Avenue to Navy Drive. The extension is elevated and crosses over Fresno Avenue, creating a grade separation that now prohibits highway traffic from entering the Boggs Tract neighborhood at Fresno Avenue.

- **Navy Drive** is a four-lane facility with a partial interchange, which integrates the SR-4 Crosstown Freeway extension with a direct route into the Port's West Complex that improves traffic flow, decreases idle times, and improves safety.
- **Washington Street** is a two-lane east-west collector and an arterial, which begins in the west at Navy Drive and terminates at the Weber Avenue intersection. Washington Street was previously the major east-west facility through the Port area and the residential area east of the Port. However, following the opening of the Crosstown Freeway extension, Washington Street from the railroad tracks west is now a private Port road, which will likely be closed to traffic in the near future.
- **Fresno Avenue** is a north-south roadway from north of Washington Street through the residential area south of Charter Way. The facility is two lanes wide. Between Hazelton Avenue and Charter Way, Fresno Avenue is surrounded by mainly industrial land uses.

3.8.1.2 Rail Transportation Setting

California's freight railroad system consists of Class I railroads (BNSF and UP), which transport freight to and from the state over state lines and Class III railroads, referred to as "short line" railroads, which provide local rail movements. Both UP and BNSF lines serve the Port. In Northern California, the Martinez Subdivision, Feather River Canyon, and Donner Pass routes serve the ports of Oakland and Stockton, and are owned and dispatched by UP but serve BNSF through trackage right agreements. The Port provides its own internal railway system serviced by CCT, which provides all switching and local movements within the Port. CCT switchers service the Port Road A facility.

3.8.1.3 Existing Public Transit Service

There are no public transit facilities within the Port.

3.8.1.4 Existing Bike and Pedestrian Facilities

Bike and pedestrian facilities are extremely limited within the Port. There are no bike lanes and most roads are private and do not include sidewalks.

3.8.2 Applicable Regulations

3.8.2.1 State

Caltrans policies are applicable to the proposed project and are summarized in Caltrans's *Guide for the Preparation of Traffic Impact Studies*, which provides a summary of goals and policies (Caltrans 2002). Traffic analysis in California is guided by policies and standards set at the state level by Caltrans and local jurisdictions.

3.8.2.2 Regional

SJCOG has developed a Regional Transportation Plan (RTP), which guides the region's transportation development over a 20-year period and covers all modes of transportation. The RTP is updated every 3 years to reflect changes in available funding, economic activity, and population, and to incorporate findings from corridor studies and major infrastructure investments. The projects included in the RTP are also assessed as to their effect on air quality, as the RTP is used in the SIP to ensure states are meeting federal conformity standards. If a project is included in the RTP, its effect on regional conformity goals has been accounted for. The current 2018 RTP was adopted by the SJCOG Board in June 2018. The City is responsible for coordination with regional transportation plans.

3.8.2.3 Local

The proposed project would also be required to adhere to the City's transportation policies. The City requires traffic impact analyses for projects generating 100 or more vehicle trips during the AM or PM peak hours. The City's 2035 General Plan Update guides the maintenance, design, and operation of transportation, including streets and highways, within the project area. The following goals and policies are provided in the Transportation and Circulation Element:

- **Goal TC-1:** To develop an integrated transportation system that provides for the safe and efficient movement of people and goods
- **Goal TC-2:** To develop a street and highway system that promotes safe, efficient, and reliable movement of people and goods by multiple transportation modes and routes, and that reduces air quality impacts
- **Goal TC-8:** To encourage and maintain the operation of the Port as an asset to the community and a source of jobs, while minimizing environmental impacts in accordance with CEQA
- **Policy TC-8.2: Port Access.** The City shall work to improve access to the Port while minimizing the adverse effects of Port-related traffic on surrounding neighborhoods.

Level of service (LOS) is used by transportation planners and engineers as the standard measure for determining traffic congestion on roadways and intersections. Because the project area is within the City's jurisdiction, it is subject to LOS standards used by the City. The City identifies the minimum acceptable operations criteria for roadway segments and signalized intersections to be LOS D.

3.8.3 Environmental Impacts and Mitigation Measures

3.8.3.1 Baseline

At the time of publication of the NOP for the proposed project, the project site was vacant, and the adjacent existing Contanda Port Road A facility received bulk liquid shipments via manifest rail, as detailed in Section 2.2.2.

3.8.3.2 Thresholds

For purposes of this DEIR, the following thresholds, which are based on Appendix G of the CEQA Guidelines (Environmental Checklist), were used to determine if the proposed project would result in impacts to traffic and transportation resources. The proposed project would have an impact if:

- **TT-1:** The proposed project would conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
- **TT-2:** The proposed project would conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways.
- **TT-3:** The proposed project would result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- **TT-4:** The proposed project would substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- **TT-5:** The proposed project would result in inadequate emergency access.
- **TT-6:** The proposed project would conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

3.8.3.3 Methodology for Determining Impacts

Because the project area is within the jurisdiction of the City, the proposed project is subject to LOS standards used by the City. The City identifies the minimum acceptable operations criteria for roadway segments and signalized intersections to be LOS D (City 2003). On-road construction trips are restricted to worker vehicle trips (15 per day) and periodic limited deliveries of construction equipment. Trucks would enter the facility at the truck gates at North Port Road 13.

The Federal Railroad Administration regulates freight railroads for the federal government by creating and enforcing national rail safety regulations. The California Public Utilities Commission has jurisdiction over safety regulations for common carriers and at-grade railroad crossings at the state level. Two Class I railroads, BNSF and UP, operate within the Stockton area. BNSF operates the Stockton Intermodal Facility on the southeast edge of the City and UP operates a major intermodal facility and other terminal operations in Lathrop, California. Several short-line railroads also operate in Stockton. CCT, jointly owned by BNSF and UP, operates 52 miles of freight service between Stockton and Lodi and is the short-line operator for the Port. CCT connections are made with BNSF, UP, and the Stockton Terminal and Eastern Railroads, which run from Stockton to Linden.

The Contanda Port Road A facility would serve as a rail transfer hub for renewable diesel product shipments coming into the Port. The facility would receive tanker car shipments via inbound manifest trains from UP and BNSF. A typical train entering the Port with tankers bound for the project site would include various numbers of product cars, three locomotives, and two buffer cars. The train would originate from various production facilities located throughout the United States. The trains would be routed through the San Joaquin Valley on either UP or BNSF trains (this analysis assumed an even mix). Upon arrival within the Port, a CCT switching crew would take control of the train movements. As part of the proposed project, the train would be broken up by CCT at switching tracks just west of the Contanda Port Road A facility. A CCT switcher locomotive would then move the tanker cars bound for the proposed project to the Contanda Port Road A facility on existing rail lines. Following placement of the tanker cars, the switching locomotive would pull forward out of the offload area and either wait for product unloading or leave the facility entirely. Following placement of the product cars, no additional movement would occur until the product is discharged and trains are prepared for departure. Finally, the product car segments would be recoupled and depart from the Port.

Table 11 presents the operational mode shift analyzed in Section 3.8.3.4. The proposed project would result in increased truck trips and rail trips and switching events per year as compared to baseline conditions.

3.8.3.4 Impact Analysis

3.8.3.4.1 TT-1: Would the proposed project conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

The City's Transportation Impact Analysis Guidelines require the preparation of a transportation impact analysis for any project estimated to generate more than 100 AM or PM peak-hour trips.

Construction. The proposed project would be constructed on site and, except for the initial movement of construction equipment to the site at the start of construction and eventual movement from the site at the end of construction, construction would not affect roads or other transportation corridors. There would be approximately ten truck trips per day during the initial phases to haul away debris and import clean fill and construction material. Construction-related traffic would remain under the threshold of 100 trips during peak hours.

Operations. Estimates of new annual, daily, and peak hour project operational vehicle trip generation were developed for the proposed project and are presented in Table 20.

Table 20
Project Vehicle Trip Generation Estimates

Vehicles	Size	Annual	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Product Deliveries[1,2]	17,456 truckloads per year	34,912	175	7	11	18	8	10	18
Employee Trips[3]	5 employees per day	2,000	15	5	1	6	1	5	6
Passenger Car Equivalents[4]		71,824	365	19	23	42	17	25	42

Notes:

1. Each truck was assumed to include one inbound and one outbound trip. Some trips may be chained, resulting in lower trip generation than presented here.
2. Trip generated based on provided information for existing and proposed project site. Entering and exiting percentages are based on Institute of Transportation Engineers *Trip Generation* (9th Edition) average distribution for Intermodal Truck Terminal (Land Use Code 030):
   Daily: T = A / 200 (Assumes deliveries/shipments occur on approximately 200 days of the year.)
   AM: 10% of daily; Enter = 40%; Exit = 60%
   PM: 10% of daily; Enter = 47%; Exit = 53%
   Where T = trips generated, A = average annual trips
3. Trip generated based on Institute of Transportation Engineers *Trip Generation* (9th Edition) average rates for Light Industrial (Land Use Code 110):
   Daily: T = 3.02 * (X)
   AM: T = 0.44 * (X); Enter: 83%; Exit = 17%
   PM: T = 0.42 * (X); Enter: 21%; Exit = 79%
   Where T = trips generated, X = Employees
4. Each truck trip is accounted for as two vehicle trips to account for the travel behaviors of large trucks.

Impact Determination: For both construction and operation, the proposed project is expected to generate significantly less than 100 net-new vehicle trips in either the morning or evening peak hours, even considering the passenger car equivalents for truck trips during operations, as shown on Table 20, and no further off-site analysis is required. Impacts would be considered less than significant.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.8.3.4.2 TT-2: Would the proposed project conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?

SJCOG is responsible for ensuring local government conformance with the Regional Congestion Management Program (RCMP), a program aimed at reducing regional traffic congestion. The RCMP requires that each local jurisdiction identify existing and future transportation facilities that will operate below an acceptable service level and provide mitigation where future growth degrades that

service level. SJCOG has review responsibility for proposed development projects that are expected to generate 125 or more vehicle trips during the weekday AM or PM peak-hours or 500 or more total daily vehicle trips on any day of the week.

Impact Determination: As the proposed project would not generate more than 125 peak hour trips or more than 500 daily trips, it would not conflict with the RCMP. Therefore, there would be no impact.

Mitigation Measures: None required.

Residual Impact: No impact.

3.8.3.4.3 TT-3: Would the proposed project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The Stockton Metropolitan Airport, the nearest airport to the project site, is approximately 5.5 miles southeast of the project site. The proposed project does not include any structures of significant height that would interfere with air traffic patterns.

Impact Determination: The proposed project segment closures would not include any aerial structures, and no changes to air traffic patterns would occur. Therefore, no impacts would occur.

Mitigation Measures: None required.

Residual Impact: No impact.

3.8.3.4.4 TT-4: Would the proposed project substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) conflict with adopted policies, plans, or programs supporting alternative transportation?

The proposed project would generate new manifest rail operations, in which trains are made up of mixed railcars (e.g., boxcars and tank cars). Manifest rail operations require trains to make multiple stops and switches to collect and deposit product from different pick-up and drop-off locations along a single route. However, these movements would occur on existing rail lines.

Washington Street, Navy Drive, Fresno Avenue, and Charter Way all provide primary access to the project site from the interstate highway system and are all designated to accommodate trucks carrying combustible materials. Added truck traffic would be limited to the routes designed and designated to accommodate trucks carrying combustible materials, and the project is not expected to substantially increase hazards.

Impact Determination: The proposed project does not include any modifications to the existing transportation network and is consistent with overall uses at the Port. All rail construction would be entirely on the project site within the Port. While the proposed project would increase rail trips, all rail would travel on dedicated commercial rail right of ways and would not conflict with public or any alternative transportation programs or plan. Therefore, impacts would be less than significant.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.8.3.4.5 TT-5: Would the proposed project result in inadequate emergency access?

All vehicular access to and from the project site would be provided from Washington Street via Port Roads 21 and 23. Washington Street connects to the regional transportation system via Navy Drive and Fresno Avenue, such that if one route was blocked, there are alternate routes to access the site. The Port maintains its own Police Department, which is responsible for providing security protection of Port tenants on a 24-hour basis. Additionally, the closest fire station to the project site is approximately 3.5 miles to the east of the site at 110 West Sonora Street. There are two additional fire stations located at 3499 Manthey Road and 1501 Picardy Drive, approximately 4 miles south and northeast of the project site, respectively.

Switching activities would occur only on existing rails yards and within the terminal and therefore would not block intersections.

Impact Determination: Because the proposed project is not expected to increase the need for emergency services or block any emergency access routes, the proposed project is expected to have less-than-significant impacts related to inadequate emergency access.

Mitigation Measures: None required.

Residual Impact: Less-than-significant impact.

3.8.3.4.6 TT-6: Would the proposed project conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The proposed project is located in an industrial area with roadways designed to accommodate the high percentage of truck traffic. Bicycle and pedestrian facilities are generally not provided in the area, nor are they planned for in the area. However, the proposed project would not preclude the construction of bicycle and pedestrian facilities.

As the roadways connecting the project site to the regional transportation system are designated routes for vehicles transporting combustible materials and no bicycle routes are designated or planned in the area, the proposed project is not expected to decrease bicycle safety.

Regional transit service is provided by the San Joaquin Regional Transit District, with the nearest transit stop located on the corner of South Los Angeles Avenue and West Sonora Street, approximately 1 mile from the project site. Route 76 serves this stop, which connects the residential area east of the Port to downtown Stockton and beyond. Given the low number of additional employees, their potential to have non-traditional work schedules, and the distance from transit, no increases in transit ridership are expected with the proposed project. Additionally, as the proposed project would generate few net-new peak hour vehicle trips, added traffic on the roadways is not expected to decrease transit vehicle travel time in the area.

Impact Determination: The proposed project is within an industrial Port complex. There are no policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities for roadways in the project area. Therefore, there would be no impact.

Mitigation Measures: None required.

Residual Impact: No impact.

4 Cumulative Impacts

4.1 Requirements for Cumulative Impact Analysis

CEQA requires that EIRs analyze cumulative impacts. As defined in the CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of a project evaluated in an EIR together with other foreseeable projects causing related impacts in the vicinity of the proposed project. CEQA Guidelines Section 15130 requires that an EIR discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable." The following definition of cumulatively considerable is provided in CEQA Guidelines Section 15065(a)(3):

> "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

According to CEQA Guidelines Section 15130(b):

> [t]he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but must briefly describe its basis for concluding that the incremental effect is not cumulatively considerable. Cumulative impact assessments are not required for impacts that do not result in part from a project evaluated in an EIR. Therefore, the cumulative impact analysis in this section focuses on whether the impacts of the proposed project are cumulatively considerable within the context of impacts caused by other past, present, or future projects. The cumulative impact scenario considers other projects proposed within the area defined for each resource that have the potential to contribute to cumulatively considerable impacts.

A list of closely related projects that have been or may be constructed in the cumulative geographic scope of the proposed project was reviewed and evaluated. Table 21 includes a list of past, present, and probable future projects producing related or cumulative impacts. In consideration of these

projects, cumulative impact analyses for each environmental issue potentially affected by the proposed project are presented herein. For several resource areas, this cumulative impact analysis also included projected future growth as a factor.

4.1.1 Projects Considered Under Cumulative Analysis

4.1.1.1 Past History

The Port has a long history of industrial and maritime development. The Port is one of the first ports on the west coast to have on-dock rail access, with trains traveling to the Port as early as 1934. The first channel deepening project (to 35 feet) began in 1935 (Port 2017). The Port strategically elected not to pursue containerization in the 1960s, establishing itself as one of the largest dry/break bulk and liquid bulk ports on the west coast. Today, the Port supports warehouse storage and handling facilities for both dry and liquid bulk materials, facilities, and equipment to handle break-bulk and containerized cargoes by land or sea. The Port continued to grow and add land and terminals through the mid and late 1900s, with the most recent acquisition, Rough and Ready Island, in 2000.

4.1.1.2 Present and Future Projects

As shown in Table 21, a total of 19 present or reasonably foreseeable future projects (approved or proposed) were identified within the general vicinity of the proposed project that could contribute to cumulative impacts.

Table 21
Projects Considered in the Cumulative Impact Analysis

Reference No.	Project Name	Location	Project Description	Project Status
1	Port of Stockton West Complex Development Plan: Marine Terminal Development	Port of Stockton	Marine terminal-related development associated with the Port's West Complex.	In progress
2	Port of Stockton West Complex Development Plan: Commercial and Industrial Park Development	Port of Stockton	Upland commercial development associated with the Port's West Complex.	In progress
3	Port of Stockton West Complex Development Plan: Infrastructure Improvements	Port of Stockton	Industrial development associated with the Port's West Complex.	In progress
4	State Route 4 Crosstown Freeway Ramp Extension Project	City of Stockton	Extension of existing ramps with 1 mile of elevated structure. Minor widening and realignment of Navy Drive between Fresno Ave and BNSF underpass.	Complete
5	Navy Drive Widening Project	Port of Stockton	Widening Navy Drive to accommodate traffic changes from SR-4 Crosstown Freeway Ramp Extension Project.	In progress

Reference No.	Project Name	Location	Project Description	Project Status
6	Daggett Road Grade Separation Project	Port of Stockton	Construction of a new bridge over the BNSF railroad tracks on Daggett Road (now known as the Port of Stockton Expressway).	Complete
7	McCloy Avenue Extension Project	Port of Stockton	Extension of McCloy Avenue on the Port's West Complex.	Complete
8	Endicott Biofuel Production Facility Project	Port of Stockton	Construction and operation of a biofuel production facility with the capacity of 1.5 million barrels of biofuel annually.	In progress
9	Targa Stockton Terminal Project	Port of Stockton	Construction and operation of a tank farm/terminal facility on approximately 19 acres within the rail circle that encompasses the Pacific Ethanol production facility, use of Berth No. 9 at the Port, and an existing public right of way for a product pipeline for transferring fuels.	In progress
10	RSL Wood Grinding Facility	Port of Stockton	Construction and operation of a wood grinding facility on the East Complex.	In progress
11	SATCO Marine Terminal	Port of Stockton	Construction and operation of a sulfuric acid facility on the East Complex.	Planning underway
12	Nautilus Data Technology Data Storage Facility	Port of Stockton	Construction and operation of a waterborne data center facility at the West Complex.	Planning underway
13	San Francisco Bay to Stockton (John F. Baldwin and Stockton Ship Channels) Navigation Improvement Project	Stockton Deep Water Ship Channel	Deepening the Stockton Deep Water Ship Channel by 5 to 7 feet to improve maritime commerce efficiencies.	Planning underway
14	Twitchell and Mandeville Island Dredged Material Placement Sites	Port of Stockton	Construction and operation of new dredge material placement sites for maintenance dredged sediment.	Complete
15	ACE Rail Maintenance Facility Improvements	San Joaquin Regional Rail Commission	Installation of Wayside Power at the ACE Rail Maintenance Facility to reduce idling time for the diesel locomotives, thereby reducing emissions and noise nuisance concerns raised by nearby sensitive receptors.	Complete
16	Open Window Master Development Plan	City of Stockton	Master Development Plan for downtown Stockton.	Planning underway
17	Minier Avenue Complete Streets Road Plan Project	City of Stockton	Project consists of a lane reduction from four to two lanes and the addition of Class II bicycle lanes throughout the project area and other traffic improvements.	In progress

Reference No.	Project Name	Location	Project Description	Project Status
18	Eco-Energy Terminal Development	Port of Stockton	Project consists of construction and operation of a 10-acre liquid bulk receiving terminal, which would be operated only using unit trains.	In progress
19	Contanda Port Road A Facility Expansion	Port of Stockton	Project consists of expanding an existing liquid bulk terminal by removing fourteen existing ASTs and replacing them with five new ASTs of greater capacity.	In progress
20		Proposed Project		

4.2 Analysis of Cumulative Impacts

The proposed project, in conjunction with other past, present, and reasonably foreseeable future related projects, has the potential to result in significant cumulative impacts when its independent impacts and the impacts of related projects combine to create impacts greater than those of the proposed project alone. However, the proposed project would not contribute to cumulative impacts related to those environmental resource areas on which it would have no impact, including all issues associated with aesthetics, agricultural and forestry resources, geology and soils, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and services. Rationale for this determination is summarized in Section 4.2.1. The cumulative impact evaluation subsequently presented in Section 4.2.2 is therefore focused on air quality, biological resources, cultural resources, GHG emissions, hazards and hazardous materials, noise and transportation and traffic.

4.2.1 Cumulative Impacts for Unaffected Environmental Resource Areas

4.2.1.1 Aesthetics

The existing visual character of the project area is not considered scenic and the visual character of the project area would not be changed by the proposed improvements. Therefore, the proposed project would have no impacts related to aesthetics, which precludes the proposed project from cumulatively contributing to an impact on these resources.

4.2.1.2 Agricultural and Forestry Resources

The project site does not include any farmlands or forestry resources and the proposed project would have no impact on farmlands or forests, which precludes the proposed project from cumulatively contributing to an impact on these resources.

4.2.1.3 Hydrology and Water Quality

The proposed project would result in no impacts with respect to changes in potable water levels, reduction in potable groundwater capacity, and potential violation of regulatory water quality standards at an existing production well. Similarly, the proposed project is outside the 100-year floodplain and any tsunami, seiche, or mudflow hazard zones. Although it is located within a dam inundation zone, the proposed project would have no effect on existing levee or dam failure inundation hazards and would not result in increased exposure to these hazards. Because the proposed project would not result in water quality or hydrology impacts, this precludes the proposed project from cumulatively contributing to an impact on these resources.

4.2.1.4 Land Use and Planning

The proposed project is consistent with all applicable and established zoning regulations and requirements and would have no impacts related to land use, which precludes the proposed project from cumulatively contributing to an impact on these resources.

4.2.1.5 Mineral Resources

There are no mineral resources within the project site, and extraction of mineral resources within San Joaquin County is focused in the southwestern portion of the County in the vicinity of the San Joaquin River. The project site is within a Mineral Resource Zone-1 classified area, which indicates that "adequate information indicates that no significant mineral deposits are present or it is judged that little likelihood exists for their presence" (City 2007). Therefore, the proposed project would have no impact related to mineral resources, which precludes the proposed project from cumulatively contributing to an impact on these resources.

4.2.1.6 Population and Housing

There are no housing units within the project site, and the zoning precludes construction of any housing. No new homes, businesses, or road extensions would occur as part of the proposed project. Rail extensions would be limited to short spurs, staging areas, and connections between existing lines. Therefore, the proposed project would result in no impacts pertaining to population and housing, which precludes the proposed project from cumulatively contributing to an impact on these resources.

4.2.1.7 Public Services

The proposed project would not result in increased demand on any existing fire or police protection. The project area is adequately served by the City Fire Department, City Police Department, and Port police. In addition, the proposed project would include construction and operation of an automatic on-site fire protection system operated and maintained by facility employees. Therefore, the proposed project would result in no impacts related to public services, which precludes the proposed project from cumulatively contributing to an impact on this resource.

4.2.1.8 Recreation

The proposed project does not include construction or expansion of any recreational facilities and would not result in increased demand or other effects to recreational facilities. Therefore, the proposed project would result in no impacts related to recreation, which precludes the proposed project from cumulatively contributing to an impact on this resource.

4.2.2 Cumulative Impacts for Affected Environmental Resource Areas

4.2.2.1 Air Quality

The geographic scope of the cumulative air quality analysis is the SJVAB. Construction and operational emissions are the source of impacts related to air quality. Each of the projects listed in Table 21 would occur within the SJVAB, and air quality impacts from these projects would be additive. Projects listed in Table 21 would be required to perform their own analyses of associated air quality impacts, including development of mitigation measures to address significant impacts. Several of the projects listed in Table 21 include the construction and operation of industrial facilities, which may have significant air quality impacts both with and without mitigation.

In addition, one of the projects in Table 21 is of specific interest in terms of considering cumulative impacts. As discussed in Section 2.1.3, Contanda operates an adjacent site at Port Road A, which is currently being expanded to increase storage capacity and annual throughput. This expansion was analyzed in the July 2018 IS/MND (Anchor QEA 2018b). As part of the proposed project, Contanda is removing fourteen existing ASTs and replacing them with five new ASTs of greater capacity. The Port Road A facility receives, stores, and distributes biodiesel and DEF for its customers. Contanda also dilutes concentrated DEF with water for one of its customers. While the proposed project would use the on-terminal rail yard at the Port Road A site, the rail cars would connect to a separate aboveground pipeline, and product would not mix between the two terminals (renewable diesel is combustible and cannot be accommodated in the Port Road A facility). However, because the rail operations occur in the same location, this cumulative impact analysis conservatively considered the air quality impacts of the two projects in total. As shown in Table 22, the cumulative NO_X emissions would be significant and unavoidable.

Table 22
Operational Emissions in 2020 (tons per year)

Source Category	PM_{10}	$PM_{2.5}$	NO_X	SO_X	CO	VOC
Proposed Project						
Trucks	0	0	21	0	3	1
Rail	0	0	16	0	5	1
Ships at Berth	0	0	7	0	1	0
Ships Transit	0	0	2	0	0	0
Tugboats	0	0	1	0	0	0
Employee Vehicles	0	0	0	0	0	0
Emergency Generator	0	0	0	0	0	0
Port Road A Facility Marine Terminal Operational Emissions						
Ships	0.2	0.2	11.9	0.6	0.9	0.4
Tugboats	0.04	0.04	1.86	0.01	4.79	0.20
Truck	0.16	0.08	7.51	0.02	1.22	0.34
Rail	0.05	0.05	1.93	0.00	0.42	0.9
Baseline Emissions	0.40	0.30	19.60	0.50	6.00	0.90
Cumulative Impacts						
	0.85	0.67	89.8	1.13	22.33	4.74
Significance Threshold	15	15	10	27	100	10
Significant?	No	No	**Yes**	No	No	No

Note:
Emissions may not add precisely due to rounding.

4.2.2.1.1 Conclusion

As presented in Section 3.1, operation of the proposed project would result in exceedances of NO_X thresholds. Because the SJVAB is classified as an extreme O_3 nonattainment area, projects listed in Table 21 may contribute additional air quality impacts. Thus, the proposed project's air quality impacts would be cumulatively considerable.

Implementation of the proposed project, combined with other related past, present, or probable future projects, would result in substantial cumulative adverse effect related to air quality. This cumulative impact would primarily result from the proposed project's NO_X emissions, which would exceed SJVAPCD's NO_X significance thresholds in the SJVAB, which is classified as an extreme O_3 nonattainment area. Thus, cumulative air quality impacts would be significant and unavoidable.

4.2.2.2 Biological Resources

The geographic scope of the cumulative biological resources analysis consists of the project site and areas in close proximity that may be affected by the proposed project's construction or operations. The proposed project includes removal of trees which may provide habitat to special-status nesting birds. Implementation of mitigation measure MM-BIO-1 would ensure that any project impacts to special-status birds remain less than significant.

Of the projects listed in Table 21, only the Contanda Port Road A facility project would occur within the same geographic scope as the proposed project. The July 2018 IS/MND for the Contanda Port Road A facility expansion (Anchor QEA 2018b) determined that the expansion would not result in significant impacts to biological resources including birds, as that project entails construction and operations in industrialized habitat devoid of significant biological resources.

4.2.2.2.1 Conclusion

Based on these analyses, it is concluded that the proposed project and projects listed in Table 21 would not have cumulatively considerable impacts on biological resources.

4.2.2.3 Cultural and Historic Resources

The geographic scope of the cumulative cultural and historic resources analysis consists of the project site and the immediate vicinity. Projects on land that have the potential to modify or demolish structures that are more than 50 years old have the potential to contribute to cumulative impacts on historic architectural resources. Projects that involve grading of intact, natural landforms (i.e., not modern landfill areas) have the potential to contribute to cumulative impacts on paleontological resources.

The proposed project includes grading across the site and installation of the subsurface pipeline, which requires implementing "provisions for historical or unique archaeological resources accidentally discovered during construction." At a minimum, any construction associated with the projects listed in Table 21 would also proceed in adherence with these guidelines, in addition to federal, state, and local regulations designed to address cultural resource impacts potentially arising from construction.

4.2.2.3.1 Conclusion

Based on these analyses, it is concluded that the proposed project and projects listed in Table 21 would not have cumulatively considerable impacts on cultural and historic resources.

4.2.2.4 Geology and Soils

Given the project site's flat topography and lack of notable geological or soil conditions, the geographic scope of the cumulative geology and soils resources analysis is limited to the project site and immediate surroundings.

The proposed project would construct improvements that would be subject to ground shaking, as is common for the region. In consideration of design standards relating to seismic hazards, and plans addressing earthquake hazards, potential impacts associated with siting in a seismically active region would be less than significant. There would be no other impacts from the proposed project related to geology or soils.

Of the projects listed in Table 21, only the Contanda Port Road A facility expansion would occur within the same geographic scope as the proposed project. Potential impacts related to geology and soils from the Contanda Port Road A facility were analyzed in the July 2018 IS/MND (Anchor QEA 2018b). Similar to the proposed project, the Contanda Port Road A facility would be constructed in adherence with applicable design standards relating to seismic hazards. Seismic hazards are also addressed in operating and emergency plans that would apply to Contanda Port Road A facility.

4.2.2.4.1 Conclusion

Based on these analyses, it is concluded that the proposed project and projects listed in Table 21 would not have cumulatively considerable impacts related to geology and soils.

4.2.2.5 Greenhouse Gas Emissions

Global surface temperatures have trended higher over the past century, due at least partly to the generation of GHG emissions from human activities. Some observed changes include shrinking glaciers, thawing permafrost, and shifts in plant and animal ranges. Emissions of GHGs contributing to global climate change are attributable to human activities associated with manufacturing, utilities, energy extraction, transportation, agriculture, and residential uses. Therefore, all emissions of GHGs contribute to global climate change. The geographic scope of the cumulative GHG emissions analysis in this DEIR is California, because California, as discussed in Section 3.5, has set GHG thresholds and established target reductions. GHG emissions from the proposed project would largely occur as a result of construction and new operations.

Contanda operates an adjacent site at Port Road A, which is currently being expanded to increase storage capacity and annual throughput. This expansion was analyzed in the July 2018 IS/MND (Anchor QEA 2018b). While the proposed project would use the on-terminal rail yard at the Port Road A site, the rail cars would connect to a separate aboveground pipeline, product would not mix between the two terminals (renewable diesel is combustible and cannot be accommodated in the

Port Road A facility), and the two terminals would be operated independently. However, because the rail operations occur in the same location, this cumulative impact analysis conservatively considered the GHG impacts of the two projects in total. As shown in Table 23, the cumulative GHG emissions exceed 10,000 metric tons per year and would be considered significant and unavoidable.

Table 23
Annual GHG Construction Emissions (metric tons per year)

Source Category	CO_2	CH_4	N_2O	CO_2e
Proposed Project				
Amortized Annual Construction	17	0	0	17
Trucks	5,814	0	1	6,097
Rail	1,763	0	0	1,763
Ships at Berth	513	0	0	522
Ships Transit	2,359	0	0	2,396
Tugboats	58	0	0	59
Employee Vehicles	69	0	0	70
Port Road A Facility				
Amortized Annual Construction	8	0	0	8
Ships at Berth	667	0	0	680
Ships in Transit	3,495	0	0	3,520
Tugboats	7,590	0	0	7,703
Trucks	2,070	0	0	2,170
Rail	162			162
Baseline Emissions	10,972	0	1	11,338
Total	**35,557**	**0**	**2**	**36,505**

Notes:
Emissions may not add precisely due to rounding. Construction emissions were amortized over 30 years.
Total annual GHG emissions are the sum of amortized construction and annual operational emissions.

4.2.2.5.1 Conclusion

Each of the projects listed in Table 21 would occur within California, and GHG impacts from these projects would be additive. Development projects listed in Table 21 would be required to perform their own analysis of associated GHG impacts, including development of mitigation measures to address these impacts if required. The projects listed in Table 21 could potentially result in significant GHG impacts either with or without mitigation. In addition, the proposed project's GHG emissions would be above the 10,000 metric tons per year threshold and would contribute to worldwide GHG emissions. Therefore, the proposed project's GHG emissions represent a significant cumulative contribution to climate change.

As previously discussed, the proposed project's emissions may be offset by the reduction in transportation emissions as a result of renewable diesel use. The proposed project as well as other cumulative projects would be subject to future requirements imposed by CARB's 2017 Climate Change Scoping Plan Update. The Scoping Plan Update describes how California will reduce its GHG emissions by 40% below 1990 levels by 2030. However, until such requirements are implemented and mandated, it is assumed that cumulative GHG emissions are significant and unavoidable.

4.2.2.6 Hazards and Hazardous Materials

The geographic scope of the cumulative hazards and hazardous materials analysis consists of the project site, soil and groundwater in the immediate area, and rail and roadways that would be affected in the event of an accidental release of hazardous materials during transport.

The project site may contain contaminated soils or other materials that may be hazardous if disturbed during facility construction or operation. Construction and operation of the proposed project would occur in adherence with applicable regulations or procedures pertaining to hazardous materials management. With adherence to these regulations and procedures, the proposed project would not result in significant hazards or hazardous material impacts.

Several of the projects listed in Table 21, particularly the projects with proposed industrial uses in the City, may similarly occur on or near hazardous material sites or may include the use, transport, and disposal of hazardous materials. For these projects, potential impacts from hazardous materials on site would likely be localized, and any transport or disposal of materials would occur per federal, state, and local regulations. Development projects listed in Table 21 would be reviewed for impacts related to hazards and hazardous materials and would be required to address any potential impacts with mitigation. Because the likelihood of accidental upset during transport of hazardous materials is relatively low, it is unlikely that there would be simultaneous accident events from shipping, and cumulative effects are not anticipated.

4.2.2.6.1 Conclusion

Based on these analyses, it is concluded that the proposed project and projects listed in Table 21 would not have cumulatively considerable impacts related to hazards and hazardous materials.

4.2.2.7 Noise

The geographic scope of the cumulative noise analysis includes the project site and surrounding industrial area, as well as sensitive receptors that may be affected by construction equipment and proposed facility operation. The nearest residences to the project site are located approximately 1,200 feet to the east, and the closest school (Washington Elementary) is approximately 0.6 mile to the southeast. The nearest park is Boggs Tract Park, approximately 0.5 mile to the east.

Noise levels generated by the proposed project construction and operations would be within the conditionally acceptable range for residential uses. Consistent with the City's ordinance, construction would not occur between the hours of 10:00 PM and 7:00 AM. Therefore, proposed project construction would result in no impact from exceeding noise-level standards from applicable ordinances. Heavy equipment vibration from construction would not exceed the FTA damage criteria, and proposed project operations would not generate any new sources of vibration.

Operational noise would combine with other projects listed in Table 21, including Contanda's operations at the Port Road A facility. However, the overall uses at both sites are intermittent during product deliveries or distribution and consistent with overall port use. Noise generated by both sites would be well below the existing background ambient noise levels.

4.2.2.7.1 Conclusion

Based on these analyses, it is concluded that the proposed project and projects listed in Table 21 would not have cumulatively considerable impacts related to noise and vibration.

4.2.2.8 Traffic and Transportation

The geographic scope for cumulative impacts on transportation and traffic includes existing transportation resources in the area surrounding the project site, consisting of roads, highways, and rail lines.

Development projects listed in Table 21 may have transportation impacts that would overlap with the study area for the proposed project, and could contribute additional traffic at the intersections analyzed, particularly projects within the City. Any development projects would be reviewed for impacts related to transportation and traffic and would be required to address any potential impacts with mitigation.

Because the number of construction workers is relatively low and public transportation access is limited at the site, the proposed project is not expected to increase public transit use and impacts would be less than significant. The projects listed in Table 21 would occur in areas with similarly low levels of public transportation service and are therefore not anticipated to have high demand for public transportation services. Any development projects would be reviewed for impacts related to public transportation services and would be required to address any potential impacts with mitigation.

Because the proposed project does not include construction or operations that would affect alternative transportation plans, policies, or programs, there would be no impact on these resources, which precludes the proposed project from cumulatively contributing impacts to these resources.

4.2.2.8.1 Conclusion

Based on these analyses, it is concluded that the proposed project and projects listed in Table 21 would not have cumulatively considerable impacts related to traffic and transportation.

5 Other Required Analyses

5.1 Unavoidable Significant Impacts

As required by CEQA Guidelines Section 15126.2(b), an EIR must describe any significant impacts that cannot be avoided, including those impacts that can be mitigated but not reduced to a less-than-significant level. Sections 3 and 4 of this DEIR describe the potential environmental impacts of the proposed project and recommend mitigation measures to reduce impacts, where feasible. As presented in Sections 3.1 and 3.5, operation of the proposed project would result in exceedances of air quality and GHG thresholds, respectively. These impacts are considered significant and unavoidable.

5.2 Significant Irreversible Environmental Changes

Pursuant to Section 15126.2(c) of the CEQA Guidelines, an EIR must consider any significant irreversible environmental changes that would be caused by the proposed project should it be implemented. Section 15126.2(c) of the CEQA Guidelines states the following:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as a highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

The proposed project would require the use of non-renewable resources, such as water, fossil fuels, and non-renewable construction materials. Resources that are committed irreversibly and irretrievably are those that would be used by a project on a long-term or permanent basis. Resources committed to the proposed project include water, fossil fuels, and non-renewable construction materials such as rock, concrete, gravel, and soils. Fossil fuels and energy would be consumed during construction and demolition activities. Fossil fuels, in the form of diesel oil and gasoline, would be used to power construction equipment and vehicles. The use of these energy resources would be irretrievable and irreversible. Non-recoverable materials and energy would be used during construction activities; the amounts consumed would be accommodated by existing supplies. Although the increase in the amount of materials and energy used would be limited and readily accommodated, these resources would nevertheless be unavailable for other uses.

5.3 Growth-inducing Impacts

The CEQA Guidelines require an EIR to discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing or facilities, either directly or indirectly, in the surrounding environment. This discussion includes an analysis of whether the proposed project would remove obstacles to population growth or trigger the construction of new community services facilities that could cause significant environmental effects. Specifically, Section 15126.2(d) of the CEQA Guidelines states the following:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

5.3.1 Direct Impacts

A project would directly induce growth if it would directly foster economic or population growth or the construction of new housing in the surrounding environment. The proposed project would result in the direct benefits related to providing a domestic source of renewable diesel to help California meet near-term GHG goals as outlined in Section 2.2. The proposed project would not result in direct economic growth outside of that analyzed as part of the proposed project description and subsequent impact analyses. The proposed project would not result in a population increase or in new housing.

5.3.2 Indirect Impacts

A project would indirectly induce growth if it would foster economic or population-expanding activities that would lead to further development by taxing existing facilities and eventually requiring the construction of new facilities. The proposed project would not result in indirect economic growth outside of that analyzed as part of the proposed project description and subsequent impact analyses. The proposed project would not result in expanding populations, tax existing facilities, or require new facilities to be constructed.

6 Alternatives

CEQA requires that an EIR present a range of reasonable alternatives to the proposed project. Alternatives were developed based on comments received during public scoping, as well as Port staff consideration. Through the alternatives analysis process, the proposed project and one other alternative were found to meet most of the objectives. In addition, CEQA requires an EIR to consider the No Project Alternative.

The following two alternatives to the proposed project were carried forward for impact analysis in this DEIR:

- Alternative 1: No Project Alternative
- Alternative 2: Reduced Project

The following alternative was considered but eliminated from the analysis presented in this DEIR:

- Expanding Contanda's Existing Tank Farm

6.1 Requirements to Analyze Alternatives

CEQA Guidelines Section 15126.6 specifically requires that an EIR present a range of reasonable alternatives to a proposed project, or to the location of a project, that could feasibly attain most of the basic project objectives, but would avoid or substantially lessen any significant effects of a project. Pursuant to CEQA Guidelines Section 15126.6(e)(2), an EIR must also include an analysis of a No Project Alternative. The No Project Alternative analyzes what would be expected to occur if the proposed project were not approved. CEQA Guidelines Section 15126.6 also requires an evaluation of the comparative merits of the alternatives. An EIR is not required to consider alternatives that are infeasible. Pursuant to CEQA Guidelines Section 15126.6 (f)(1), "among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent)." Although these factors do not present a strict limit on the scope of reasonable alternatives to be considered, they help establish the context against which "the rule of reason" is measured when determining an appropriate range of alternatives sufficient to establish and foster meaningful public participation and informed decision-making. Per CEQA Guidelines Section 15126.6(c), alternative sites that were considered but rejected for alternatives analysis as infeasible are listed, and the reason for rejection is briefly explained.

6.2 Screening and Selection Methodology

The proposed project's CEQA impact analysis showed that even after implementation of mitigation, the proposed project would result in significant and unavoidable impacts on air quality and GHG. As such, alternatives were considered to reduce potential impacts. The following sections describe the range of alternatives considered to reduce impacts.

6.3 Alternatives Considered but Eliminated from Detailed Study

One alternative was considered but rejected from detailed study because it did not reduce significant environmental impacts, did not meet objectives, or was found to be infeasible.

6.3.1 Expanding Contanda's Existing Tank Farm to Accommodate Project

Under this scenario, Contanda would expand their existing terminal at the Port Road A site to include receipt storage and distribution of renewable diesel. As discussed in Section 2, renewable diesel is a combustible product that the Port Road A facility cannot accommodate in its pipelines or tanks. If products are mixed, the products have the potential to combust. In addition, the Port Road A facility does not have enough room to construct new ASTs and piping. Having the two facilities in two different locations promotes safety by ensuring the products do not mix. In addition, the two facilities serve different customer bases and having the two separate locations simplifies business operations. Therefore, this alternative was not carried forward for analysis.

6.4 Alternatives Evaluated

The alternatives analysis only included resource areas that had the potential to cause environmental impacts. The following resource areas were found to have no impact in the IS (Appendix D) and therefore are not considered in the analysis: aesthetics; agriculture and forestry; land use; mineral resources; population and housing; public services and utilities; recreation; and water quality and hydrology.

6.4.1 Alternative 1: No Project Alternative

The No Project Alternative analyzes what would be expected to occur if the proposed project were not approved. Pursuant to CEQA Guidelines Section 15126.6(e)(2), the No Project Alternative shall "discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time the environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

The No Project Alternative assumes that a new Contanda terminal is not developed and that there would be no operations on site. Because the Port Road A facility operations are independent of the

proposed project, there would be no changes to that operation. However, as an independent project, such operations would not be analyzed as part of the No Project Alternative.

6.4.1.1 Air Quality

Air quality impacts resulting from implementation of the No Project Alternative have not been quantified; however, the No Project Alternative does not include any construction or new operations. It should be noted that, while impacts are not quantified, regional emissions would likely increase under the No Project Alternative over proposed project conditions, as the proposed project allows for distribution of renewable diesel deliveries in Northern California. Therefore, impacts of the No Project Alternative on air quality would be considered less than significant.

6.4.1.2 Biological Resources

The No Project Alternative would have no impact on biological resources because there would be no construction or operation associated with the No Project Alternative.

6.4.1.3 GHG Emissions

GHG impacts resulting from implementation of the No Project Alternative have not been quantified; however, the No Project Alternative does not include any construction or operations, so no GHG emissions are anticipated. It should be noted that, while impacts are not quantified, regional emissions would likely increase under the No Project Alternative over proposed project conditions because the proposed project allows for distribution of renewable diesel deliveries in Northern California. Therefore, impacts of the No Project Alternative on GHG would be considered less than significant.

6.4.1.4 Cultural and Historic Resources

The No Project Alternative would have no impact on cultural and historic resources because there would be no construction or operations associated with the No Project Alternative.

6.4.1.5 Geology and Soils

The No Project Alternative would have no impact on geology and soils because there would be no construction or operations associated with the No Project Alternative.

6.4.1.6 Hazards and Hazardous Materials

The No Project Alternative would have no impact on hazards or hazardous materials because there would be no construction or operation associated with the No Project Alternative.

6.4.1.7 Noise and Vibration

The No Project Alternative would not generate any short- or long-term noise impacts because there would not be any construction or operations associated with the No Project Alternative. Therefore, there would be no impacts to noise and vibration associated with the No Project Alternative.

6.4.1.8 Traffic and Transportation

The No Project Alternative would not generate any short- or long-term noise impacts, as there would not be any construction or operations associated with the No Project Alternative. Therefore, there would be no impacts to traffic and transportation associated with the No Project Alternative.

6.4.2 Alternative 2: Reduced Project Alternative

Under Alternative 2, the proposed project would operate as described but would reduce the number of train and truck trips, and eliminate vessel calls. Because reduced operations would still require the same support structures and train tracks, construction would remain the same. Reduced operations would result in less renewable diesel being delivered to the Port. As the proposed project is meeting a demand for regional renewable diesel, Alternative 2 assumes that shipments of renewable diesel may continue to come into another location in the region. However, because the location and timing are speculative, no analysis of such an operation is assumed.

6.4.2.1 Air Quality

Because construction would remain the same as the proposed project, construction emissions under Alternative 2 would not change. However, reducing truck and train trips and eliminating vessel trips would reduce SJVAPCD criteria pollutant emissions associated with Alternative 2. While not quantified, emissions from rail and associated switching activities would be reduced by about 50 to 60%, which would likely reduce emissions to below significance, resulting in less-than-significant impacts. It is important to note, however, that the proposed project would meet a demand for regional renewable diesel to reduce regionwide transportation emissions.

6.4.2.2 Biological Resources

Because construction would remain the same as the proposed project, potential impacts to biological resources associated with construction under Alternative 2 would not change. Implementation of MM-BIO-1 would address potential impacts to special-status species potentially affected by the proposed project, resulting in less-than-significant impacts. Similar to the proposed project, there would be no impacts to biological resources associated with operations.

6.4.2.3 GHG Emissions

Because construction would remain the same as the proposed project, construction emissions under Alternative 2 would not change. However, reducing truck and train trips and eliminating vessel trips would reduce SJVAPCD GHG emissions. While not quantified, emissions from rail and associated

switching activities would be reduced by about 50 to 60%. It is important to note that the proposed project would meet a demand for regional renewable diesel consistent with state LCFS plans. As previously discussed, use of renewable diesel would likely reduce overall GHG emissions in the region, especially in the short-term while more significant technologies, such as fuel cells, are developed, and more widespread use of electric vehicles is incentivized. Therefore, while project-specific GHG emissions from Alternative 2 would be expected to be less than significant, regional GHG emissions would not likely decrease in the immediate future.

6.4.2.4 Cultural and Historic Resources

Because construction would remain the same as the proposed project and operations would continue to happen at a reduced level, potential impacts to cultural and historical resources from Alternative 2 as compared to baseline conditions would be similar to the proposed project, and associated significance determinations would remain unchanged.

6.4.2.5 Geology and Soils

Because construction would remain the same as the proposed project and operations would continue to happen at a reduced level, potential impacts to geology and soils from Alternative 2 as compared to baseline conditions would be similar to the proposed project, and associated significance determinations would remain unchanged.

6.4.2.6 Hazards and Hazardous Materials

Because construction would remain the same as the proposed project and operations would continue to happen at a reduced level, potential impacts to hazards and hazardous materials from Alternative 2 as compared to baseline conditions would be similar to the proposed project, and associated significance determinations would remain unchanged.

6.4.2.7 Noise and Vibration

Because construction would remain the same as the proposed project, noise levels from construction would remain the same. Operations would continue to happen at a reduced level, thereby reducing overall noise. Impacts would be slightly less than the proposed project as compared to baseline conditions.

6.4.2.8 Traffic and Transportation

Because construction would remain the same as the proposed project, transportation and circulation from construction would be the same. Operations would continue to happen at a reduced level, thereby reducing overall traffic impacts. Impacts would be slightly less than the proposed project as compared to baseline conditions.

6.5 Comparison of Alternatives

Table 24 provides a summary comparison of the potential impacts after implementation of mitigation measures resulting from the proposed project and alternatives relative to the topics analyzed in this DEIR.

Table 24
Comparison of Potential Impacts from Proposed Project and Alternatives

	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Reduced Project
Air Quality	Significant and unavoidable	Less than significant	Less than significant
Biological Resources	Less than significant	No Impact	Less than significant
Cultural Resources	Less than significant	No Impact	Less than significant
GHG Emissions	Significant and unavoidable	Less than significant	Less than significant
Geology and Soils	Less than significant	No Impact	Less than significant
Hazards and Hazardous Materials	Less than significant	No Impact	Less than significant
Noise	Less than significant	No Impact	Less than significant
Traffic and Transportation	Less than significant	No Impact	Less than significant

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Appendix A
List of Preparers

List of Preparers

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Appendix B
Notice of Preparation

October 2018
Contanda Renewable Diesel Bulk Liquid Terminal Development Project

Notice of Preparation

Prepared for
Port of Stockton
2201 West Washington Street
Stockton, California 95203

Prepared by
Anchor QEA, LLC
130 Battery Street, Suite 400
San Francisco, California 94111

Project Number: 160377-01.06

To: **All Agencies, Interested Parties, and Individuals**

Subject: **Notice of Preparation of an Environmental Impact Report**

Notice is being given that the Port of Stockton will be preparing a Focused Environmental Impact Report for the following project:

Contanda Renewable Diesel Bulk Liquid Terminal Development Project

We transmit this Notice of Preparation for review in accordance with the California Environmental Quality Act Guidelines, Article 7, Sections 15086 and 15087; and California Public Resources Code Section 21153. Please submit your comments, concerns, suggestions for mitigation measures and alternatives, and any other pertinent information that may enable us to prepare a comprehensive and meaningful Environmental Impact Report for the project.

Please submit your comments to Jason Cashman, Port of Stockton Environmental and Regulatory Affairs Manager, by email to jcashman@stocktonport.com or by mail to the following address:

Jason Cashman
Environmental and Regulatory Affairs Manager
Port of Stockton
2201 West Washington Street
Stockton, California 95203

Comment letters must be postmarked by November 2, 2018. If you have any questions, please contact Mr. Cashman by email or postal mail (above) or by phone at 209-946-0246.

1 Project Overview

This Notice of Preparation (NOP) has been prepared to inform responsible and trustee agencies, public agencies, and the public that the Port of Stockton (Port), as the Lead Agency under the California Environmental Quality Act (CEQA), has independently determined that there are potential significant environmental impacts associated with the proposed Contanda Renewable Diesel Bulk Liquid Terminal Development Project (hereafter referred to as the proposed project) and an Environmental Impact Report (EIR) is required. The project site is located at the southeast corner of Port Road 13 and Port Road H at the Port in the city of Stockton, California (the City) (Figure 1).

1.1 Project Summary

Contanda Terminals, LLC, (Contanda) proposes to develop a new bulk liquid terminal at the Port to receive, store, and transfer renewable diesel, a diesel product made from renewable resources. As part of the proposed project, Contanda would enter into a 15-year lease with five 5-year extension options with the Port and would construct sixteen aboveground storage tanks (ASTs) of varying capacity at a vacant parcel at the Port. Following construction, Contanda would receive renewable diesel by rail and transfer it to ASTs for storage. Product would then be transferred from ASTs to truck for deliveries to the local market. The proposed project would also include construction of secondary containment, truck racks, and pumps and piping to transfer liquids between the new ASTs, rail cars, and trucks.

1.2 Project Objectives

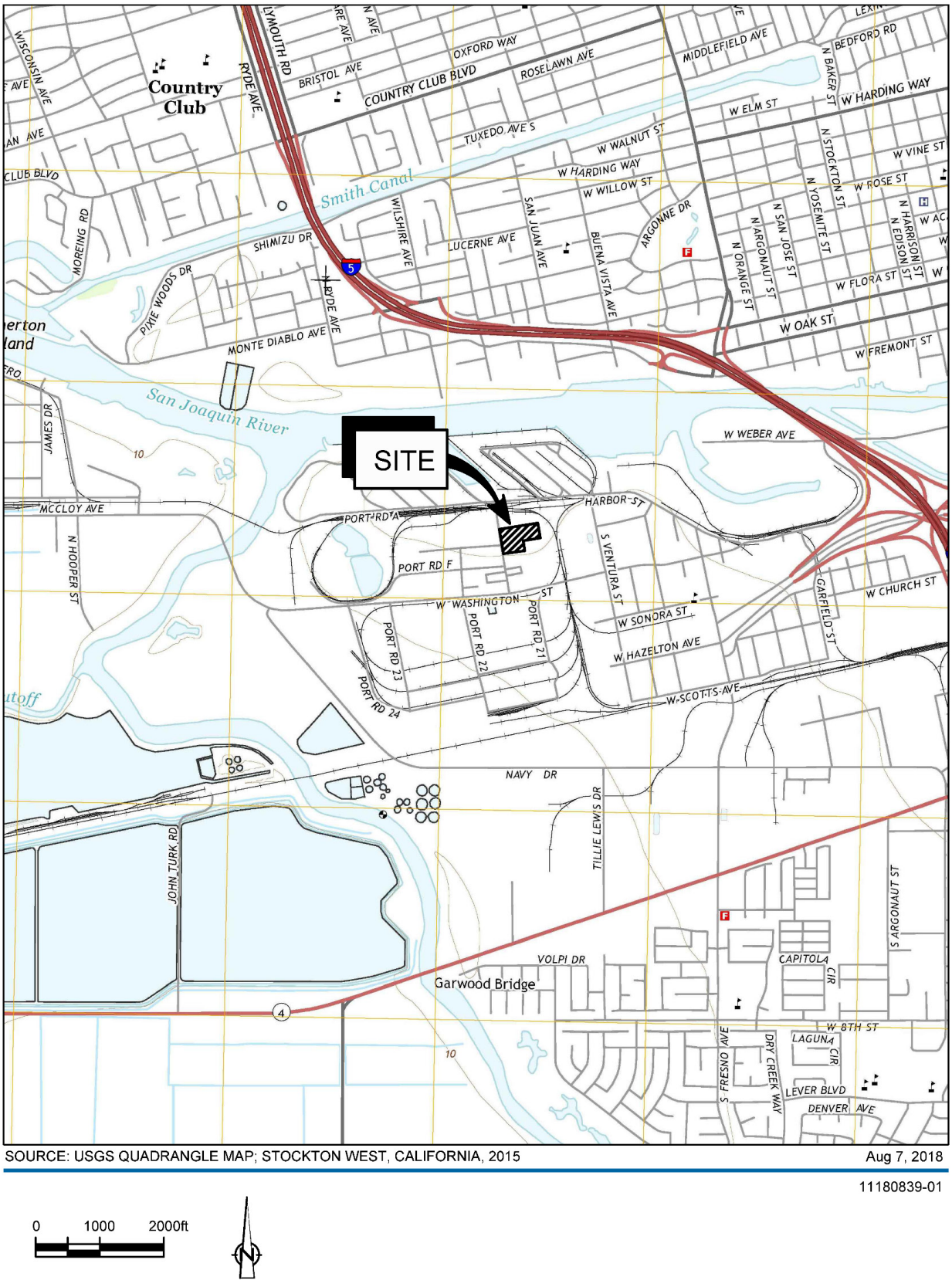
The proposed project's goal is to develop a new bulk liquid terminal to distribute renewable diesel to support broader California low-carbon fuel standard goals for lower-emitting fuels. To accomplish this goal, the following key project objectives must be accomplished:

- Provide a facility capable of accommodating and receiving rail cars of renewable diesel and loading trucks for distribution to the northern California market
- Optimize the use of Port land to develop bulk liquid storage facilities to promote safe and efficient shipment and storage of energy products

1.3 Project Setting

1.3.1 Regional Setting

The proposed project is located within the City's urban core, which is characterized by a mix of heavy industrial uses with limited landscape features, older residential neighborhoods, neighborhood commercial shopping centers, and a variety of other commercial and industrial parcels.



Source: GHD 2018

ANCHOR QEA

Figure 1
Site Location

Notice of Preparation
Contanda Renewable Diesel Bulk Liquid Terminal Development Project

In the area surrounding the project site, the Port leases property for a variety of industrial uses, characterized by the presence of storage tanks, maritime terminals, cement and grain silos, railroad facilities, large storage buildings, and stockpiles of various commodities. The City's 2035 General Plan (City 2007) designates the project site for industrial use, and the zoning classification of the project site and surrounding parcels is Port or Industrial, General.

1.3.2 Project Setting

The project site consists of a parcel of vacant land located at the Port. The project site was part of a U.S. government facility sometime between 1940 and 1963. During that time, several buildings were located on the eastern portion of the project site and one building was located in the southwestern corner of the site. All structures were removed after 1963 and the site has been used as parking and storage for various vessels and vehicles since that time. The nearest surface water body to the project site is the Stockton Deep Water Ship Channel (San Joaquin River), located approximately 1,000 feet northwest, north, and northeast of the project site.

In addition to the proposed project site, Contanda currently leases property at Port Road A from the Port. The Port Road A site encompasses approximately 2.6 acres along with an easement granted by the Port for an aboveground pipeline corridor running from the southerly line of Port Road C along the centerline of the existing pipeline support trestle to Port Wharf No. 8. The Port Road A facility will be discussed in the Draft EIR due to some overlaps in rail operations, as discussed further in Section 1.3.3.

1.3.3 Project Elements and Operations

The proposed project is designed to receive, store and ship renewable diesel. Renewable diesel is a National Fire Protection Association Class IIIA combustible liquid which the Port A facility cannot store due to inadequate spacing between the tanks.

In 2006, California adopted the Global Warming Solutions Act (also known as Assembly Bill [AB] 32), which aims to reduce greenhouse gas (GHG) emissions in California to 1990 levels by 2020. Under AB 32, the California Air Resources Board (ARB) has developed several transportation-related measures to achieve AB 32 goals, including a clean fuels standard known as the Low Carbon Fuel Standard (LCFS). California's LCFS, adopted in 2009, is a performance-based standard requiring petroleum refiners and other fuel providers to reduce the carbon-intensity of transportation fuels used in California by 10% by 2020 (Promotum 2015). The standard also requires substitutes for fossil fuels that demonstrate lower lifecycle GHG emissions than the fuels they replace. Ethanol, biodiesel, and renewable diesel all serve as alternative pathways that reduce the levels of GHG emissions, depending on their source and production. Much like biodiesel, renewable diesel is made from non-petroleum resources such as natural fats, vegetable oils, and greases. However, unlike biodiesel, renewable diesel is processed similar to the way petroleum diesel is produced and is chemically the

same as petroleum diesel. Therefore, it burns cleaner than biodiesel. Because it has the same chemical structure as petroleum diesel, renewable diesel can be used in engines that are designed to run on conventional diesel fuel, and no blending is required.

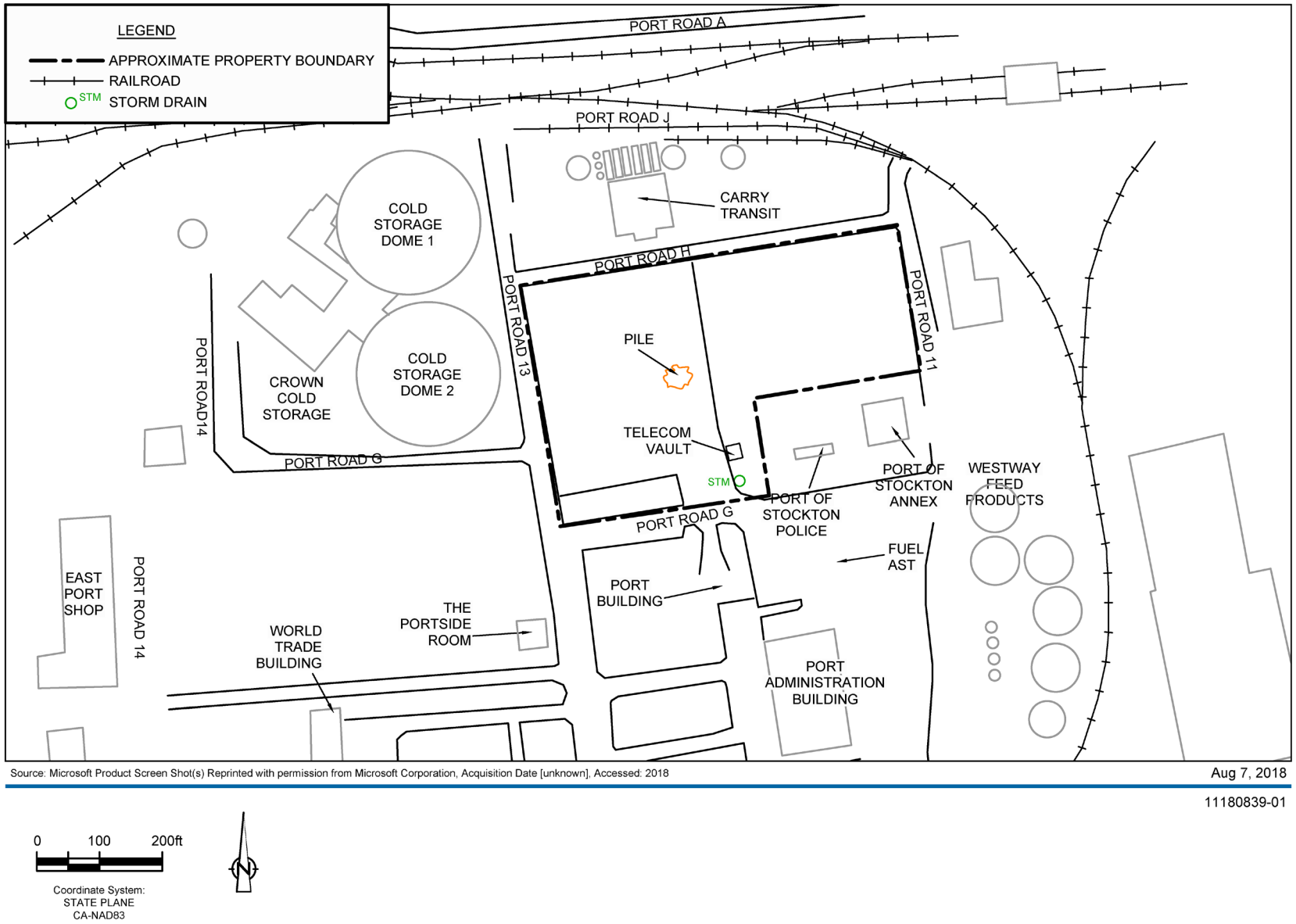
As shown in Figure 2, Contanda would construct 16 ASTs, 10 tanks with a maximum of 20,000 barrels and six tanks with a maximum of 30,000 barrels, all of which would require secondary containment. The 20,000-barrel tanks would be 60 feet in diameter by 50 feet in height and the 30,000-barrel tanks would be 60 feet in diameter by 60 feet in height. All tanks would have a fixed roof and would be atmospherically vented. The proposed project would also include constructing a new truck gate and four new truck racks. New pumps and piping would be installed to facilitate bulk liquid transfers between the new ASTs, truck racks, and rail siding.

Contanda would receive renewable diesel via manifest rail. Rail cars would be unloaded at the Port A terminal and pumped through a new aboveground pipeline connecting the Port A rail siding to the new ASTs. Manifest rail refers to trains made up of mixed rail cars (e.g., boxcars and tank cars). When individual rail cars or small groups of rail cars are shipped by manifest rail, they need to wait for additional cars to collect before travelling to a destination. Shipments sent by manifest rail are often coupled and uncoupled to other trains at various points along their trip. After being pumped to the proposed project site, product would then be stored in the new ASTs. Products would then be pumped into trucks through on-site truck racks for distribution from the terminal. The facility would operate 24 hours a day, 7 days a week and would require a total of 20 employees.

The proposed project's operational throughput is shown in Table 1.

Table 1
Proposed Project Throughput

	Proposed Project (2020)
Total Tank Capacity	15,960,000 gallons
Number of Tanks	16
Annual Rail Cars	3,600
Annual Truck Trips	13,200



Source: GHD 2018

ANCHOR QEA

Figure 2
Site Plan

Notice of Preparation
Contanda Renewable Diesel Bulk Liquid Terminal Development Project

2 Proposed CEQA Analysis

2.1 CEQA Baseline

Section 15125 of the CEQA Guidelines requires that an EIR include a description of the physical environmental conditions in the vicinity of the proposed project as they exist at the time the NOP is published, or if no NOP is published, at the time the environmental analysis is commenced, from both a local and regional perspective. These environmental conditions are referred to as the environmental setting. Further, Section 15125(a) of the CEQA Guidelines states that "the environmental setting normally constitutes the baseline physical conditions by which a Lead Agency determines whether an impact is significant." The CEQA baseline is the set of conditions that prevailed at the time this NOP is circulated. As discussed, the project site is currently vacant; therefore, there are no operations associated with the CEQA baseline.

2.2 Alternatives

According to Section 15126.6 of the CEQA Guidelines, an EIR need only examine in detail those alternatives that could feasibly meet most of the basic objectives of the proposed project. The purpose of the proposed project is to provide a facility to store and transfer renewable diesel. The following alternatives are currently being considered for further analysis in the EIR.

2.2.1 No Project Alternative

The No Project Alternative, which is required by CEQA, represents what would reasonably be expected to occur in the foreseeable future if the proposed project were not approved. Under this alternative, no new developments would be constructed at the project site; therefore, there would be no operations. Under this scenario, the Port could not preclude future development on the site, but such operations are speculative at this point.

2.2.2 Reduced Project Alternative

The Reduced Project Alternative includes full buildout of the project site, but with a reduced number of tanks constructed and therefore reduced operations. Under this alternative, a maximum of 10 tanks would be constructed.

2.3 Anticipated Project Approvals and Permits

The approvals or permits that could be required for the proposed project are anticipated to include, but not be limited to, the following actions by the identified agencies:

- Stockton Building Department: approval of mechanical, electrical, demolition, and building permits
- Stockton Fire Department: approval of fire protection system

- National Pollutant Discharge Elimination System Construction Stormwater General Permit: required for any project involving greater than 1 acre of grading

3 References

City (City of Stockton), 2007. *City of Stockton 2035 General Plan*. Available at: http://www.stocktongov.com/government/departments/communityDevelop/cdPlanGen.html.

Promotum, 2015. *California's Low Carbon Fuel Standard: Evaluation of the Potential to Meet and Exceed the Standards*. February 2, 2015. Available at: http://www.ucsusa.org/sites/default/files/attach/2015/02/California-LCFS-Study.pdf

November 2018
Contanda Renewable Diesel Bulk Liquid Terminal Development Project

Supplemental Notice of Preparation

Prepared for
Port of Stockton
2201 West Washington Street
Stockton, California 95203

Prepared by
Anchor QEA, LLC
130 Battery Street, Suite 400
San Francisco, California 94111

Project Number: 160377-01.06

To: **All Agencies, Interested Parties, and Individuals**

Subject: **Supplemental Notice of Preparation of an Environmental Impact Report**

Supplemental notice is being given that the Port of Stockton (Port) will be preparing a Focused Environmental Impact Report (EIR) for the following project:

Contanda Renewable Diesel Bulk Liquid Terminal Development Project

Previous Document: On October 3, 2018, the Port issued the original Notice of Preparation (NOP) to notice preparation of the aforementioned project in accordance with the California Environmental Quality Act Guidelines, Article 7, Sections 15086 and 15087; and California Public Resources Code Section 21153. During development of the Draft EIR, vessel calls were added as a transportation unit to the proposed project. Therefore, the October 2018 NOP is being supplemented to include these proposed project changes.

Public Scoping: An additional 30-day period is being provided during which agencies and interested parties may submit additional comments on topics to be addressed in the Draft EIR. All comments previously submitted to the Port during the original scoping process will be considered in the Draft EIR, and there is no need to resubmit those comments. Please submit your comments, concerns, suggestions for mitigation measures and alternatives, and any other pertinent information that may enable us to prepare a comprehensive and meaningful EIR for the project.

Please submit your comments to Jason Cashman, Port of Stockton Environmental and Regulatory Affairs Manager, by email to jcashman@stocktonport.com or by mail to the following address:

Jason Cashman
Environmental and Regulatory Affairs Manager
Port of Stockton
2201 West Washington Street
Stockton, California 95203

Comment letters must be postmarked by December 26, 2018. If you have any questions, please contact Mr. Cashman by email or postal mail (above) or by phone at 209-946-0246.

1 Project Overview

This Supplemental Notice of Preparation (NOP) has been prepared to inform responsible and trustee agencies, public agencies, and the public that the Port of Stockton (Port), as the Lead Agency under the California Environmental Quality Act (CEQA), has independently determined that there are potential significant environmental impacts associated with the proposed Contanda Renewable Diesel Bulk Liquid Terminal Development Project (hereafter referred to as the proposed project) and an Environmental Impact Report (EIR) is required. The project site is located at the southeast corner of Port Road 13 and Port Road H at the Port in the city of Stockton, California (the City) (Figure 1).

1.1 Project Summary

Contanda Terminals LLC (Contanda) proposes to develop a new bulk liquid terminal at the Port to receive, store, and transfer renewable diesel, a diesel product made from renewable resources. As part of the proposed project, Contanda would enter into a 15-year lease with five 5-year extension options with the Port and would construct sixteen aboveground storage tanks (ASTs) of varying capacity at a vacant parcel at the Port. Following construction, Contanda would receive renewable diesel by rail and marine vessels and transfer it to ASTs for storage. Product would then be transferred from ASTs to truck for deliveries to the local market. The proposed project would also include construction of secondary containment, truck racks, and pumps and piping to transfer liquids between the new ASTs, rail cars, vessels, and trucks.

1.2 Project Objectives

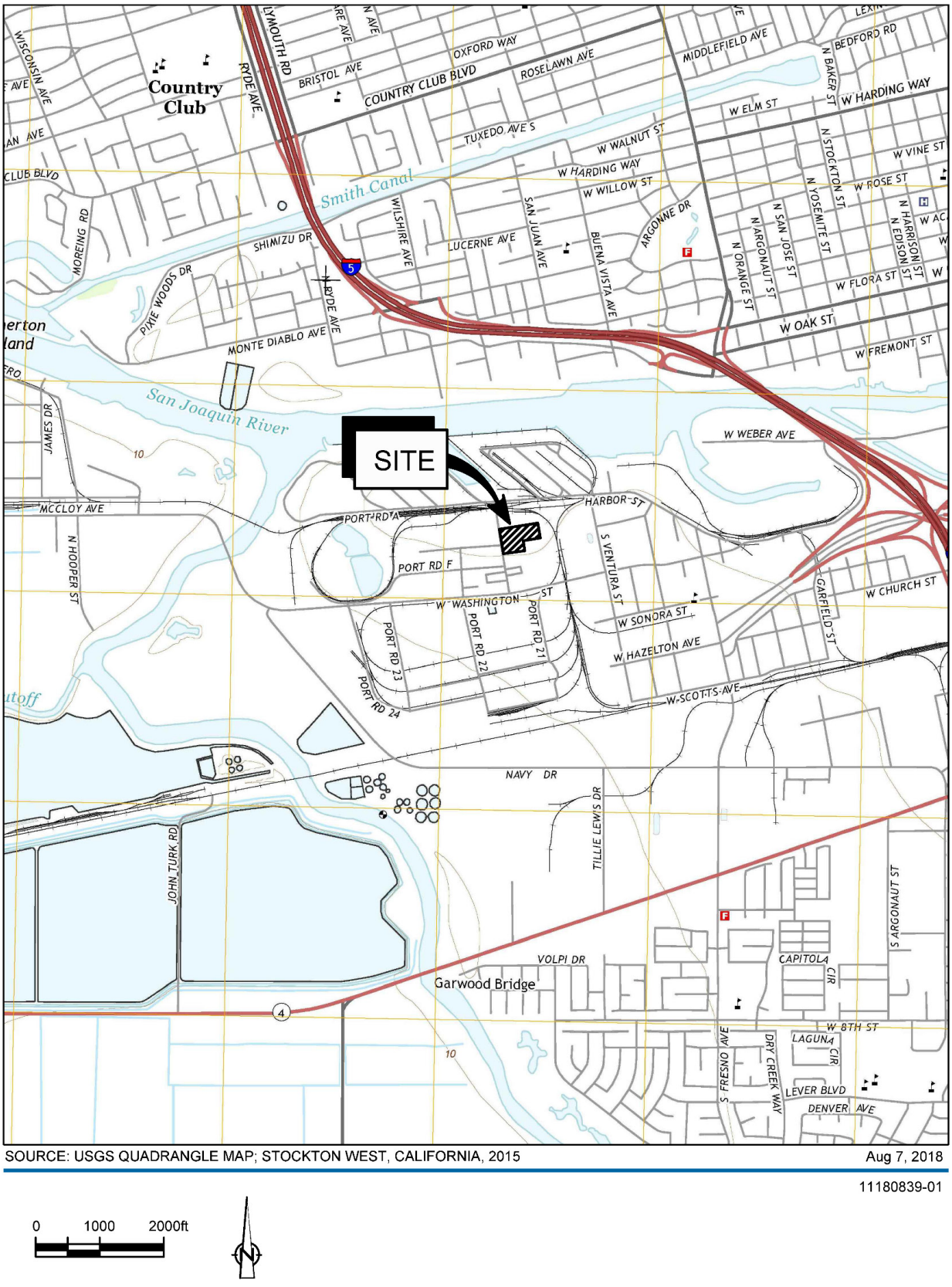
The proposed project's goal is to develop a new bulk liquid terminal to distribute renewable diesel to support broader California low-carbon fuel standard goals for lower-emitting fuels. To accomplish this goal, the following key project objectives must be accomplished:

- Provide a facility capable of accommodating and receiving renewable diesel for distribution to the northern California market
- Optimize the use of Port land to develop bulk liquid storage facilities to promote safe and efficient shipment and storage of energy products consistent with state low carbon fuel goals

1.3 Project Setting

1.3.1 Regional Setting

The proposed project is located within the City's urban core, which is characterized by a mix of heavy industrial uses with limited landscape features, older residential neighborhoods, neighborhood commercial shopping centers, and a variety of other commercial and industrial parcels.



SOURCE: USGS QUADRANGLE MAP; STOCKTON WEST, CALIFORNIA, 2015 Aug 7, 2018

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0 1000 2000ft

Source: GHD 2018

ANCHOR QEA

Figure 1
Site Location

Supplemental Notice of Preparation
Contanda Renewable Diesel Bulk Liquid Terminal Development Project

In the area surrounding the project site, the Port leases property for a variety of industrial uses, characterized by the presence of storage tanks, maritime terminals, cement and grain silos, railroad facilities, large storage buildings, and stockpiles of various commodities. The City's 2035 General Plan (City 2007) designates the project site for industrial use, and the zoning classification of the project site and surrounding parcels is Port or Industrial, General.

1.3.2 Project Setting

The project site consists of a parcel of vacant land located at the Port. The project site was part of a U.S. government facility sometime between 1940 and 1963. During that time, several buildings were located on the eastern portion of the project site and one building was located in the southwestern corner of the site. All structures were removed after 1963 and the site has been used as parking and storage for various vessels and vehicles since that time. The nearest surface water body to the project site is the Stockton Deep Water Ship Channel (San Joaquin River), located approximately 1,000 feet northwest, north, and northeast of the project site.

In addition to the proposed project site, Contanda currently leases property at Port Road A from the Port. The Port Road A site encompasses approximately 2.6 acres along with an easement granted by the Port for an aboveground pipeline corridor running from the southerly line of Port Road C along the centerline of the existing pipeline support trestle to Port Wharf No. 8.

1.3.3 Project Elements and Operations

The proposed project is designed to receive, store and ship renewable diesel. Renewable diesel is a National Fire Protection Association Class IIIA combustible liquid which the Port A facility cannot store due to inadequate spacing between the tanks. The two project sites will operate independently and serve different customers.

In 2006, California adopted the Global Warming Solutions Act (also known as Assembly Bill [AB] 32), which aims to reduce greenhouse gas (GHG) emissions in California to 1990 levels by 2020. Under AB 32, the California Air Resources Board (ARB) has developed several transportation-related measures to achieve AB 32 goals, including a clean fuels standard known as the Low Carbon Fuel Standard (LCFS). California's LCFS, adopted in 2009, is a performance-based standard requiring petroleum refiners and other fuel providers to reduce the carbon-intensity of transportation fuels used in California by 10% by 2020 (Promotum 2015). The standard also requires substitutes for fossil fuels that demonstrate lower lifecycle GHG emissions than the fuels they replace. Ethanol, biodiesel, and renewable diesel all serve as alternative pathways that reduce the levels of GHG emissions, depending on their source and production. Much like biodiesel, renewable diesel is made from non-petroleum resources such as natural fats, vegetable oils, and greases. However, unlike biodiesel, renewable diesel is processed similar to the way petroleum diesel is produced and is chemically the same as petroleum diesel. Therefore, it burns cleaner than biodiesel. Because it has the same

chemical structure as petroleum diesel, renewable diesel can be used in engines that are designed to run on conventional diesel fuel, and no blending is required.

As shown in Figure 2, Contanda would construct 16 ASTs, 10 tanks with a maximum of 20,000 barrels and six tanks with a maximum of 30,000 barrels, all of which would require secondary containment. The 20,000-barrel tanks would be 60 feet in diameter by 50 feet in height and the 30,000-barrel tanks would be 60 feet in diameter by 60 feet in height. All tanks would have a fixed roof and would be atmospherically vented. The proposed project would also include constructing a new truck gate and four new truck racks. New pumps and piping would be installed to facilitate bulk liquid transfers between the new ASTs, truck racks, vessels, and rail siding.

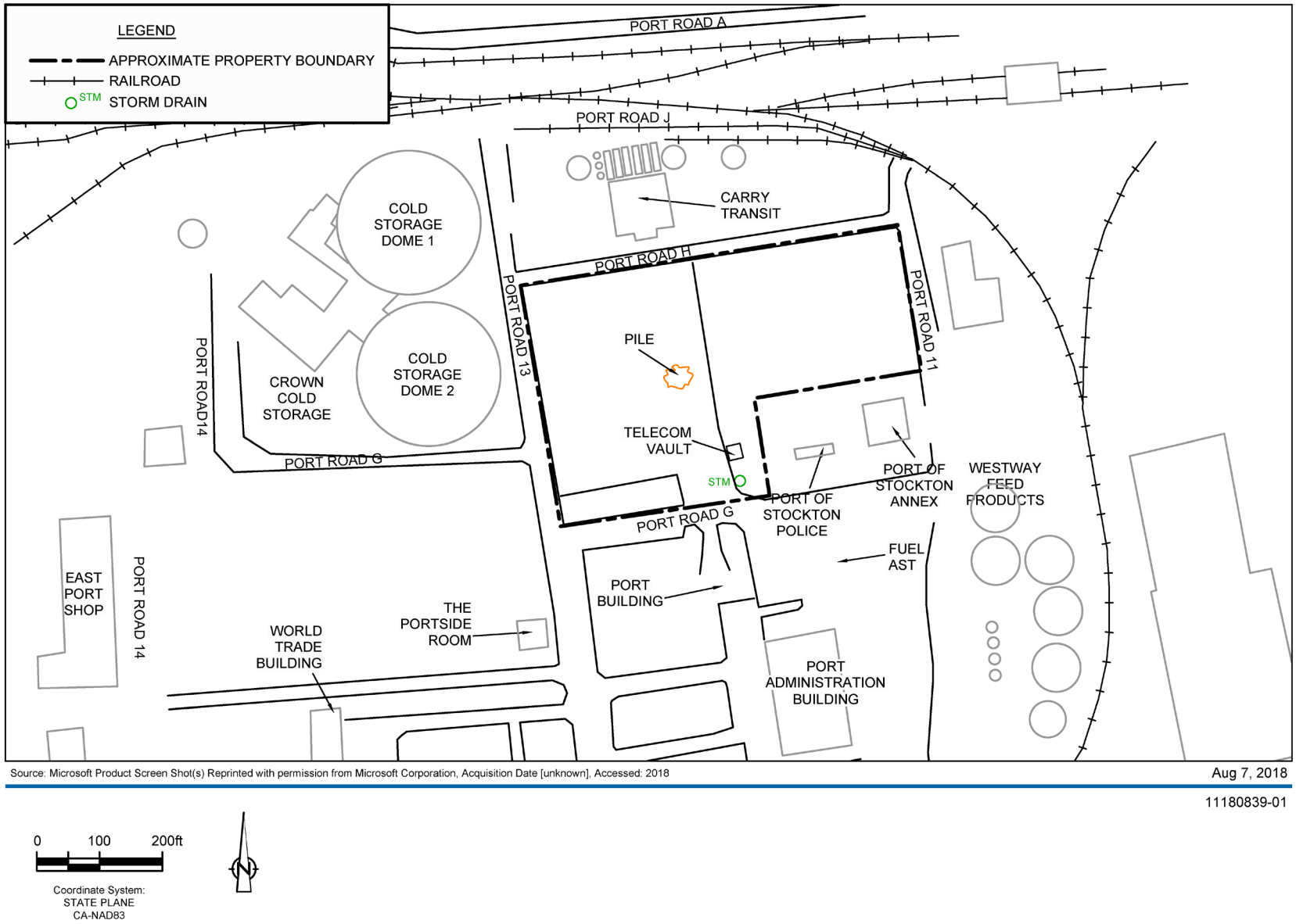
Contanda would receive renewable diesel via manifest rail[1] and marine vessels. Rail cars would be unloaded at the Port A terminal and pumped through a new aboveground pipeline connecting the Port A rail siding to the new ASTs. Marine vessels would berth at Wharf 8. No wharf upgrades are required; however, Contanda would construct a new pipeline to connect Wharf 8 to the new terminal. After being pumped to the proposed project site, product would be stored in the new ASTs. Products would then be pumped into trucks through on-site truck racks for distribution from the terminal. The facility would operate 24 hours a day, 7 days a week and would require a total of 20 employees.

The proposed project's operational throughput is shown in Table 1.

Table 1
Proposed Project Throughput

	Proposed Project (2020)
Total Tank Capacity	15,960,000 gallons
Number of Tanks	16
Annual Rail Cars	3,600
Annual Marine Vessels	12
Annual Truck Trips	17,456

[1] Manifest rail refers to trains made up of mixed rail cars (e.g., boxcars and tank cars).



Source: GHD 2018

ANCHOR QEA

Figure 2
Site Plan

Supplemental Notice of Preparation
Contanda Renewable Diesel Bulk Liquid Terminal Development Project

2 Proposed CEQA Analysis

2.1 CEQA Baseline

Section 15125 of the CEQA Guidelines requires that an EIR include a description of the physical environmental conditions in the vicinity of the proposed project as they exist at the time the NOP is published, or if no NOP is published, at the time the environmental analysis is commenced, from both a local and regional perspective. These environmental conditions are referred to as the environmental setting. Further, Section 15125(a) of the CEQA Guidelines states that "the environmental setting normally constitutes the baseline physical conditions by which a Lead Agency determines whether an impact is significant." The CEQA baseline is the set of conditions that prevailed at the time this NOP is circulated. As discussed, the project site is currently vacant; therefore, there are no operations associated with the CEQA baseline.

2.2 Alternatives

According to Section 15126.6 of the CEQA Guidelines, an EIR need only examine in detail those alternatives that could feasibly meet most of the basic objectives of the proposed project. The purpose of the proposed project is to provide a facility to store and transfer renewable diesel. The following alternatives are currently being considered for further analysis in the EIR.

2.2.1 No Project Alternative

The No Project Alternative, which is required by CEQA, represents what would reasonably be expected to occur in the foreseeable future if the proposed project were not approved. Under this alternative, no new developments would be constructed at the project site; therefore, there would be no operations. Under this scenario, the Port could not preclude future development on the site, but such operations are speculative at this point.

2.2.2 Reduced Project Alternative

The Reduced Project Alternative includes full buildout of the project site, but with a reduced number of tanks constructed and therefore reduced operations. Under this alternative, a maximum of 10 tanks would be constructed.

2.2.3 Marine Vessels Only

The Marine Vessel Only Alternative includes all product shipped to the Port by marine vessels (no rail). Under this alternative, trucks would continue to ship product from the site to the California market.

2.3 Anticipated Project Approvals and Permits

The approvals or permits that could be required for the proposed project are anticipated to include, but not be limited to, the following actions by the identified agencies:

- Stockton Building Department: approval of mechanical, electrical, demolition, and building permits
- Stockton Fire Department: approval of fire protection system
- National Pollutant Discharge Elimination System Construction Stormwater General Permit: required for any project involving greater than 1 acre of grading

3 References

City (City of Stockton), 2007. *City of Stockton 2035 General Plan*. Available at: http://www.stocktongov.com/government/departments/communityDevelop/cdPlanGen.html.

Promotum, 2015. *California's Low Carbon Fuel Standard: Evaluation of the Potential to Meet and Exceed the Standards*. February 2, 2015. Available at: http://www.ucsusa.org/sites/default/files/attach/2015/02/California-LCFS-Study.pdf

Appendix C
Comments Received on the Notice of Preparation

Public Involvement

This section provides a summary of public outreach. The Port considers public participation an integral part of the environmental process, and public involvement and outreach was a chief component of the DEIR development. Public participation ensures that there is two-way communication between the public and decision makers and that public concerns and input are considered in the final decision. The process of public participation assumes that the public have the right to know about the activities of public agencies and to participate in those activities if they so choose. It also assumes that agencies can benefit from public input and thereby make better decisions.

Notice of Preparation

Public Comment

The following four comment letters were received during the public comment periods for the Notices of Preparation:

- California Department of Transportation
- Central Valley Regional Water Quality Control Board
- California Native American Heritage Commission (two letters)

Copies of comment letters received are included in the following pages. All comments were considered in preparation of the DEIR.

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

Edmund G. Brown Jr., Governor

October 12, 2018

Jason Cashman
Port of Stockton
2201 W. Washington Street
Stockton, CA 95203

RE: SCH#2018102008 Contanda Renewable Diesel Bulk Liquid Terminal Development Project, San Joaquin County

Dear Mr. Cashman:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
   a. A brief description of the project.
   b. The lead agency contact information.
   c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
   d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Sharaya.Souza@nahc.ca.gov.

Sincerely,

for

Sharaya Souza
Staff Services Analyst

cc: State Clearinghouse

DEPARTMENT OF TRANSPORTATION
P.O. BOX 2048 STOCKTON, CA 95201
(1976 E. CHARTER WAY/1976 E. DR. MARTIN
LUTHER KING JR. BLVD. 95205)
TTY: California Relay Service (800) 735-2929
PHONE (209) 941-1921
FAX (209) 948-7194

Serious Drought!
Help save water!

October 11, 2018

10-SJ-5-PM 027.517
SCH#2018102008
Contanda Renewable Diesel
Bulk Liquid Terminal
Development Project

Jason Cashman
Port of Stockton
2201 W. Washington Street
Stockton, CA 95203

Dear Mr. Cashman:

The California Department of Transportation appreciates the opportunity to have the proposed bulk liquid terminal at the port to receive, store, and transfer renewable diesel. The Department has the following comments:

Caltrans encourages employees to use alternate modes of transportation to reach the work site, such as carpooling or public transportation.

If you have any questions or would like to discuss our comments in more detail, please contact Nicholas Fung at (209) 948-7190 or myself at (209) 941-1921.

Sincerely,

Nicholas Fung

FOR
TOM DUMAS, CHIEF
OFFICE OF METROPOLITAN PLANNING

California Water Boards

Edmund G. Brown Jr.
Governor

Matthew Rodriquez
Secretary for
Environmental Protection

Central Valley Regional Water Quality Control Board

25 October 2018

Jason Cashman
Port of Stockton
2201 West Washington Street
Stockton, CA 95203

CERTIFIED MAIL
7018 1830 0001 0062 2636

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, CONTANDA RENEWABLE DIESEL BULK LIQUID TERMINAL DEVELOPMENT PROJECT, SCH# 2018102008, SAN JOAQUIN COUNTY

Pursuant to the State Clearinghouse's 3 October 2018 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environment Impact Report* for the Contanda Renewable Diesel Bulk Liquid Terminal Development Project, located in San Joaquin County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources

Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at:
http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

> *Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.*
>
> *This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.*

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit

requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure

[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Wildlife for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements – Discharges to Waters of the State

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver) R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/for_growers/apply_coalition_group/index.shtml or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.

2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100**. Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently $1,084 + $6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water*

(Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit3.shtml

If you have questions regarding these comments, please contact me at (916) 464-4812 or Jordan.Hensley@waterboards.ca.gov.

Jordan Hensley
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

STATE OF CALIFORNIA Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

December 3, 2018

Jason Cashman
Port of Stockton
2201 W. Washington Street
Stockton, CA 95203

RE: SCH# 2018102008 Contanda Renewable Diesel bulk Liquid Terminal Development Project, San Joaquin County

Dear Mr. Cashman:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
    a. A brief description of the project.
    b. The lead agency contact information.
    c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
    d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
    a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
    a. Alternatives to the project.
    b. Recommended mitigation measures.
    c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
    a. Type of environmental review necessary.
    b. Significance of the tribal cultural resources.
    c. Significance of the project's impacts on tribal cultural resources.
    d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
    a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
    b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Sharaya.Souza@nahc.ca.gov.

Sincerely,

for

Sharaya Souza
Staff Services Analyst

cc: State Clearinghouse

Appendix D
Initial Study

Environmental Checklist

1. **Project Title:** Contanda Renewable Diesel Liquid Bulk Terminal
2. **Lead Agency Name and Address:** Port of Stockton
3. **Contact Person and Phone Number:** Jason Cashman
4. **Project Location:** Port of Stockton
5. **Project Sponsor's Name and Address:** Port of Stockton
   713 West Luce Street
   Stockton, CA 95203
6. **General Plan Designation:** Port or Industrial, General
7. **Zoning:** Port (PT)
8. **Name of Prior CEQA Document:** N/A
9. **Description of Project,**

   Contanda Terminals, LLC, (Contanda) proposes to develop a new bulk liquid terminal at the Port to receive, store, and transfer renewable diesel, a diesel product made from renewable resources. As part of the proposed project, Contanda would enter into a 15-year lease with five 5-year extension options with the Port and would construct sixteen aboveground storage tanks (ASTs) of varying capacity at a vacant parcel at the Port. Following construction, Contanda would receive renewable diesel by rail and ship and transfer it to ASTs for storage. Product would then be transferred from ASTs to truck for deliveries to the local Northern California market. The proposed project would also include construction of secondary containment, truck racks, and pumps and piping to transfer liquids between the new ASTs, vessels. rail cars, and trucks

10. **Surrounding Land Uses and Setting:**

    Industrial port uses to the north and east. Agricultural land to the south and west.

11. **Other Public Agencies Whose Approval is Required:**

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages

.

☐ Aesthetics	☐ Agricultural and Forestry	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology/Soils
☒ Greenhouse Gas Emissions	☒ Hazards and Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☒ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☒ Transportation/Traffic	☐ Utilities/Service Systems	☒ Mandatory Findings of Significance

Determination

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is require

I. Aesthetics	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	☐	☐	☐	☒
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☐	☒

A: Would the project have a substantial adverse effect on a scenic vista?

No Impact. The existing visual character in the study area is not considered scenic, nor are there any identified scenic vistas within the project area. Therefore, there would be no impact to scenic vistas.

B: Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?

No Impact. The proposed project would not affect any rock outcroppings or historic buildings. There are no designated state scenic highways within the project area, and the visual character of the study area (industrial Port uses) is consistent with the proposed project. Therefore, there would be no impact to scenic resources.

C: Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

No Impact. The visual character of the study area would not be changed by the proposed project. The most prominent permanent visual change resulting from the proposed project would be construction of the tanks and new elevated pipelines. Although partially visible from surrounding parcels and vicinity roadways, the tanks and pipelines would be consistent with the existing visual character of the site and its surroundings, which includes other similarly sized tanks, elevated pipelines, and other industrial features. Short-term construction activities would be obscured from view by on-site and adjoining developments, and by trees along the Wharf 8 inlet. Truck or other vehicle traffic generated by construction would not alter the visual character of the site and surroundings, due to its location within an industrialized area.

Facility operations would not alter the visual character of the project site or its surroundings. The proposed project would result in a modest increase in trucks, rail and ship calls, and would be aesthetically similar and consistent with those of existing conditions within the industrialized area. Based on the conditions described above, there would be no impact to the existing visual character or quality of the site and its surroundings from the proposed project.

D: Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

No Impact. Any lighting required for facility construction or operation would be directed only onto the project site, would be the minimum necessary for safety purposes, and would not be visible from any residential areas or other sensitive visual receptors. No new sources of glare would be constructed. Proposed tanks would be surfaced in nonreflective or matte white finishes. Therefore, the proposed project would result in no impact to daytime or nighttime views in the study area from new sources of light or glare.

II. Agricultural and Forestry Resources	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, and forest carbon measurement methodology provided in the Forest Protocols adopted by the California Air Resources Board. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

A: Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The proposed project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. Therefore, there would be no impact.

B: Would the project conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?

No Impact. No farmland exists in the project area. The project site and surrounding parcels are zoned as Port Industrial (City 2017) and are not subject to a Williamson Act contract. Therefore, there would be no impact.

C: Would the project conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact. The proposed project would not conflict with or change any zoning or use of forest land, timberland, or timberland zoned Timberland Production. Therefore, there would be no impact.

D: Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The proposed project would not result in the conversion of forest land or timberland to non-forest use. Therefore, there would be no impact.

E: Would the project involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

No Impact. No forest or farmlands exist near the project area. Therefore, there would be no impact.

II. Air Quality	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e. Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐

A: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Potentially Significant Impact. The Project would result in increased emissions of criteria air pollutants associated with construction and terminal operations (increased product transfers) relative to baseline conditions. Emissions from operations would occur over the duration of the Project. Therefore, the Draft EIR will evaluate whether the Project would conflict with applicable air quality plans.

B: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Potentially Significant Impact. Project construction would result in combustion exhaust emissions from construction equipment and fugitive dust emissions. Project operation may result in increased emissions of criteria air pollutants associated with increased product transfers as compared to baseline levels of activity. Therefore, the Draft EIR will evaluate whether the Project would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

C: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

Potentially Significant Impact. Due to the elevated concentrations of air pollutants that currently occur in the SJVAB, the Project, in conjunction with other related projects, has the potential to make a substantial contribution to significant cumulative air quality impacts. Therefore, the Draft EIR will

evaluate whether the Project would result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment.

D: Would the project expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact. Sensitive receptors represent members of the population that are more susceptible to health impacts from air emissions. Construction activities may expose sensitive receptors to air pollution in the form of combustion exhaust and fugitive dust. Operational activities, primarily increased product transfers as compared to baseline levels of activity, may also expose sensitive receptors to increased levels of air pollution. In addition, both construction and operational activities may expose sensitive receptors to increased levels of toxic air contaminants. Therefore, the Draft EIR will evaluate whether the Project would expose sensitive receptors to substantial pollutant concentrations.

E: Would the project create objectionable odors affecting a substantial number of people?

Potentially Significant Impact. Construction activities associated with the Project could result in minor amounts of odorous compounds associated with diesel heavy equipment exhaust. These compounds would be emitted in various amounts and at various locations during construction. Odors are highest near the source and would quickly dissipate off site; any odors associated with construction would be temporary. During operations, offloading would occur through transfer of product through a closed-loop pipeline system which would reduce the potential for odors from product handling; however, odors may also be associated with diesel exhaust from trains. Therefore, this issue will be analyzed in the Draft EIR.

IV. Biological Resources	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☒	☐	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☒	☐	☐	☐

A. Would this project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Potentially Significant Impact Trees and elderberry shrubs just outside of the Contanda parcel may provide habitat to special status species, therefore biological resources will be assessed in the DEIR.

B: Would this project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Potentially Significant Impact. Because the Wharf 8 inlet is within critical habitat for green sturgeon, Delta smelt, and Central Valley DPS steelhead, as well as Pacific Salmon EFH, biological resources will be assessed in the DEIR.

C: Would this project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. There are no known wetlands within the Contanda facility parcel or within the upland Wharf 8 area proposed for improvements. In addition, no in-water work is required as part of the proposed project. The additional three ships per year would berth at existing docks that currently receive Contanda vessels or other ship calls.

D: Would this project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Potentially Significant Impact. Because the Wharf 8 inlet is within critical habitat for green sturgeon, Delta smelt, and Central Valley DPS steelhead, as well as Pacific Salmon EFH, biological resources will be assessed in the DEIR.

E: Would this project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Potentially Significant Impact. The proposed project would require tree removal and therefore may conflict with the Stockton Heritage Tree Ordinance. Biological resources will be assessed in the DEIR.

F: Would this project conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

Potentially Significant Impact. The proposed project would require tree removal and may affect biological species; therefore biological resources will be assessed in the DEIR.

V. Cultural Resources	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☒	☐	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☒	☐	☐	☐

A: Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

No Impact. No structures older than 50 years would be modified or demolished for the proposed project.

B: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Potentially Significant Impact. The proposed project includes ground disturbance and material may contain intact archaeological resources. Therefore, cultural resources will be assessed in the DEIR.

D: Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Potentially Significant Impact. The proposed project includes ground disturbance and material may contain human remains. Therefore, cultural resources will be assessed in the DEIR.

VI. Geology and Soils	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
2. Strong seismic ground shaking?	☐	☐	☐	☒
3. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
4. Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c. Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

A: Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: 1) rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42); 2) strong seismic ground shaking; 3) seismic-related ground failure, including liquefaction; or 4) landslides?

Less than Significant Impact. The project area is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, and no known surface expression of active faults is believed to cross the project site; therefore, fault rupture through the site is not anticipated.

In the event of a major earthquake, San Joaquin County could experience strong ground shaking, which has the potential to damage buildings and structures. Proposed improvements would be limited to on-site structures (tanks and pipelines, described in Section 2). Damage to these structures is possible in the event of a large earthquake. Proposed improvements would be constructed in adherence with applicable seismic standards and would not increase the potential for human injury or loss of life. This includes design of pipe and AST supports, alignments, and construction that allow for expansion and contraction and seismic restraint. Contanda has developed a *Crisis Management Plan* which includes earthquake emergency procedures (Contanda 2017). Emergency response plans have been developed for the area in consideration of potential natural disasters, which would address and minimize potential hazards during emergencies such as a large seismic event. Therefore, the proposed project would result in less-than-significant impacts related to seismic ground shaking.

Soils mapped as occurring at the project site are not notably susceptible to liquefaction, lateral spreading, expansion, or settlement. All grading would be performed in accordance with the recommended grading specifications contained in the City Grading Regulations, and the proposed improvements would be constructed in adherence with applicable seismic standards. Therefore, the proposed project is not anticipated to result in impacts related to liquefaction, lateral spreading, expansion, or settlement.

The project site does not contain any steep slopes or other features suggesting susceptibility to slope failure or landslides. The site and surrounding parcels are flat, except for the shoreline north of the Contanda facility. The shoreline contains riprap and dense vegetation which provides slope stability. In addition, the Port is responsible for the levee system and has established an annual levee monitoring and inspection program intended to determine whether reinforcement of the structural integrity of the perimeter levee is required (Stockton Port District 2012). The proposed project would not result in changes that would increase the potential for slope failure or landslides, and there would be no impact related to these hazards.

B: Would the project result in substantial soil erosion or the loss of topsoil?

No Impact. Because the project site is generally flat and largely contains previously compacted or developed surfaces, the potential for substantial soil erosion is considered minimal. Evidence of erosion was not observed on the sloped areas surrounding the project site, or elsewhere. Best management practices (BMPs) for controlling erosion would be implemented to reduce erosion of soils during construction. Topsoil that would be removed during grading or other surface preparation does not serve agricultural purposes or other valuable functions. Therefore, there would be no impact.

C: Would the project be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

No Impact. As previously discussed, the proposed project would have no effect on the potential for slope failures or landslides; soils mapped as occurring on site are not notably susceptible to liquefaction, lateral spreading, or subsidence; and there is no evidence of these geological hazards on or in proximity to the project site. All grading would be performed in accordance with the recommended grading specifications contained in the City Grading Regulations, and the proposed improvements would be constructed in adherence with applicable seismic standards. Therefore, the proposed project would have no impact related to unstable geological units or soils.

D: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No Impact. Soil types identified as occurring within the project site do not exhibit expansive properties. As part of the proposed project, site grading and surface preparation would be completed to eliminate the potential for expansion. Therefore, there would be no impact.

E: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?

No Impact. The proposed improvements would be served by the municipal sewage system, and the proposed project would not require the use of septic tanks or alternative wastewater disposal systems or affect any such systems. Therefore, there would be no impact.

F: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact. There are no known unique geological or paleontological resources in the project area. Ground disturbance would be minimal and would occur in already disturbed or developed areas. Due to its geomorphological history, the project area is not likely to contain any fossils other than invertebrate fossils that are in a re-deposited context (Additional discussion pertaining to paleontological resources is will be provided in the Cultural Resources section, assessed in the DEIR.). Therefore, there would be no impact.

VIII. Hazards and Hazardous Materials	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☒	☐	☐	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐
c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☒	☐	☐	☐
d. Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☒	☐	☐	☐
e. Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f. Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☐
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

A: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Potentially Significant Impact Because the proposed Project will receive, store, and distribute renewable diesel, hazards and hazardous materials will be assessed in the DEIR.

B: Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Potentially Significant Impact Because the proposed Project will receive, store, and distribute renewable diesel, hazards and hazardous materials will be assessed in the DEIR.

C: Would the project emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Potentially Significant Impact Because the proposed Project will receive, store, and distribute renewable diesel, hazards and hazardous materials will be assessed in the DEIR.

D: Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Potentially Significant Impact Because the proposed Project will receive, store, and distribute renewable diesel, hazards and hazardous materials will be assessed in the DEIR.

E, F: Would the project be located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area? Would the project be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?

No Impact. The project site is not located within an airport land use plan area, and the nearest airport or airstrip is located approximately 5.5 miles to the southeast. Although rail or truck transport may occur in proximity to airports, road and railways accommodate hazardous material shipments under existing conditions, and both transportation methods would occur in adherence with applicable hazardous material regulations. Therefore, the proposed project would result in no impact related to aviation, however hazards and hazardous materials will be assessed in the DEIR.

G: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Potentially Significant Impact Because the proposed Project will receive, store, and distribute renewable diesel, hazards and hazardous materials will be assessed in the DEIR.

H: Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. The project site is not within any fire hazard severity zones, and there are no wildlands or other areas susceptible to wildfire in the project area. Therefore, there would result be no impact related to wildland fires, however hazards and hazardous materials will be assessed in the DEIR.

IX. Hydrology and Water Quality	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation onsite or offsite?	☐	☐	☐	☒
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite?	☐	☐	☐	☒
e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f. Otherwise substantially degrade water quality?	☐	☐	☐	☒
g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h. Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j. Contribute to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

A: Would the project violate any water quality standards or waste discharge requirements?

No Impact. Construction activities associated with the proposed project would directly disturb soils within the Contanda facility parcel, including excavation or ground disturbance required for grading and construction. There would be no in-water work, and work within Wharf 8 or outside of the Contanda Facility parcel would be limited to the new pipeline and supporting infrastructure. The proposed project would adhere to the requirements of the NPDES Construction Stormwater General Permit to avoid significant water quality impacts during construction.

The facility will operate with active and passive spill control measures, including secondary containment and regular system inspections. In addition, Contanda has an SPCC plan for the facility c. Spill responses are also addressed in the facility's CMP, which incorporates its Emergency Action Plan (required by the Cal/OSHA regulations, Section 3220). These spill control measures would remain in place under the proposed operating conditions. As described, the secondary containment system would be modified to accommodate the proposed improvements and ensure that water quality standards are maintained. Based on the analyses presented above, the proposed project would result in no impact pertaining to water quality standards and waste discharge requirements.

B: Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

No Impact. The existing parcel and Wharf 8 area proposed for installation of the new pipeline are entirely developed with impermeable concrete and asphalt or very low permeability compacted earth. The proposed project would result in a very small increase in impermeable surface area from installation of new tanks, which would have little or no effect on groundwater recharge given the small area of effect and low permeability of existing surfaces. Under the proposed project, stormwater runoff would continue to be conveyed to either the central Port basin and discharged to the San Joaquin River or conveyed to secondary containment systems prior to discharge to the sanitary sewer or other appropriate disposal method. Therefore, there would be no impact pertaining to groundwater.

C: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on site or off site?

No Impact. The proposed project would include connections to existing drainage infrastructure. As described, stormwater runoff would continue to be conveyed to either the central Port basin and discharged to the San Joaquin River or conveyed to secondary containment systems prior to discharge to the sanitary sewer or other appropriate disposal method. There is no evidence of erosion or siltation within these or other drainage features that would serve the site, and the proposed project is unlikely to increase runoff. Any alterations to the existing drainage infrastructure and patterns on site would be designed in compliance with the 2009 *Port of Stockton Storm Water Development Standards Plan* (Port 2009). The proposed project would not result in any alteration to the course of any stream, rivers, or other waterbodies. Therefore, there would be no impact from alteration of existing drainage patterns that could cause substantial erosion or siltation.

D: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site?

No Impact. The proposed project would result in a very small increase in impermeable surface area from installation of new tanks, which would have little or no effect on drainage patterns given the small area of effect and low permeability of existing surfaces. Runoff would continue to be conveyed to the existing systems described in this section. Any alterations to the existing drainage infrastructure and patterns on site would be designed in compliance with the 2009 *Port of Stockton Storm Water Development Standards Plan* (Port 2009). There would be no in-water improvements, and improvements within the Wharf 8 area would be limited to installation of the new product pipeline. Therefore, the proposed project would result in no impacts from alteration of existing drainage patterns that could cause flooding.

E: Would the project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No Impact. The proposed project would result in a very small increase in impermeable surface area from installation of new tanks, which would have little or no effect on drainage systems given the small area of effect and low permeability of existing surfaces. As described, the runoff would continue to be conveyed to the existing systems described in this section. Modification to the secondary containment system and new drains would be constructed to ensure that water quality standards are maintained. Existing active control measures (e.g., inspections, the SPCC, and the CMP) would remain in place under proposed operating conditions. During construction, BMPs in compliance with NPDES permit requirements would be implemented to avoid or minimize impacts from polluted runoff. Therefore, the proposed project would result in no impact related to polluted runoff and stormwater drainage system capacities.

F: Would the project otherwise substantially degrade water quality?

No Impact. The proposed project's potential water quality impacts are accounted for under the other responses in this section. No other impacts are anticipated.

G: Would the project place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. The proposed project does not include construction of any housing, and proposed aboveground improvements within the Contanda facility parcel are not within a FEMA-delineated 100-year flood hazard zone. Construction of the proposed pipeline would not affect potential flood flows. Therefore, there would be no impact.

H: Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows?

No Impact. The Contanda facility site is not within a FEMA-delineated 100-year flood hazard zone and would not alter flows during flood events. Although the proposed berthing area at Wharf 8 is within the San Joaquin River 100-year flood zone, the proposed project would use existing docking infrastructure

and would not include construction of any aboveground or other improvements that would alter potential flood flows. Therefore, there would be no impact.

I: Would the project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. Although the project site is within a dam failure zone, dam failure is unlikely, and all California dams with above low-hazard flood potential are required to maintain EAPs. The proposed project would have no effect on existing dam failure inundation hazards and would not result in increased exposure to these hazards. Therefore, the proposed project would result in no impact.

J: Would the project contribute to inundation by seiche, tsunami, or mudflow?

No Impact. The proposed project would have no effect on the potential for tsunamis, seiches, or mudflows on or off site. The likelihood of a seismic-induced landslide or mudflow is very low. In addition, tsunami and other emergency response procedures are detailed in the facility's CMP. Therefore, the proposed project would result in no impact.

X. Land Use and Planning		Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:					
a.	Physically divide an established community?	☐	☐	☐	☒
b.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

A: Would the project physically divide an established community?

No Impact. The project area does not include any residences, hospitals, schools, convalescent facilities, or other features that would constitute an established community. The proposed project is a Port tenant industrial use, which is consistent with the site's current zoning and existing use. Therefore, there would be no impact to communities.

B: Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. Development and expanded operation of the project site as a bulk liquid terminal, storage, and transfer facility is consistent with its existing zoning and use. Accordingly, the proposed project would be consistent with applicable land use plans and policies, and there would be no impact.

C: Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. Mitigation measure BIO-MM-1, proposed as part of the proposed project, would be consistent with the biological protection-related goals of the *San Joaquin County Multi-Species Habitat Conservation and Open Space Plan* (San Joaquin County 2000). The proposed project would not adversely affect any critical habitat or EFH within the proposed berthing area. Therefore, the proposed project would have no impact.

XI. Mineral Resources	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

A: Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. Due to the proposed project's location in a MRZ-1, continued development of the area would not limit access to any known mineral resources. As a result, the proposed project would neither interfere with any existing extraction operations nor reduce the availability of any known mineral resources. Therefore, there would be no impact.

B: Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact. The project area does not include a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, there would be no impact.

XII. Noise		Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:					
a.	Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	☒	☐	☐	☐
b.	Expose persons to or generate excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c.	Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d.	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e.	Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f.	Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

A: Would the project expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?

Potentially Significant Impact. Construction and operational activities will require the use of numerous pieces of noise-generating equipment. These activities would temporarily increase ambient noise levels on an intermittent basis. Therefore, noise will be analyzed in the DEIR.

B: Would the project expose persons to or generate excessive groundborne vibration or groundborne noise levels?

Potentially Significant Impact. Construction and operational activities will require the use of numerous pieces of noise-generating equipment. These activities would temporarily increase ambient noise levels on an intermittent basis. Therefore, noise will be analyzed in the DEIR.

C: Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact. Construction and operational activities will require the use of numerous pieces of noise-generating equipment. These activities would temporarily increase ambient noise levels on an intermittent basis. Therefore, noise will be analyzed in the DEIR.

D: Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact. Construction and operational activities will require the use of numerous pieces of noise-generating equipment. These activities would temporarily increase ambient noise levels on an intermittent basis. Therefore, noise will be analyzed in the DEIR.

E: Would the project be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?

No Impact. There is no public airport located within 2 miles of the project area. The closest airport is the Stockton Municipal Airport, located approximately 5.5 miles to the southeast. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with public airport activities.

F: Would the project be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?

No Impact. The project site is not located in the vicinity of a private airstrip. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with airstrip activities.

XIII. Population and Housing	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

A: Would the project induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

No Impact. No new homes would be constructed as part of the proposed project. Infrastructure improvements, including replacement and new storage tanks, new product lines, and associated improvements, would not induce population growth.

B, C: Would the project displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere? Would the project displace a substantial number of people, necessitating the construction of replacement housing elsewhere?

No Impact. There are no housing units in the project area. The nearest residential area is located approximately 1,500 feet southeast of the project site. The proposed project would have no effect on existing residential areas, and the site's zoning precludes the potential for future housing developments. Therefore, the proposed project would have no impact on housing.

XIV. Public Services	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

A1-5: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: 1) fire protection; 2) police protection; 3) schools; 4) parks; or 5) other public facilities?

No Impact. The proposed project would not result in increased demand on any existing facilities or services, including fire protection, police, schools, or parks. The project area is adequately served by the City Fire Department, City Police Department, and Port police. There would be no impact to fire protection, police, schools, parks, or other public facilities

XV. Recreation	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

A: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. Neither construction nor operation of the proposed project would increase the use of existing neighborhood and regional parks or other recreational facilities. Therefore, there would be no impact.

B: Would the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No Impact. The proposed project does not include construction or expansion of any recreational facilities and would not result in increased demand or other effects to recreational facilities. Therefore, the proposed project would result in no impact to recreation.

XVI. Transportation/Traffic	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☒	☐	☐	☐
b. Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d. Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e. Result in inadequate emergency access?	☒	☐	☐	☐
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☒	☐	☐	☐

A: Would the project conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Potentially Significant Impact. Truck and rail trips would increase as a result of the proposed project. Therefore, traffic will be assessed in the DEIR.

B: Would the project conflict with an applicable congestion management program, including, but not limited to, level-of-service standards and travel demand measures or other standards established by the county congestion management agency for designated roads or highways?

Potentially Significant Impact. Truck and rail trips would increase as a result of the proposed project. Therefore, traffic will be assessed in the DEIR.

C: Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The closest airport is the Stockton Municipal Airport, located approximately 5.5 miles to the southeast. Given this distance, the proposed project would not result in a change in air traffic patterns, including increased air traffic levels or a change in location that results in substantial safety risks. Therefore, there would be no impact.

D: Would the project substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The proposed project does not include any modifications to the existing transportation network and is consistent with overall land uses at the Port. Therefore, there would be no impact.

E: Would the project result in inadequate emergency access?

Potentially Significant Impact. Truck and rail trips would increase as a result of the proposed project. Therefore, traffic will be assessed in the DEIR.

F: Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Potentially Significant Impact. Truck and rail trips would increase as a result of the proposed project. Therefore, traffic will be assessed in the DEIR.

XVII. Utilities and Service Systems	Potentially Significant Impact	Less Than Significant Impact After Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	☐	☐	☐	☒
e. Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

A: Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The facility's secondary containment system would be in compliance with USEPA SPCC regulations for secondary containment for biodiesel (oil) ASTs. Facility operations pertaining to wastewater would otherwise be unaffected. Active and passive spill control measures would remain in place, and the facility would continue to implement its existing SPCC and CMP plans as needed to address potential spills. During construction, the proposed project would adhere to all applicable permit requirements. In consideration of the analysis presented above, the proposed project would result in no impact from exceeding wastewater treatment requirements.

B: Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. A new connection to the existing water main located near the southern boundary of the Contanda facility may be required. This connection and use would not require construction or expansion of existing facilities. Therefore, there would be no impact.

C: Would the project require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. As previously described, the proposed project includes minor changes to secondary containment storage. These changes would not result in significant environmental effects. The proposed project would also result in a minor increase in impermeable surfaces from installation of new storage tanks. Non-contained stormwater would continue to be conveyed to storm drains throughout the site, and ultimately conveyed to the central Port basin where stormwater is tested before discharge into the San Joaquin River. Any increase in stormwater from new impermeable surface areas would be minimal, and the proposed project would not require any expansion of these existing drainage features. Therefore, there would be no impact.

D: Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?

No Impact. As previously described, a new connection to the existing water main located near the southern boundary of the Contanda facility may be required. Therefore, the proposed project would have no impact pertaining to water supply entitlements.

E: Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. As previously described, wastewater treatment changes would be limited to on-site improvements pertaining to secondary containment storage. Stormwater from the facility is conveyed to the existing central Port basin, where stormwater is tested before discharge into the San Joaquin River. Although the proposed project may negligibly increase impermeable surface areas and runoff, the existing central Port basin has adequate capacity to accommodate this change. Therefore, there would be no impact.

F: Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

No Impact. The proposed project would require excavation and disposal of existing surface materials for grading and surface preparation. The amount of solid waste generated by the operation of the proposed project would be negligible and limited to nonhazardous waste generated by personnel on site and through facility maintenance. The landfills in the area have adequate capacity to meet the region's need and are authorized to accept waste materials that may be generated during construction of the proposed project. Therefore, there would be no impact related to landfill capacities.

G: Would the project comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. The proposed project would be constructed within the parameters of applicable federal, state, and local solid waste regulations. As described, area landfills are authorized to accept the types of waste potentially generated by proposed project construction and operation. Therefore, there would be no impact.

Appendix E
Air Quality and Greenhouse Gas Report

Air Quality Analysis and Health Risk Assessment

Contanda Rocket Renewable Diesel Bulk Liquid Terminal Development Project

In Support of:

Focused Environmental Impact Report (EIR)

Prepared for:

Anchor QEA, LLC

130 Battery Street, Suite 400

San Francisco, California 94111

Prepared by:

Los Angeles, CA 90278

January 2019

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Acronyms

ARB	Air Resources Board
AST	Above ground storage tank
CAAQS	California Ambient Air Quality Standard
CEQA	California Environmental Quality Act
CO	Carbon monoxide
DPM	Diesel particulate matter
HARP	Hotspots analysis and reporting program
HI	Hazard index
HRA	Health risk assessment
NAAQS	National Ambient Air Quality Standard
NO2	Nitrogen dioxide
NOP	Notice of Preparation
NOx	Nitrogen oxide
O3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OGV	Ocean going vessel
PM10	Particulate matter with diameter less than 10 micrometers
PM2.5	Particulate matter with diameter less than 2.5 micrometers
RAST	Risk assessment standalone tool
REL	Reference exposure level
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO2	Sulfur dioxide
SOX	Sulfur oxide
TAC	Toxic air contaminant
ug/m3	Micrograms per meter cubed
USEPA	United States Environmental Protection Agency
VOC	Volatile organic compound

1. Summary

This analysis was prepared in support of environmental documentation under the California Environmental Quality Act (CEQA) for the construction and operation of the Contanda Rocket Renewable Diesel Bulk Liquid Terminal Development Project (proposed project), in the Port of Stockton. Appendix A presents Figure 1 which shows location of the proposed project. This report calculates air emissions that would be produced during construction and operation and evaluates cancer and noncancer health risks that would result from those emissions.

Sources of construction emissions would include on-site diesel-fueled equipment, on-road trucks, and worker vehicles, which emit criteria pollutants and diesel particulate matter (DPM). Sources of operation emissions would include ocean going vessels (OGV), tugboats, on-road trucks, switching locomotives, line haul locomotives, and employee vehicles, which also emit criteria pollutants and DPM.

Criteria pollutants are six air pollutants for which the United States Environmental Protection Agency (USEPA) has established national ambient air quality standards (NAAQS) and for which the California Air Resources Board (ARB) has established California ambient air quality standards (CAAQS). These pollutants are ground-level ozone (O_3), carbon monoxide (CO), particulate matter [with diameter less than 10 micrometers (PM10) and with diameter less than 2.5 micrometers (PM2.5)], nitrogen dioxide (NO2), sulfur dioxide (SO2), evaluated as sulfur oxide (SOx), and lead. Nitrogen oxides (NOx) and volatile organic compounds (VOC) are considered precursors to O_3 formation and are included in the analysis. Criteria pollutants contribute to respiratory and non-respiratory illnesses (USEPA 2018a). DPM is the particulate matter component of diesel internal combustion engine exhaust and is considered a toxic air contaminant (TAC) that contributes to cancer risks and noncancer health effects.

Construction activities would result in emissions of criteria pollutants less than the CEQA significance thresholds established by the San Joaquin Valley Air Pollution Control District (SJVAPCD). Operational activities would result in annual NOx emissions above the SJVAPCD CEQA threshold; all other criteria pollutant emissions from operational activities would be less than the SJVAPCD CEQA thresholds. Combined effects from construction and operational DPM emissions would result in cancer risks and noncancer effects less than the SJVAPCD CEQA thresholds.

2. Criteria Pollutant Emissions

Construction Emissions

Construction emissions would result from diesel-fueled construction equipment, on-road trucks, and worker vehicles, all of which emit criteria pollutants. Emission calculation tables are presented in Appendix B. Emissions were calculated using CalEEMod software, version 2016.3.2, which is approved by the SJVAPCD for construction projects (CAPCOA 2017). CalEEMod output is presented in Appendix C. The construction schedule and equipment utilization, which form the basis for the emission calculations, are summarized in Appendix C as part of the CalEEMod output.

Table 1 presents annual criteria pollutant emissions associated with construction activities. The table shows that emissions would be below SJVAPCD CEQA significance thresholds for all criteria pollutants.

Table 1. Annual Construction Emissions - Proposed Project (ton/yr)

	PM10	PM2.5	NOX	SOX	CO	VOC
2019 Construction	0.3	0.2	2.8	0.00	1.9	0.3
2020 Construction	0.1	0.1	1.0	0.00	0.7	0.7
Significance Threshold	15	15	10	27	100	10
Above Threshold?	No	No	No	No	No	No

Table 2 presents daily criteria pollutant emissions associated with construction activities. The SJVAPCD CEQA significance thresholds for daily emissions apply to emissions that occur on-site only. These emissions would include construction equipment and on-site truck emissions. The table shows that emissions would be below SJVAPCD CEQA significance thresholds for all criteria pollutants.

Table 2. Average Day Onsite Construction Emissions - Proposed Project (lb/day)

	PM10	PM2.5	NOX	SOX	CO	VOC
2019 Construction	2	2	25	0	17	3
2020 Construction	1	1	14	0	10	10
Significance Threshold	100	100	100	100	100	100
Above Threshold?	No	No	No	No	No	No
Notes: Supporting information is provided in Appendix B.						

Operational Emissions

Contanda would receive renewable diesel by OGV and rail at the Port A facility and then transfer the product via elevated pipeline to above ground storage tanks (ASTs) for temporary storage to the proposed project facility. Product would then be transferred from ASTs to trucks for deliveries to the local market. The Port A facility and the proposed project facility would operate independently and serve different customers. Facility layout, operation of Port A facility and the proposed project facility are described in detail in the Supplemental Notice of Preparation (NOP).

Operational emissions associated with the proposed project would result from OGVs, tugboats, on-road trucks, switching locomotives, line haul locomotives, and employee vehicles, all of which emit criteria pollutants. Operational throughput, which forms the basis for emission calculations, is summarized in Table 3 below.

Table 3. Facility Throughput

Year	Annual Trucks	Annual Rail Cars	Annual OGV Calls	Generator	Employees
2020	17,456	3,600	12	1	20
Notes: One manifest train would accommodate 10 rail cars, resulting in 360 manifest trains per year. A 25-horsepower emergency generator would be used for emergency lighting, backup power for truck scales, pumps, etc.					

Emissions were calculated using industry accepted emission factors, source activity (e.g., transit distance, engine horsepower, etc.) and methodologies presented in Appendix B.

The project proposes operation of 16 ASTs onsite. The material safety data sheet (MSDS) for renewable fuel shows a very low vapor pressure of less than 0.3 millimeters of mercury and as such is not expected to result in appreciable emissions from tanks and associated pumps, and valves, etc.

The proposed project is not a source of lead emissions and would not contribute to a violation of the lead standard. Therefore, lead emissions were not quantified for the proposed project.

Table 4 presents annual criteria pollutant emissions associated with operational activities. The table shows that emissions would be above the SJVAPCD CEQA significance threshold for NOx and below SJVAPCD CEQA significance thresholds for all other pollutants.

Table 4. Annual Operational Emissions - Project (ton/yr)

Source Category	PM10	PM2.5	NOX	SOX	CO	VOC
2020 Project						
Trucks	0.4	0.2	21.0	0.1	3.4	0.9
Rail (line haul and switcher locomotives)	0.3	0.3	16.3	0.0	4.8	0.6
Ships at Berth	0.2	0.1	6.9	0.4	0.6	0.2
Ships Transit	0.0	0.0	1.9	0.0	0.2	0.1
Tugboats	0.0	0.0	0.9	0.0	0.5	0.0
Employee Vehicles	0.0	0.0	0.0	0.0	0.2	0.0
Emergency Generator	0.0	0.0	0.0	0.0	0.0	0.0
2020 Project Total	**1**	**1**	**47**	**1**	**10**	**2**
CEQA Impacts						
Significance Threshold	15	15	10	27	100	10
Above Threshold?	No	No	Yes	No	No	No

Notes:

Emissions might not add precisely due to rounding.

Source activity, distances traveled, engine horsepower, load factors, emission factors, and other information used in calculating emissions are provided in Appendix B. In summary:

- Trucks would transit 88 miles per one-way trip to the San Joaquin Valley boundary.
- One manifest train would accommodate 10 rail cars, resulting in 360 manifest trains per year.
- OGVs would transit 15 miles from berth to the San Joaquin Valley boundary. OGVs would remain at berth for 36 hours, during which time auxiliary engines and boilers would operate. 2 tugboats would be used to assist each OGV in and out of the port.
- A 25-horsepower emergency generator would be used for emergency lighting, backup power for truck scales, pumps, etc. The SJVAPCD Rule 4702 limits emergency engine use to 100 hours per year.

Table 5 presents daily criteria pollutant emissions associated with operational activities. The SJVAPCD CEQA significance thresholds for daily emissions apply to emissions that occur on-site only. These emissions would include OGV emissions while at berth, tugboat emissions while at berth, truck idling emissions at the truck loading racks and driving on-site, and switcher locomotives. Line-haul locomotives would operate off-site and are not included in Table 5. It was conservatively assumed that all switcher locomotive emissions would occur on-site. This is a conservative assumption because switcher locomotive emissions would occur throughout the Port of Stockton. The table shows that emissions would be below SJVAPCD CEQA significance thresholds for all criteria pollutants.

Table 5. Average Daily Operational Emissions, On-Site - Project (lb/day)

Source Category	PM10	PM2.5	NOX	SOX	CO	VOC
2020 Project						
Trucks	0	0	2	0	1	0
Rail Switching	1	1	16	0	4	1
Ships at Berth	1	1	38	2	3	1
Tugboats at Berth	0	0	1	0	0	0
Emergency Generator	0	0	0	0	0	0
2020 Project Total	**2**	**1**	**57**	**2**	**9**	**2**
CEQA Impacts						
Significance Threshold	100	100	100	100	100	100
Above Threshold?	No	No	No	No	No	No
Notes: Emissions might not add precisely due to rounding. Supporting information is provided in Appendix B.						

3. Health Risk Assessment

This health risk assessment (HRA) quantifies potential cancer risks and noncancer health impacts posed to sensitive receptors that may be affected by exposure to project TACs. The HRA was conducted by: 1) Calculating project TAC emissions; 2) Determining maximum TAC concentrations at sensitive receptors via air dispersion modeling; 3) Quantifying incremental health risks associated with those maximum concentrations; and 4) Comparing incremental health risks to thresholds of significance. The HRA was conducted in accordance with SJVAPCD HRA guidance (SJVAPCD 2018) and the Office of Environmental Health Hazard Assessment Guidance (OEHHA 2015). USEPA's AERMOD dispersion model, version 18081, was used for dispersion modeling (USEPA 2018b). ARB's Hotspots Analysis Reporting Program (HARP), Risk Assessment Standalone Tool (RAST) was used to calculate cancer risk and noncancer impacts (ARB 2018).

Proposed project construction and operation activities would primarily generate diesel exhaust emissions. For assessing health risks, OEHHA considers DPM to be a surrogate for whole diesel exhaust (OEHHA 2015). DPM is considered a TAC that contributes to cancer risks and noncancer health effects. Therefore, this HRA uses project DPM emissions in the risk characterization. Because diesel exhaust is the dominant type of emission associated with project construction and operation, non-diesel emissions (tire wear, brake wear, gasoline employee vehicle exhaust) would have a negligible contribution to project risks, and therefore are not modeled in this HRA.

This HRA evaluates individual lifetime cancer risks and chronic noncancer hazard index (HI) associated with the proposed project's DPM emissions. The individual lifetime cancer risk represents the chance that an individual would contract cancer after a lifetime of exposure to the proposed project TACs. Cancer risk is quantified by taking into consideration the TAC concentration, breathing rate, duration and frequency of exposure, age sensitivity, and the TAC potency factor developed by OEHHA.

The chronic HI evaluates the probability of TACs to cause adverse noncancer health effects due to long-term exposure. The chronic HI is quantified by dividing the TAC concentration at a sensitive receptor location by the TAC reference exposure level (REL) established by OEHHA, where the REL is a

concentration below which OEHHA has determined that no adverse health effect is anticipated. An acute HI, which evaluates the probability of TACs to cause adverse health effects due to short-term exposure, was not quantified for the proposed project because the chief pollutant of concern is DPM, for which OEHHA has not established an acute REL. OEHHA states that an acute HI analysis of the individual TAC components of diesel exhaust is warranted only in certain unusual situations such as when a nearby receptor is located above the emission release point (e.g. on a hillside or in a multistory apartment building) (OEHHA 2015b). No unusual situations were identified for the proposed project which would warrant an acute HI analysis. Table 6 presents the relevant OEHHA cancer potency factor and chronic REL for DPM.

Table 6. OEHHA Cancer Potency and Reference Exposure Levels

Toxic Air Contaminant	HARP Pollutant ID	Inhalation Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	REL Chronic Inhalation (ug/m^3)	REL Acute Inhalation (ug/m^3)
DPM (Particulate emissions from diesel-fueled engines)	9901	1.1E+00	5.0E+00	--
Notes: OEHHA has not identified an acute REL for DPM. Source: OEHHA, 2015.				

Construction

The construction sources evaluated in the HRA include construction equipment and on-site trucks. Worker vehicles and off-site trucks were screened out of the HRA because their contributions to the maximum TAC concentrations and health risks would be negligible relative to the evaluated sources. The construction HRA focuses on health risks posed to nearby sensitive receptors resulting from DPM emissions. A DPM emission of 0.183 tons per year from on-site construction equipment and trucks, calculated via CalEEMod, was used in the HRA. The CalEEMod output is presented in Appendix C.

Dispersion modeling conducted using AERMOD assumed a polygon-shaped area source over the proposed construction site. A visual depiction of the construction source as represented in AERMOD is presented in Appendix A, Figure 1. The AERMOD source parameters are presented in Appendix D. Construction emissions in AERMOD were assumed to occur during typical construction hours, 7:00 a.m. to 4:00 p.m. (hours 8-16 in AERMOD). Dispersion modeling resulted in a maximum annual DPM concentration at a residential receptor of 0.03922 micrograms per cubic meter (ug/m3) associated with construction activities. This maximum residential concentration would occur near the northwest corner of S. Ventura Ave. and W. Washington St. The location of the maximum residential receptor is indicated in Appendix A, Figure 2. AERMOD output files for construction and operation are presented in Appendix D.

Operation

The operational sources evaluated in the HRA include truck transit out to about 1 mile east of the project site, truck idling onsite, line haul locomotives out to about 1 mile southeast of the project site, switcher locomotives operating within the Port, OGVs at berth, OGVs in transit to about 4 miles northwest of the project site, and tugboats used to assist the OGVs within the Port. A sensitivity run with AERMOD showed that the geographical extent of the modeling domain is sufficient to fully capture maximum DPM

concentrations near the site to a necessary precision. Employee vehicles, the emergency generator, and truck tire and break wear were screened out of the HRA because their contributions to the maximum TAC concentrations and health risks would be negligible relative to the evaluated sources. Table 7 presents DPM emissions associated with operational activities used in the HRA. Emission calculation tables are presented in Appendix B.

Table 7. Operational Annual DPM Emissions Modeled in AERMOD

Source Category	DPM Emissions (lb/yr)
Truck transit [a]	8.2
Truck idling on-site	1.7
Line haul locomotives [b]	3.3
Switcher locomotives	161.3
OGVs at berth [c]	315.2
OGVs transit [c,d]	37.7
Tugboats in transit	75.6
Tugboats at berth	13.4

Notes:
[a] Truck transit was modeled to approximately 1 mile east of the project site.
[b] Line haul locomotives were modeled to approximately 1 mile southeast of the project site.
[c] OGV boiler emissions were conservatively treated as DPM together with propulsion and auxiliary engine exhaust even though boilers are external combustion sources instead of internal combustion engines.
[d] OGV transit was modeled to approximately 4 miles northwest of the project site.
[e] Employee vehicles, the emergency generator, and truck tire and break wear were screened out of the HRA because their contributions to the maximum TAC concentrations and health risks would be negligible relative to the evaluated sources.

Dispersion modeling of annual DPM emissions during proposed project operation was conducted using AERMOD. Point sources (i.e., stacks) were used to represent OGVs at berth and trucks idling at the loading rack. Line sources were used to represent locomotives, truck transit, OGV transit, and tugboat assists. A single volume source was used to represent tugboats at berth. A visual depiction of the operational sources as represented in AERMOD is presented in Appendix A, Figure 3. The AERMOD source parameters are presented in Appendix D. Switcher locomotive emissions were modeled in AERMOD from 7:00 a.m. to 3:00 p.m. (hours 8-15 in AERMOD) to reflect their normal operating schedule. Line haul locomotive emissions were modeled from 6:00 a.m. to 4:00 p.m. (hours 7-16 in AERMOD) to match the switcher schedule plus one hour on either end. Emissions from all other sources were modeled 24 hours per day.

Dispersion modeling resulted in a maximum 5-year average DPM concentration at a residential receptor of 0.0102 ug/m3 associated with operational activities. This maximum residential concentration would occur at the same residential receptor as the construction maximum, the northwest corner of S. Ventura Ave. and W. Washington St. The location of the maximum residential receptor is indicated in Appendix A, Figure 2. AERMOD output files for construction and operation are presented in Appendix D.

Other Model Inputs

Meteorological Data

The Stockton, California meteorological dataset (Station ID 23237) was used in dispersion modeling. The dataset was prepared and provided by the SJVAPCD (2018b). The most recent five years of available meteorological data were modeled (2013 through 2017). Because proposed project construction would last only slightly longer than one year, all construction emissions were conservatively modeled as if they occurred within a single year. Each year of meteorological data was modeled separately for construction, and the highest annual DPM concentration from the five model runs was selected for use in the HRA. Because project operation would continue for many years, the annual operational emissions were modeled for each of the five years of the meteorological dataset, and an average 5-year DPM concentration was selected for use in the HRA.

Receptors

Although the proposed project is located within the Port of Stockton and is surrounded by industrial land uses, there are sensitive receptors located to the east and southeast of the proposed project. For project operation, AERMOD was run with a Cartesian grid of receptors covering the entire modeling domain to verify proper model performance. The distance between receptors was 25 meters along the site boundary, 50 meters in the residential neighborhood where the maximum concentration was predicted, 100 meters out to approximately 1 kilometer from the project site, 250 meters out to approximately 2 kilometers from the project site and the major transit routes, and 500 meters over the entire modeling domain. Appendix A, Figure 4 shows the receptor grid modeled in AERMOD for proposed project operation. A smaller subset of this receptor grid was modeled for project construction since all the modeled construction emissions would occur onsite.

Receptors falling in residential areas were considered for the selection of maximum DPM concentrations for use in the HRA.

Source and Receptor Elevations

Ground-level elevations for all sources and receptors in AERMOD were determined using the AERMAP program, version 18081 (USEPA 2018c). To generate elevations, AERMAP used a 1-arc-second national elevation dataset (NED) file from the U.S. Geological Survey (USGS) LANDFIRE data distribution site.

Building Downwash

The aerodynamic effects of nearby buildings and storage tanks on exhaust plumes released from point sources (called building downwash) were accounted for in AERMOD. The building downwash inputs to AERMOD were generated using the BPIP-Prime program, version 04274 (USEPA 2004).

HRA Results

Cancer risk for construction conservatively assumes exposure starting in the third trimester before birth and continuing for 1 year after birth, during the most sensitive time of an exposed person's lifetime. Cancer risk for operation assumes exposure starting after the end of construction and continuing for 30 years. Both construction and operation cancer risk are based on the 95th percentile intake breathing rate. Table 8 presents HRA results and shows that both cancer risk and noncancer effects would be below SJVAPCD thresholds. The maximum impacts at a residential receptor would occur at the northwest corner of S. Ventura Ave. and W. Washington St. HRA output files are provided in Appendix E.

Table 8. Project Maximum Cancer Risk and Noncancer Impacts

Receptor Type	Construction/ Operation	Annual Average DPM Concentration (ug/m3)	UTM Location (m)	Cancer Risk	Chronic NonCancer HI
Residential	Construction	3.92E-02	647700, 4201200	6.972E-06	7.84E-03
Residential	Operation	1.02E-02		6.973E-06	2.04E-03
Total				1.39E-05 13.9 in a million	9.88E-03
Significance Threshold				20 in a million	1
Above Threshold?				No	No

Notes:
Maximum construction and operation DPM occur at the same receptor.
HARP Risk Assessment Standalone Tool was used to quantify risk at the receptor with the maximum DPM concentration.
Significance threshold is per SJVAPCD Air Quality Thresholds of Significance – Toxic Air Contaminants. 0714-GAMAQI-TACs-Thresholds-of-Significance.pdf. 7/13/2015. http://www.valleyair.org/transportation/0714-GAMAQI-TACs-Thresholds-of-Significance.pdf. Last accessed 12/18/2018.

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Appendix A

Figures

Figure 1. Representation of Construction Source in AERMOD

Figure 2. Location of Maximum Residential DPM Concentration

Figure 3. Representation of Operational Sources in AERMOD

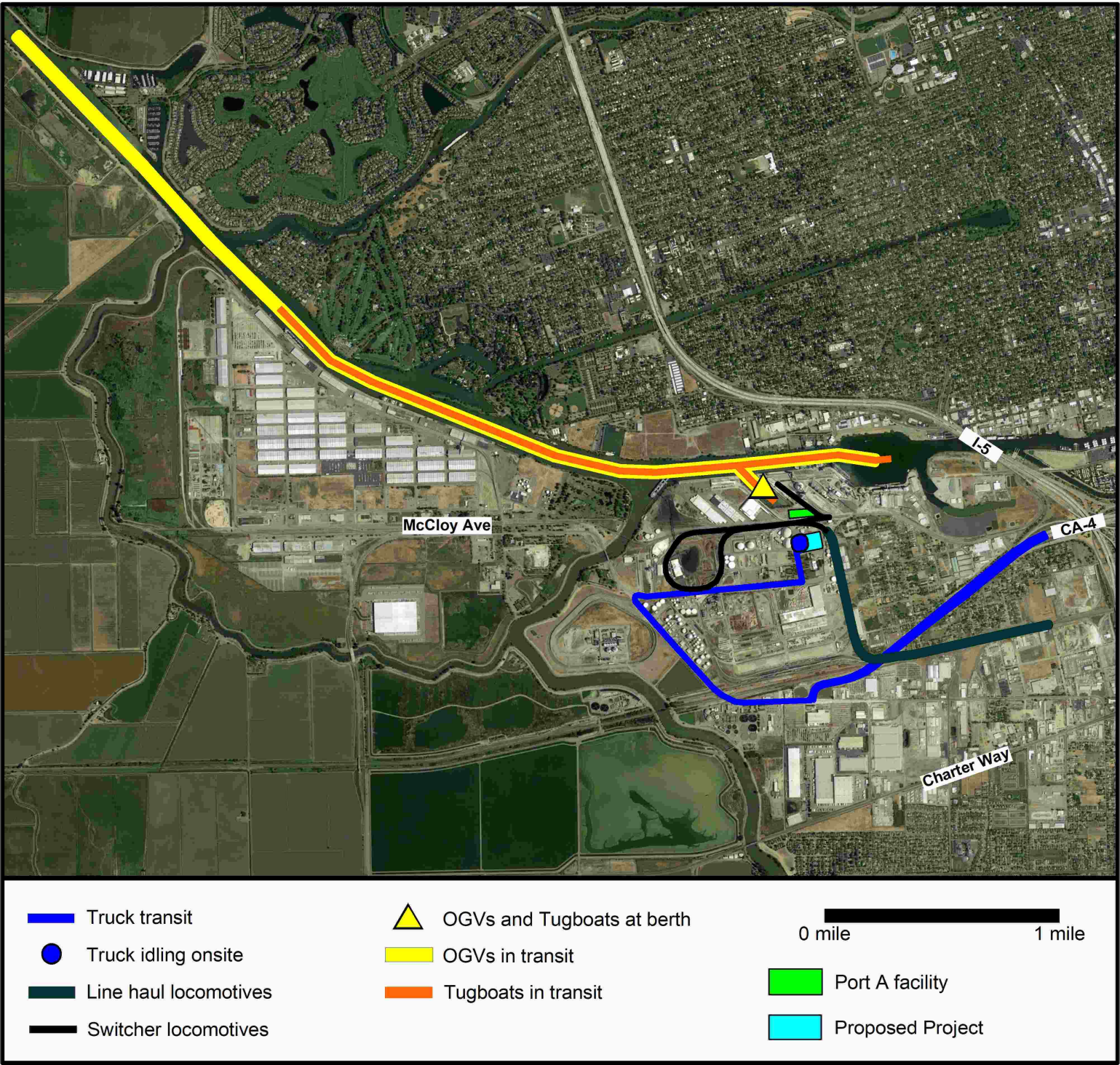
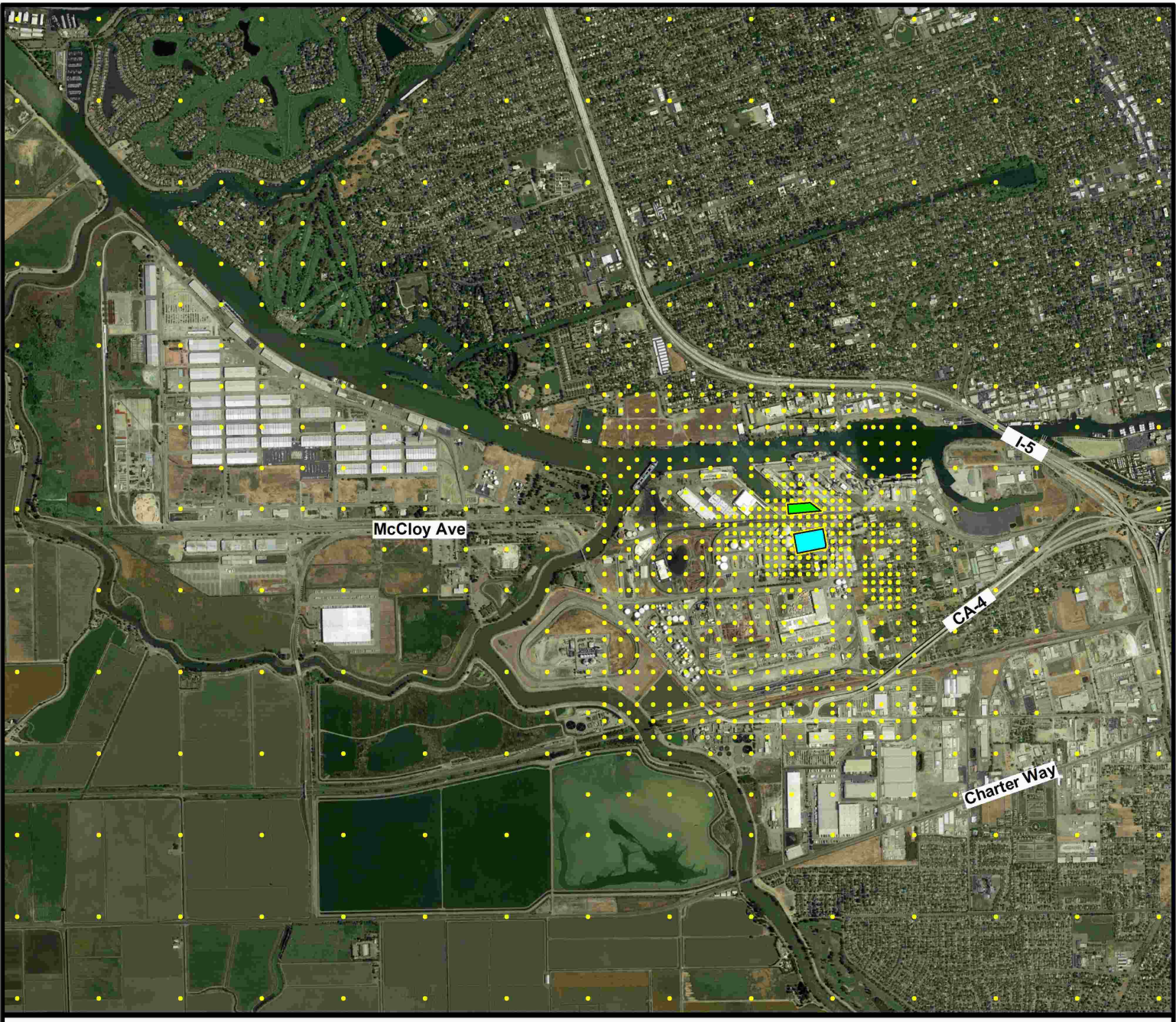


Figure 4. AERMOD Receptor Grid



Appendix B

Emission Calculation Tables

Table B-1.
Facility Throughput

	Annual Trucks	Annual Rail Cars	Annual Ship Calls	Generator
2020	17,456	3,600	12	1

Provided by Anchor QEA in e-mail, 9/13/2018.
Revised in 11/16/2018 to include ships and increased trucks.

Table B-2.
Operational OGV Emissions Without Mitigation

		Vessel Characteristics			Activity				Average Auxiliary Loads (kW)			Work
Vessel Type	**Engine/Source Type**	**Engine Rating (kW)**	**Model Year**	**Max Rated Speed (knots)**	**Berth Time (hr/call)**	**Annual Calls**	**Annual Transits (1-way)**	**Fuel Sulfur**	Berth	Maneuvering	Transit	**Berth**
												Energy Demand (kW-hr/call)
Proposed Project												
Tanker - Chemical	Propulsion Engine	6,848	1998	14.1	36	12	24	0.1%				
Tanker - Chemical	Auxiliary Engine				36	12	24	0.1%	967	833	611	34,812
Tanker - Chemical	Auxiliary Boiler				36	12	24	0.1%	568	136	59	20,448
2020 Total												

Source:

Notes:
Trips = one-way trips

Table B-2.
Operational OGV Emissions Without Mitigation

Vessel Type	Engine/Source Type	Port Harbor to Berth (maneuvering)					San Joaquin River - Stockton to SJVAPCD Boundary				
		Speed (knots)	Distance (nm)	Maneuvering Time (hr/trip)	Loaded Energy Demand (kW-hr/trip)	Propulsion Engine Load Factor	Speed (knots)	Distance (nm)	Transit Time (hr/trip)	Loaded Energy Demand (kW-hr/trip)	Propulsion Engine Load Factor
Proposed Project											
Tanker - Chemical	Propulsion Engine	2.0	2.0	1.0	137	2%	8.0	13.0	1.6	2,003	18%
Tanker - Chemical	Auxiliary Engine			1.0	833				1.6	993	
Tanker - Chemical	Auxiliary Boiler			1.0	136				1.6	96	
2020 Total											

Source:

Notes:
Trips = one-way trips

Table B-2.
Operational OGV Emissions Without Mitigation

Vessel Type	Engine/Source Type	San Joaquin River - SJVAPCD Boundary through SF Bay					Ocean - SF Bay to State Boundary				
		Speed (knots)	Distance (nm)	Transit Time (hr/trip)	Loaded Energy Demand (kW-hr/trip)	Propulsion Engine Load Factor	Speed (knots)	Distance (nm)	Transit Time (hr/trip)	Loaded Energy Demand (kW-hr/trip)	Propulsion Engine Average Load in Open Ocean
Proposed Project											
Tanker - Chemical	Propulsion Engine	6.0	37.0	6.2	2,956	7%	14.0	340.0	24.3	133,051	80%
Tanker - Chemical	Auxiliary Engine			6.2	3,768				24.3	14,839	
Tanker - Chemical	Auxiliary Boiler			6.2	364				24.3	1,433	
2020 Total											

Source:

Notes:
Trips = one-way trips

Table B-2.
Operational OGV Emissions Without Mitigation

Vessel Type	Engine/Source Type	**Exhaust Emission Factors** (g/kW-hr) - Annual Fleet Mix										
		PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC	CO2	CH4	N2O
Proposed Project												
Tanker - Chemical	Propulsion Engine	0.26	0.24	0.26	17.00	0.39	1.40	0.60	0.63	589.00	0.01	0.03
Tanker - Chemical	Auxiliary Engine	0.26	0.24	0.26	13.80	0.46	1.10	0.40	0.42	686.00	0.01	0.03
Tanker - Chemical	Auxiliary Boiler	0.14	0.13		2.00	0.61	0.20	0.10	0.11	922.00	0.00	0.08
2020 Total												

Source:

Notes:
Trips = one-way trips

Table B-2.
Operational OGV Emissions Without Mitigation

Unmitigated Annual Emissions

		Berth											
Vessel Type	**Engine/Source Type**	PM10	PM2.5	DPM	NOX	SOX	CO	HC	VOC	CO2	CH4	N2O	CO2e
Proposed Project		(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(mty)	(mty)	(mty)	(mty)
Tanker - Chemical	Propulsion Engine	-	-	-	-	-	-	-	-	-	-	-	-
Tanker - Chemical	Auxiliary Engine	239.45	221.03	239.45	12,709.14	423.64	1,013.05	368.38	387.91	286.57	0.00	0.01	290.40
Tanker - Chemical	Auxiliary Boiler	75.73	70.32	-	1,081.90	329.98	108.19	54.10	56.96	226.24	0.00	0.02	231.95
2020 Total		**315.18**	**291.35**	**239.45**	**13,791.05**	**753.62**	**1,121.24**	**422.48**	**444.87**	**512.81**	**0.00**	**0.03**	**522.35**

Source:

Notes:

Trips = one-way trips

Table B-2.
Operational OGV Emissions Without Mitigation

		Port Harbor to Berth (maneuvering)											
Vessel Type	**Engine/Source Type**	PM10	PM2.5	DPM	NOX	SOX	CO	HC	VOC	CO2	CH4	N2O	CO2e
Proposed Project		(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(mty)	(mty)	(mty)	(mty)
Tanker - Chemical	Propulsion Engine	13.74	12.68	13.74	570.39	9.33	98.21	92.09	96.97	6.35	0.00	0.00	6.50
Tanker - Chemical	Auxiliary Engine	11.46	10.58	11.46	608.22	20.27	48.48	17.63	18.56	13.71	0.00	0.00	13.90
Tanker - Chemical	Auxiliary Boiler	1.01	0.94	-	14.39	4.39	1.44	0.72	0.76	3.01	0.00	0.00	3.09
2020 Total		**26.20**	**24.19**	**25.19**	**1,193.01**	**33.99**	**148.13**	**110.44**	**116.29**	**23.07**	**0.00**	**0.00**	**23.49**

Source:

Notes:
Trips = one-way trips

Table B-2.
Operational OGV Emissions Without Mitigation

		San Joaquin River - Stockton to SJVAPCD Boundary											
Vessel Type	**Engine/Source Type**	PM10	PM2.5	DPM	NOX	SOX	CO	HC	VOC	CO2	CH4	N2O	CO2e
Proposed Project		(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(mty)	(mty)	(mty)	(mty)
Tanker - Chemical	Propulsion Engine	28.66	26.45	28.66	1,837.76	42.57	164.70	70.59	74.33	29.17	0.00	0.00	29.62
Tanker - Chemical	Auxiliary Engine	13.66	12.61	13.66	724.96	24.17	57.79	21.01	22.13	16.35	0.00	0.00	16.56
Tanker - Chemical	Auxiliary Boiler	0.71	0.66	-	10.15	3.09	1.01	0.51	0.53	2.12	0.00	0.00	2.18
2020 Total		**43.03**	**39.72**	**42.32**	**2,572.86**	**69.83**	**223.50**	**92.11**	**96.99**	**47.63**	**0.00**	**0.00**	**48.36**

Source:

Notes:
Trips = one-way trips

Table B-2.
Operational OGV Emissions Without Mitigation

		San Joaquin River - SJVAPCD Boundary through SF Bay				Ocean - SF Bay to State Boundary			
Vessel Type	**Engine/Source Type**	CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
Proposed Project		(mty)	(mty)	(mty)	(mty)	(mty)	(mty)	(mty)	(mty)
Tanker - Chemical	Propulsion Engine	61.43	0.00	0.00	62.42	1,880.80	0.04	0.09	1,910.31
Tanker - Chemical	Auxiliary Engine	62.03	0.00	0.00	62.86	244.30	0.00	0.01	247.56
Tanker - Chemical	Auxiliary Boiler	8.05			8.05	31.71	0.00	0.00	32.51
2020 Total		**131.51**	**0.00**	**0.01**	**133.33**	**2,156.81**	**0.04**	**0.11**	**2,190.38**

Source:

Notes:
Trips = one-way trips

Table B-2.
Operational OGV Emissions Without Mitigation

		Total Maneuvering and Transit to SJVAPCD Boundary							
Vessel Type	**Engine/Source Type**	PM10	PM2.5	DPM	NOX	SOX	CO	HC	VOC
Proposed Project		(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)
Tanker - Chemical	Propulsion Engine	42.394	39.133	42.394	2408.153	51.900	262.907	162.677	171.299
Tanker - Chemical	Auxiliary Engine	25.118	23.186	25.118	1333.179	44.439	106.268	38.643	40.691
Tanker - Chemical	Auxiliary Boiler	1.718	1.595		24.537	7.484	2.454	1.227	1.292
2020 Total		**69.23**	**63.91**	**67.51**	**3,765.87**	**103.82**	**371.63**	**202.55**	**213.28**

Source:

Notes:
Trips = one-way trips

Table B-2.
Operational OGV Emissions Without Mitigation

		Total Maneuvering and Transit to State Boundar			
Vessel Type	**Engine/Source Type**	CO2	CH4	N2O	CO2e
Proposed Project		(mty)	(mty)	(mty)	(mty)
Tanker - Chemical	Propulsion Engine	1,977.75	0.04	0.10	2,008.85
Tanker - Chemical	Auxiliary Engine	336.40	0.00	0.01	340.89
Tanker - Chemical	Auxiliary Boiler	44.89	0.00	0.00	45.82
2020 Total		**2,359.03**	**0.05**	**0.11**	**2,395.56**

Source:

Notes:
Trips = one-way trips

Table B-3.

OGV Propulsion/Boiler Engine Emission Factors for 0.1% S MGO Fuel (g/kW-hr)

Engine	IMO Tier	Model Yea	PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC	CO2	CH4	N2O
Slow Speed Diesel	Tier 0	≤1999	0.26	0.24	0.26	17	0.39	1.4	0.6	0.63	589	0.01	0.03
Medium Speed Diesel	Tier 0	≤1999	0.26	0.24	0.26	13.2	0.43	1.1	0.5	0.53	649	0.01	0.03
Slow Speed Diesel	Tier I	2000-2010	0.26	0.24	0.26	16.0	0.39	1.4	0.6	0.63	589	0.01	0.03
Medium Speed Diesel	Tier I	2000-2010	0.26	0.24	0.26	12.2	0.43	1.1	0.5	0.53	649	0.01	0.03
Slow Speed Diesel	Tier II	2011-2015	0.26	0.24	0.26	14.4	0.39	1.4	0.6	0.63	589	0.01	0.03
Medium Speed Diesel	Tier II	2011-2015	0.26	0.24	0.26	10.5	0.43	1.1	0.5	0.53	649	0.01	0.03
Slow Speed Diesel	Tier III	≥2016	0.26	0.24	0.26	3.4	0.39	1.4	0.6	0.63	589	0.01	0.03
Medium Speed Diesel	Tier III	≥2016	0.26	0.24	0.26	2.6	0.43	1.1	0.5	0.53	649	0.01	0.03
Gas Turbine	na	all	0.01	0.01	0.00	5.7	0.61	0.2	0.1	0.11	922	0.00	0.08
Steam Ship	na	all	0.14	0.13	0.00	2.0	0.61	0.2	0.1	0.11	922	0.00	0.08

Notes:

Slow speed diesel: engine speed < 150 rpm; assumed as default for propulsion engines

Tier 0 used for propulsion engines based on Mississippi Voyager model year 1998. Information provided by Contanda.

Medium speed diesel: engine speed > 150 rpm (500 rpm typical).

Source:

POLB 2014 Emissions Inventory, Table 2.13.

Table B-4.

OGV Auxiliary Engine Emission Factors for 0.1% MGO Fuel (g/kW-hr)

Engine	IMO Tier	Model Year	PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC	CO2	CH4	N2O
High Speed Diesel	Tier 0	≤1999	0.26	0.24	0.26	10.9	0.46	0.90	0.40	0.42	656	0.01	0.03
Medium Speed Diesel	Tier 0	≤1999	0.26	0.24	0.26	13.8	0.46	1.10	0.40	0.42	686	0.01	0.03
High Speed Diesel	Tier I	2000-2010	0.26	0.24	0.26	9.8	0.46	0.90	0.40	0.42	656	0.01	0.03
Medium Speed Diesel	Tier I	2000-2010	0.26	0.24	0.26	12.2	0.46	1.10	0.40	0.42	686	0.01	0.03
High Speed Diesel	Tier II	2011-2015	0.26	0.24	0.26	7.7	0.46	0.90	0.40	0.42	656	0.01	0.03
Medium Speed Diesel	Tier II	2011-2015	0.26	0.24	0.26	10.5	0.46	1.10	0.40	0.42	686	0.01	0.03
High Speed Diesel	Tier III	≥2016	0.26	0.24	0.26	2.0	0.46	0.90	0.40	0.42	656	0.01	0.03
Medium Speed Diesel	Tier III	≥2016	0.26	0.24	0.26	2.6	0.46	1.10	0.40	0.42	686	0.01	0.03

Notes:

Calculations assume that auxiliary and propulsion engines are the same model year.

Source:

POLB 2014 Emissions Inventory, Table 2.14.

Average Load Propulsion Engine - Propeller Law

$LF = (AS/MS)^3$

Where:

LF = load factor, percent

AS = actual speed, knots

MS = maximum speed, knots

Table B-5.

OGV Low Load Adjustment Factors - Propulsion Engines

Load	PM10	PM2.5	DPM	NOx	SOx	CO	HC	VOC	CO2	CH4	N2O
2% docking loa	7.29	7.29	7.29	4.63	3.30	9.68	21.18	21.18	3.28	21.18	4.63
3% transit loa	4.33	4.33	4.33	2.92	2.45	6.46	11.68	11.68	2.44	11.68	2.92
4% transit loa	3.09	3.09	3.09	2.21	2.02	4.86	7.71	7.71	2.01	7.71	2.21
5% transit loa	2.44	2.44	2.44	1.83	1.77	3.89	5.61	5.61	1.76	5.61	1.83
6% transit loa	2.04	2.04	2.04	1.60	1.60	3.25	4.35	4.35	1.59	4.35	1.60
7% transit loa	1.79	1.79	1.79	1.45	1.47	2.79	3.52	3.52	1.47	3.52	1.45
8% transit loa	1.61	1.61	1.61	1.35	1.38	2.45	2.95	2.95	1.38	2.95	1.35
9% transit loa	1.48	1.48	1.48	1.27	1.31	2.18	2.52	2.52	1.31	2.52	1.27
10% transit loa	1.38	1.38	1.38	1.22	1.26	1.96	2.20	2.20	1.25	2.20	1.22
11% transit loa	1.30	1.30	1.30	1.17	1.21	1.79	1.96	1.96	1.21	1.96	1.17
12% transit loa	1.24	1.24	1.24	1.14	1.17	1.64	1.76	1.76	1.17	1.76	1.14
13% transit loa	1.19	1.19	1.19	1.11	1.14	1.52	1.60	1.60	1.14	1.60	1.11
14% transit loa	1.15	1.15	1.15	1.08	1.11	1.41	1.47	1.47	1.11	1.47	1.08
15% transit loa	1.11	1.11	1.11	1.06	1.08	1.32	1.36	1.36	1.08	1.36	1.06
16% transit loa	1.08	1.08	1.08	1.05	1.06	1.24	1.26	1.26	1.06	1.26	1.05
17% transit loa	1.06	1.06	1.06	1.03	1.05	1.17	1.18	1.18	1.04	1.18	1.03
18% transit loa	1.04	1.04	1.04	1.02	1.03	1.11	1.11	1.11	1.03	1.11	1.02
19% transit loa	1.02	1.02	1.02	1.01	1.10	1.05	1.05	1.05	1.01	1.05	1.01
20% transit loa	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: POLB 2016 Emissions Inventory, Table 2.4.

Table B-6.
OGV Main Engine Characteristics and Activity

Year	Vessel Type	Engine Type	Engine Tier	Model Year	Engine Rating (hp)	Engine Rating (kW)	Annual Calls	Annual Transits (1-way)	Berth Time (hr/call)
2020	Tanker - Chemical	propulsion	0	1998	9,180	6,848	12	24	36

Source:

Vessel characteristics and engine provided by Contanda for a representative vessel, the Mississippi Voyager in *https://intelligence.marinelink.com/vessels/vessel/mississippi-voyager-316380*

Activity provided by Contanda in 11/20/18 e-mail from Lena DeSantis.

Berth time provided by Anchor QEA (telephone communication with Lena DeSantis 5/25/18).

Future years: Assumed no change to fleet mix, per communication with Contanda.

Table B-7.
OGV Average Aux Engine & Aux Boiler Loads

			Average Loads (kW)		
Year	Vessel Type	Engine Type	Transit	Maneuvering	Berth
2020	Tanker - Chemical	Auxiliary Engine	611	833	967
2020	Tanker - Chemical	Auxiliary Boiler	59	136	568

Source:

POLB 2016 Emissions Inventory, Tables 2.1 and 2.3.

Table B-8.
OGV Maximum Rated Vessel Speed

Category	Speed (knots)
Tanker - Chemical	14.1

Source:

Vessel characteristics and engine provided by Contanda for a representative vessel, the Mississippi Voyager in https://intelligence.marinelink.com/vessels/vessel/mississippi-voyager-316380

Speed: https://www.ship-technology.com/projects/evolution-class-oil-chemical-tankers/

Table B-9.
River/Harbor Information

	Port Harbor to Berth (maneuvering)	San Joaquin River - Stockton to SJVAPCD Boundary	San Joaquin River - SJVAPCD Boundary through SF Bay	Ocean - SF Bay to State Boundary	Total Project
Distance (nautical miles/1-way trip)	2	13	37	340	392
Allowed OGV Speed (knots)	2	8	6	14	

Source:
Provided by Anchor

Table B-10.
Harbor Craft Data

			HC Characteristics						HC Engine Activity per HC		OGV Activity	Annual HC Energy Demand	
Year	HC Classification	Engine Type	Engine Count per HC	HC Average MY	HC Average HP	HC Average kW	Load Factor	HC Count per OGV	Berth (hr/call)	Maneuvering (hr/one-way trip)	Average Annual OGV Transits (one-way trips/yr)	Berth (hr/call) (kW-hr/yr)	Maneuvering (kW-hr/yr)
Proposed Project													
OGV Assist	Assist Tugboat	Propulsion	2	1956	1,800	1,343	0.50	2	0.7	2.0	24	10,742	64,454
		Auxiliary	2	1956	235	175	0.31	2	0.7	2.0	24	3,478	10,434
2020													

Table B-10.
Harbor Craft Data

	Unmitigated Emission Factors											**Unmitigated Emissions**										
												Berth										
												Average Annual										
Year	**Engine Tier**	PM10	PM2.5	DPM	NOX	SOX	CO	VOC	CO2	CH4	N2O	PM10	PM2.5	DPM	NOX	SOX	CO	VOC	CO2	CH4	N2O	CO2e
		(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(g/kW-hr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(mty)	(mty)	(mty)	(mty)
Proposed Project																						
	Tier 2	0.50	0.45	0.50	9.33	0.01	5.00	0.52	652	0.01	0.03	11.84	10.54	11.84	221.04	0.18	118.41	12.25	7.00	0.00	0.00	7.11
	Tier 2	0.20	0.18	0.20	6.84	0.01	5.00	0.38	652	0.01	0.03	1.53	1.36	1.53	52.45	0.06	38.34	2.91	2.27	0.00	0.00	2.30
2020												**13.37**	**11.90**	**13.37**	**273.49**	**0.23**	**156.75**	**15.16**	**9.27**	**0.00**	**0.00**	**9.41**

Table B-10.
Harbor Craft Data

	Maneuvering											**Total Berth and Maneuvering**										
	Average Annual											**Average Annual**										
Year	PM10	PM2.5	DPM	NOX	SOX	CO	VOC	CO2	CH4	N2O	CO2e	PM10	PM2.5	DPM	NOX	SOX	CO	VOC	CO2	CH4	N2O	CO2e
	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(mty)	(mty)	(mty)	(mty)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(lb/yr)	(mty)	(mty)	(mty)	(mty)
Proposed Project																						
	71.05	63.23	71.05	1,326.26	1.05	710.47	73.50	42.02	0.00	0.00	42.66	82.89	73.77	82.89	1,547.31	1.23	828.88	85.75	49.03	0.00	0.00	49.77
	4.60	4.09	4.60	157.34	0.17	115.02	8.72	6.80	0.00	0.00	6.91	6.13	5.46	6.13	209.79	0.23	153.36	11.63	9.07	0.00	0.00	9.21
2020	**75.65**	**67.33**	**75.65**	**1,483.61**	**1.22**	**825.48**	**82.22**	**48.83**	**0.00**	**0.00**	**49.56**	**89.02**	**79.23**	**89.02**	**1,757.10**	**1.45**	**982.23**	**97.38**	**58.10**	**0.00**	**0.00**	**58.97**

Table B-10.
Harbor Craft Data
Notes and Source:
Tugboats are used to assist OGVs during river transit/maneuvering.
Tugboat engine characteristics are from Sacramento Channel Deepening or EcoEnergy *Air Quality Appendix.pdf* and from Brusco tugboats details on Port of Stockton website.

Applicable engine Tier is identified based on the EPA requirements for new engines and ARB harbor craft compliance schedule and average model year.
Example:
2004 MY engine (Tier 1 per EPA standards) would have to be replaced at the end of 2017, based on ARB's compliance schedule. At that time, the engine will need to be replaced with the relevant Tier engine applicable at the time (Tier 4).
Emission Factors:
EPA emission standards, which are reported as NOx+THC, were convered by Nox and HC assuming 95% and 5% are Nox and HC, respectively, per Carl Moyer Program guidelines.
SOx emission factor is based on 15 ppm fuel sulfur content.
PM2.5 is 89% of PM10, per SCAQMD 2006 Final Methodology to Calculate PM2.5 and PM 2.5 Significance Thresholds, Table 5.
CO2 and N20 emission factors are from IVL: Methodology for Calculating Emissions from Ships: Update on Emission Factors, 2004, also summarized in POLA 2009 Emissions Inventory, Appendix B. CH4 is 2% of HC, per IVL study.

Table B-11.
HC Activity: Time required to assist vessel

	Berth (hr/call)	Maneuvering (hr/one-way trip)
Propulsion engine	0.3	1.0
Auxiliary engine	0.3	1.0

Notes:
It is assumed that tugboats pick up the vessel at the Rough and Ready Island and transit up to 2 miles, one-way. Source: Communication with Lena DeSantis e-mail 11/29/18

Table B-12.
Harbor Craft Emission Factors - EPA Standards g/kW-hr

Engine Displacement	(kW)	EPA Tier	CARB Compliance MY Year	NMHC+NOx	PM10	PM2.5	DPM	NOx	SOX	CO	HC	VOC	CO2	CH4	N2O
Category 1															
		Tier 1	2004		0.40	0.36	0.40	9.80	0.007	5.00	0.38	0.39	652	0.008	0.031
<0.9	37-75	Tier 2	2005	**7.50**	**0.40**	0.36	0.40	7.1	0.007	**5.00**	0.38	0.39	652	0.008	0.031
0.9 < displ < 1.2	75-130	Tier 2	2004	**7.20**	**0.30**	0.27	0.30	6.8	0.007	**5.00**	0.36	0.38	652	0.007	0.031
1.2 < displ < 2.5	130-560	Tier 2	2004	**7.20**	**0.20**	0.18	0.20	6.8	0.007	**5.00**	0.36	0.38	652	0.007	0.031
2.5 < displ < 5	>560	Tier 2	2007	**7.20**	**0.20**	0.18	0.20	6.8	0.007	**5.00**	0.36	0.38	652	0.007	0.031
<0.9	<19	Tier 3	2009	**7.5**	**0.40**	0.36	0.40	7.1	0.007	5.00	0.38	0.39	652	0.008	0.031
<0.9	19-75	Tier 3	2009	**7.5**	**0.30**	0.27	0.30	7.1	0.007	5.00	0.38	0.39	652	0.008	0.031
<0.9	75-3700	Tier 3	2012	**5.4**	**0.14**	0.12	0.14	5.1	0.007	5.00	0.27	0.28	652	0.005	0.031
0.9 < displ < 1.2	100-175	Tier 3	2013	**5.4**	**0.12**	0.11	0.12	5.1	0.007	5.00	0.27	0.28	652	0.005	0.031
1.2 < displ < 2.5	175-750	Tier 3	2014	**5.6**	**0.11**	0.10	0.11	5.3	0.007	5.00	0.28	0.29	652	0.006	0.031
2.5 < displ < 5	>750	Tier 3	2013	**5.6**	**0.11**	0.10	0.11	5.3	0.007	5.00	0.28	0.29	652	0.006	0.031
3.5 ≤ D < 7		Tier 3	2012	**5.8**	**0.11**	0.10	0.11	5.5	0.007	5.00	0.29	0.31	652	0.006	0.031
	>3700	Tier 4	2014		**0.12**	0.11	0.12	**1.8**	0.007	5.00	**0.19**	0.20	652	0.004	0.031
	2000-3700	Tier 4	2014		**0.04**	0.04	0.04	**1.8**	0.007	5.00	**0.19**	0.20	652	0.004	0.031
	1400-2000	Tier 4	2016		**0.04**	0.04	0.04	**1.8**	0.007	5.00	**0.19**	0.20	652	0.004	0.031
	600-1400	Tier 4	2017		**0.04**	0.04	0.04	**1.8**	0.007	5.00	**0.19**	0.20	652	0.004	0.031
Category 2			MY												
>2.5	>37	Tier 1	2004		0.40	0.36	0.40	**17.0**	0.007	8.50	0.95	1.00	652	0.019	0.031
5.0 ≤ D < 15	all	Tier 2	2007	**7.8**	**0.27**	0.24	0.27	7.4	0.007	**5.00**	0.39	0.41	652	0.008	0.031
15 ≤ D < 20	< 3300 kW	Tier 2	2007	**8.7**	**0.50**	0.45	0.50	8.3	0.007	**5.00**	0.44	0.46	652	0.009	0.031
15 ≤ D < 20	≥ 3300 kW	Tier 2	2007	**9.8**	**0.50**	0.45	0.50	9.3	0.007	**5.00**	0.49	0.52	652	0.010	0.031
20 ≤ D < 25	all	Tier 2	2007	**9.8**	**0.50**	0.45	0.50	9.3	0.007	**5.00**	0.49	0.52	652	0.010	0.031
25 ≤ D < 30	all	Tier 2	2007	**11.0**	**0.50**	0.45	0.50	10.5	0.007	**5.00**	0.55	0.58	652	0.011	0.031
7 ≤ D < 15	<2000	Tier 3	2013	**6.2**	**0.14**	0.12	0.14	5.9	0.007	**5.00**	0.31	0.33	652	0.006	0.031
7 ≤ D < 15	2000-3700	Tier 3	2013	**7.8**	**0.14**	0.12	0.14	7.4	0.007	**5.00**	0.39	0.41	652	0.008	0.031
15 ≤ D < 20	<2000	Tier 3	2014	**7.0**	**0.34**	0.30	0.34	6.7	0.007	**5.00**	0.35	0.37	652	0.007	0.031
20 ≤ D < 25	<2000	Tier 3	2014	**9.8**	**0.27**	0.24	0.27	9.3	0.007	**5.00**	0.49	0.52	652	0.010	0.031
25 ≤ D < 30	<2000	Tier 3	2014	**11.0**	**0.27**	0.24	0.27	10.5	0.007	**5.00**	0.55	0.58	652	0.011	0.031
all	2000-3700	Tier 4	2014		**0.04**	0.04	0.04	**1.8**	0.007	5.00	**0.19**	0.20	652	0.004	0.031
<15	>3700	Tier 4	2014		**0.12**	0.11	0.12	**1.8**	0.007	5.00	**0.19**	0.20	652	0.004	0.031
15 ≤ D < 30	>3700	Tier 4	2014		**0.25**	0.22	0.25	**1.8**	0.007	5.00	**0.19**	0.20	652	0.004	0.031
all	>3700	Tier 4	2016		**0.06**	0.05	0.06	**1.8**	0.007	5.00	**0.19**	0.20	652	0.004	0.031
all	1400-2000	Tier 4	2016		**0.04**	0.04	0.04	**1.8**	0.007	5.00	**0.19**	0.20	652	0.004	0.031
all	600-1400	Tier 4	2017		**0.04**	0.04	0.04	**1.8**	0.007	5.00	**0.19**	0.20	652	0.004	0.031

Source:
Federal Marine Compression-Ignition Engines - Exhaust Emission Standards Reference Guide, http://epa.gov/OMS/standards/nonroad/marineci.htm
Amendments to the Regulations to Reduce Emissions From Diesel Engines on Commercial Harbor Craft Operated Within California Waters and 24 Nautical Miles of the California Baseline. ARB 2011. Table 9, Compliance Dates for Engines on Crew and Supply Vessels Nationwide.
http://www.arb.ca.gov/regact/2010/chc10/frochc931185.pdf
EPA Tier 2 and Tier 3 emission standards are reported as NOx+THC. 5% is HC per Carl Moyer Program guidelines.
SOx emission factor is based on 15 ppm fuel sulfur content.
PM2.5 is 89% of PM10, per SCAQMD 2006 Final Methodology to Calculate PM2.5 and PM 2.5 Significance Thresholds, Table 5.
CO2 and N20 emission factors are from IVL: Methodology for Calculating Emissions from Ships: Update on Emission Factors, 2004, also summarized in POLA 2009 Emissions Inventory, Appendix B. CH4 is 2% of HC, per IVL study
Bold numbers represent actual emission standards.

Table B-13.
SOx Emission Factor

Harbor Craft	0.007399563 g/hp-hr	
Dredging Equipment	use OFFROAD BSCF and convert to g SOx /hp-hr	
SOx (gms/hp-hr) = (S content in X/1,000,000) x (MW SO2/ MW S) x BSF =		
Where:		
X = S content in parts per million (ppm)		15 ppm
S MW = Molecular Weight		32
SO2 MW = Molecular Weight		64
BSFC for harbor craft = Brake Specific Fuel Consumption (per CARB 2007 Harbor Craft Methodology)		184 (g/hp-hr)

Table B-14.
Habor Craft Load Factor

Type	Main Engine	Auxiliary Engine
Tugboat	0.5	0.31

Source:
2011 CARB Commercial Harbor Craft Emission Inventory. Access dabatase available at: https://www.arb.ca.gov/msei/categories.htm#offroad_motor_vehicles. Last accessed 5/31/18.

Table B-15.
Truck Activity and Emissions

	Activity				Emissions (lb/yr)									
Year	Annual Trucks	Distance Traveled (mi/1-way)	Number Trips/Call	Idling Time (hr/call)	PM10	PM2.5	NOX	SOX	CO	VOC	CO2	CH4	N2O	CO2e
	17,456	88	2											
2020 Transit On-Site					5.07	2.62	232.84	0.68	34.48	9.64	71,691.41	0.45	11.27	75,194.17
2020 Transit Off-Site		0.5	2		893.18	461.35	40,979.16	119.21	6,068.50	1,696.18	12,617,688.56	78.78	1,983.32	13,234,173.73
2020 Idling During Transit					0.10	0.09	289.65	0.45	173.21	16.63	47,905.00	0.77	7.53	50,255.52
2020 On-Site Idling				0.33	1.71	1.57	581.63	0.86	502.16	89.65	81,276.59	0.00	0.00	81,276.59
2020 On-Site Total					6.79	4.20	814.47	1.54	536.64	99.29	152,968.01	0.45	11.27	156,470.76
2020 Total					900.07	465.64	42,083.27	121.20	6,778.35	1,812.10	12,818,561.56	80.00	2,002.12	13,440,900.02

Notes:
Activity provided by Contanda.
Distance travelled based on average of routes from Google Earth.
Idling time onsite assumed as 20 minutes per call.

Table B-16.
Truck Distances to SJAPCD Boundary

Direction	Distance (mi)	Route
N	30	Along 5 FWY N to SJAPCD boundary at San Joaquin County boundary.
S	266	Along 5 FWY S to SJAPCD boundary at Lebec in Kern County.
E	26	Along CA 4 HWY E to SJAPCD boundary at San Joaquin County boundary.
W	30	Along 5 FWY S and 205 FWY W to SJAPCD boundary at San Joaquin County boundary.

Notes:
Distances are based on Google Earth measurements.

Table B-17.
EMFAC Output
EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: SAN JOAQUIN
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Populatior	VMT	Trips	ROG_RUN	ROG_IDLE	ROG_STRE	ROG_HOT	ROG_RUN	ROG_REST	ROG_DIUR
SAN JOAQUIN	2020	T7 other p	Aggregate	Aggregate	DSL	28.87698	4629.534	219.4651	0.25043	1.642471	0	0	0	0	0

Table B-17.
EMFAC Output
EMFAC2017 (v1.0.2) Emiss
Region Type: County
Region: SAN JOAQUIN
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMF
Units: miles/day for VMT,

Region	Calendar Y	TOG_RUNI	TOG_IDLE	TOG_STRE	TOG_HOT	TOG_RUNI	TOG_REST	TOG_DIUR	CO_RUNE	CO_IDLEX	CO_STREX	NOx_RUNI	NOx_IDLE	NOx_STRE	CO2_RUNI	CO2_IDLE	CO2_STRE	CH4_RUNI	CH4_IDLE
SAN JOAQUIN	2020	0.285096	1.869828	0	0	0	0	0	0.895977	17.10392	0	6.050324	28.60111	1.035967	1862.925	4730.344	0	0.011632	0.076289

Table B-17.
EMFAC Output
EMFAC2017 (v1.0.2) Emiss
Region Type: County
Region: SAN JOAQUIN
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMF
Units: miles/day for VMT,

Region	Calendar Y	CH4_STRE	PM10_RUI	PM10_IDL	PM10_STR	PM10_PM	PM10_PM	PM2_5_RU	PM2_5_ID	PM2_5_ST	PM2_5_PI	PM2_5_PI	SOx_RUNE	SOx_IDLEX	SOx_STRE	N2O_RUN	N2O_IDLE	N2O_STRE
SAN JOAQUIN	2020	0	0.034133	0.009601	0	0.036	0.06174	0.032656	0.009186	0	0.009	0.02646	0.0176	0.04469	0	0.292826	0.743544	0

Table B-17.
EMFAC Output

Onsite Idling Emission Factors
CARB EMFAC2011 idling emission rates document. https://www.arb.ca.gov/msei/categories.htm#onroad_motor_vehicles. Last accessed 11/8/18.

CY	EMFAC2007 Vehicle Category	Fuel_Type	air_basin	season	HC (g/hr-veh)	CO (g/hr-veh)	NOX (g/hr-veh)	PM10 (g/hr-veh)	PM2.5 (g/hr-veh)	CO2 (g/hr-veh)	CO2 (with Pavley+LCFS) (g/hr-veh)	TOG (g/hr-veh)	ROG (g/hr-veh)	Sox (g/hr-veh)
2020	HHDT	D	SJV	a	5.518568	39.14631	45.34178	0.133419	0.122746	7039.998	6335.998	7.95612	6.988715	0.067165

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: SAN JOAQUIN
Calendar Year: 2019
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	Calendar Y	Vehicle Ca	Model Yea	Speed	Fuel	Populatior	VMT	Trips	ROG_RUN	ROG_IDLE	ROG_STRE	ROG_HOT	ROG_RUN	ROG_REST	ROG_DIUR
SAN JOAQUIN	2020	LDA	Aggregate	Aggregate	GAS	277067.7	11061532	1295985	0.012734	0	0.312582	0.132414	0.257683	0.251157	0.338591
SAN JOAQUIN	2020	LDA	Aggregate	Aggregate	DSL	2004.564	85052.65	9483.163	0.015636	0	0	0	0	0	0
SAN JOAQUIN	2020	LDA	Aggregate	Aggregate	ELEC	2936.101	113174.9	14784.97	0	0	0	0.004888	0	0.007252	0.024367
SAN JOAQUIN	2020	LDT1	Aggregate	Aggregate	GAS	28521.1	1002742	128013.8	0.036145	0	0.565358	0.306975	1.060365	0.593277	0.901738
SAN JOAQUIN	2020	LDT1	Aggregate	Aggregate	DSL	27.12201	487.9541	94.24633	0.172184	0	0	0	0	0	0
SAN JOAQUIN	2020	LDT1	Aggregate	Aggregate	ELEC	53.81137	2101.723	271.2899	0	0	0	0.004888	0	0.007252	0.024367

Table B-17.
EMFAC Output

Onsite Idling Emission Fac
CARB EMFAC2011 idling e

EMFAC20
07
Vehicle
CY Category
2020 HHDT

EMFAC2017 (v1.0.2) Emiss
Region Type: County
Region: SAN JOAQUIN
Calendar Year: 2019
Season: Annual
Vehicle Classification: EMF
Units: miles/day for VMT,

Region	Calendar Y	TOG_RUNI	TOG_IDLE	TOG_STRE	TOG_HOT	TOG_RUNI	TOG_REST	TOG_DIUR	CO_RUNE	CO_IDLEX	CO_STREX	NOx_RUNI	NOx_IDLE	NOx_STRE	CO2_RUNI	CO2_IDLE	CO2_STRE	CH4_RUNI	CH4_IDLE
SAN JOAQUIN	2020	0.01857	0	0.342235	0.132414	0.257683	0.251157	0.338591	0.735511	0	2.461421	0.053424	0	0.235101	281.4339	0	58.92378	0.003188	0
SAN JOAQUIN	2020	0.017801	0	0	0	0	0	0	0.205548	0	0	0.128741	0	0	213.735	0	0	0.000726	0
SAN JOAQUIN	2020	0	0	0	0.004888	0	0.007252	0.024367	0	0	0	0	0	0	0	0	0	0	0
SAN JOAQUIN	2020	0.052703	0	0.618991	0.306975	1.060365	0.593277	0.901738	1.558539	0	2.786191	0.155945	0	0.366873	327.8197	0	70.27293	0.008073	0
SAN JOAQUIN	2020	0.19602	0	0	0	0	0	0	1.197038	0	0	1.168507	0	0	440.7747	0	0	0.007998	0
SAN JOAQUIN	2020	0	0	0	0.004888	0	0.007252	0.024367	0	0	0	0	0	0	0	0	0	0	0

Table B-17.
EMFAC Output

Onsite Idling Emission Fac
CARB EMFAC2011 idling e

EMFAC20
07
Vehicle
CY Category
2020 HHDT

EMFAC2017 (v1.0.2) Emiss
Region Type: County
Region: SAN JOAQUIN
Calendar Year: 2019
Season: Annual
Vehicle Classification: EMF
Units: miles/day for VMT,

Region	Calendar Y	CH4_STRE	PM10_RUI	PM10_IDL	PM10_STR	PM10_PM	PM10_PM	PM2_5_RU	PM2_5_ID	PM2_5_ST	PM2_5_PI	PM2_5_PI	SOx_RUNE	SOx_IDLEX	SOx_STRE	N2O_RUN	N2O_IDLE	N2O_STRE
SAN JOAQUIN	2020	0.066585	0.001483	0	0.002121	0.008	0.03675	0.001364	0	0.00195	0.002	0.01575	0.002785	0	0.000583	0.005531	0	0.029448
SAN JOAQUIN	2020	0	0.009041	0	0	0.008	0.03675	0.008649	0	0	0.002	0.01575	0.002021	0	0	0.033596	0	0
SAN JOAQUIN	2020	0	0	0	0	0.008	0.03675	0	0	0	0.002	0.01575	0	0	0	0	0	0
SAN JOAQUIN	2020	0.106331	0.002301	0	0.003293	0.008	0.03675	0.002116	0	0.003028	0.002	0.01575	0.003244	0	0.000695	0.011103	0	0.034779
SAN JOAQUIN	2020	0	0.136758	0	0	0.008	0.03675	0.130842	0	0	0.002	0.01575	0.004167	0	0	0.069284	0	0
SAN JOAQUIN	2020	0	0	0	0	0.008	0.03675	0	0	0	0.002	0.01575	0	0	0	0	0	0

Table B-18.
Switching Fuel Usage Determination

Parameter	Value	Units	Reference
Rail cars per year - Baseline	0	rail cars per year	Project Description
Rail cars per year - Project	3600	rail cars per year	Project Description
Rail cars per train	10	rail cars per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Manifest trains per year - Baseline	0	trains per year	Calculated
Manifest trains per year - Project	360	trains per year	Calculated
Quantity of locomotives required per switch	1	per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Port of Stockton switching events, manifest rail	3	per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Other switching events within San Joaquin Valley, manifest rail	1	per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Hours of use per train switch	2	hour	Eco-Energy Liquid Bulk Receiving Terminal EIR
Average locomotive power over typical switch duty cycle	177	bhp	Eco-Energy Liquid Bulk Receiving Terminal EIR: Locomotive Emission Standards, Regulatory Support Document, Appendix B, EPA-420-R-98-101, April 1998
Power to fuel consumption conversion factor	15.2	bhp-hr/gal	Eco-Energy Liquid Bulk Receiving Terminal EIR: Emission Factors for Locomotives, EPA-420-F-09-025, April 2009
Fuel used per hour per locomotive	11.64	gal/hr/locomotive	Calculated
Fuel used per train, manifest rail	93.2	gal/train	Calculated

Table B-19.
Project (2020) Average Switching Emissions

Pollutant	Switching Locomotive Emission Factor (g/gal)	Emissions Rate (Manifest Rail) (lb/train)	Annual Switching Emissions (lb/yr)	Annual Switching Emissions (ton/yr)
NOx	81.21	16.68	6,004.35	3.00
PM10	2.91	0.60	215.13	0.11
PM2.5	2.8	0.58	208.68	0.10
VOC	4.7	0.96	344.87	0.17
CO	19.46	4.00	1,438.48	0.72
SOx	0.09	0.02	6.94	0.00
CO2e	10,208.00	2096.46	754,726.82	377.36

CO2e annual emissions are presented in short tons of CO2e per year.
Source: Reflects switching fleet provided by Central California raction Company (CCT) and emission factors from CARB 2017 Short Line / Class III Documentation. La
PM2.5 is 97% of PM10
HC emission factor convered to VOC = 1.053 * HC

Table B-20.
SO2 Emission Factor - Switchers

SO2 (g/gal)=	0.09	
(fuel density) * (MW SO2/ MW S) * (S content of fuel) * (conversion factor)		
Where:		
Fuel density	3,200	g/gal
the fraction of fuel sulfur converted to SO2	97.8%	
S content of fuel in parts per million (ppm)	15	ppm
S MW = Molecular Weight	32	
SO2 MW = Molecular Weight	64	

Table B-21.
CO2 Emission Factor - Switchers

CO2 (g/gal)=	10,208.00	
(fuel density) * (MW CO2/ MW C) * (C content of fuel)		
Where:		
Fuel density	3,200	g/gal
the fraction of fuel sulfur converted to CO2	87%	
C MW = Molecular Weight	12	
CO2 MW = Molecular Weight	44	

Table B-22.

Line- Haul Fuel Usage Determination (within SJV north to border of SJV and south to Fresno switch location)

Parameter	Value	Units	Reference
Baseline			
Rail cars per year	0	rail cars per year	Project Description
Manifest trains per year	0	trains per year	Calculated
Maximum number of trains per day	0	trains per day	Eco-Energy Liquid Bulk Receiving Terminal EIR
Project			
Rail cars per year	3600	rail cars per year	Project Description
Manifest trains per year	360	trains per year	Calculated
Maximum number of trains per day	1	trains per day	Eco-Energy Liquid Bulk Receiving Terminal EIR
Locomotive and Train Characteristics			
Average number of locomotives per train (Fresno to Stockton)	1	locomotives per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Average locomotive weight	240	tons	Eco-Energy Liquid Bulk Receiving Terminal EIR: BNSF 2013 (http://www.bnsf.com/tour/)
Average locomotive weight	218	metric tonnes	Calculated
Apportioned locomotive weight	217.7	metric tonnes	Calculated
Total railcars per train	10	rail cars per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Product railcars on train	10	rail cars per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Buffer railcars on train	2	rail cars per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Railcar load limit	198,000	pounds	Eco-Energy Liquid Bulk Receiving Terminal EIR: DOT-111 Tank Car (https://en.wikipedia.org/wiki/DOT-111_tank_car)
Railcar load limit	90	metric tonnes	Calculated, conversion
Railcar empty weight	65000	pounds per car	Eco-Energy Liquid Bulk Receiving Terminal EIR: http://www.arleasing.com/pages/products/SpecSheets/SulfuricAcid.pdf
Railcar empty weight	29	metric tonnes per car	Calculated, conversion
Weight of train (empty)	572	metric tonnes	Calculated
Weight of train (empty)	630	tons	Calculated, conversion
Weight of train (full)	1295	metric tonnes	Calculated
Weight of train (full)	1428	tons	Calculated, conversion
Distance within San Joaquin Valley (northern route), one-way	13	miles	Eco-Energy Liquid Bulk Receiving Terminal EIR: Google Earth
Distance within San Joaquin Valley (southern route), one-way to Fresno switch location	126	miles	Eco-Energy Liquid Bulk Receiving Terminal EIR: Google Earth
Route mix (northern)	50%		Eco-Energy Liquid Bulk Receiving Terminal EIR
Route mix (southern)	50%		Eco-Energy Liquid Bulk Receiving Terminal EIR
Average length of trip (both routes)	69.5	miles	Calculated
UPRR diesel fuel used, 2015	917,633,780	gallons	Eco-Energy Liquid Bulk Receiving Terminal EIR: UP Form R-1 for 2017, schedule 750, line 1
UPRR total gross-ton miles, 2015	981,451,930	1000 ton-miles	Eco-Energy Liquid Bulk Receiving Terminal EIR: UP Form R-1 for 2017, schedule 755, line 104
UPRR fuel consumption index, with locomotives	1069.5	gross ton-miles/gal	Calculated
Fuel used per train, incoming (full)	93	gallons	Calculated
Fuel used per train, outgoing (empty)	41	gallons	Calculated

Table B-23.

Line- Haul Fuel Usage Determination (within SJV south from Fresno switch location to SJV border)

Parameter	Value	Units	Reference
Baseline			
Rail cars per year	0	rail cars per year	Project Description
Manifest trains per year	0	trains per year	Calculated
Maximum number of trains per day	0	trains per day	Eco-Energy Liquid Bulk Receiving Terminal EIR
Project			
Rail cars per year	3600	rail cars per year	Project Description
Manifest trains per year	360	trains per year	Calculated
Maximum number of trains per day	1	trains per day	Eco-Energy Liquid Bulk Receiving Terminal EIR
Locomotive and Train Characteristics			
Average number of locomotives per train (Fresno to Stockton)	3	locomotives per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Average locomotive weight	240	tons	Eco-Energy Liquid Bulk Receiving Terminal EIR: BNSF 2013 (http://www.bnsf.com/tour/)
Average locomotive weight	218	metric tonnes	Calculated
Apportioned locomotive weight	21.8	metric tonnes	Calculated
Total railcars per train	100	rail cars per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Product railcars on train	10	rail cars per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Buffer railcars on train	2	rail cars per train	Eco-Energy Liquid Bulk Receiving Terminal EIR
Railcar load limit	198,000	pounds	Eco-Energy Liquid Bulk Receiving Terminal EIR: DOT-111 Tank Car (https://en.wikipedia.org/wiki/DOT-111_tank_car)
Railcar load limit	90	metric tonnes	Calculated, conversion
Railcar empty weight	65000	pounds per car	Eco-Energy Liquid Bulk Receiving Terminal EIR: http://www.arleasing.com/pages/products/SpecSheets/SulfuricAcid.pdf
Railcar empty weight	29	metric tonnes per car	Calculated, conversion
Weight of train (empty)	419	metric tonnes	Calculated
Weight of train (empty)	462	tons	Calculated, conversion
Weight of train (full)	1143	metric tonnes	Calculated
Weight of train (full)	1260	tons	Calculated, conversion
Distance within San Joaquin Valley (northern route), one-way	0	miles	Eco-Energy Liquid Bulk Receiving Terminal EIR: Google Earth
Distance within San Joaquin Valley (southern route), one-way from Fresno to California border	157	miles	Eco-Energy Liquid Bulk Receiving Terminal EIR: Google Earth
Route mix (northern)	0%		Eco-Energy Liquid Bulk Receiving Terminal EIR
Route mix (southern)	100%		Eco-Energy Liquid Bulk Receiving Terminal EIR
Average length of trip (both routes)	157.0	miles	Calculated
UPRR diesel fuel used, 2015	917,633,780	gallons	Eco-Energy Liquid Bulk Receiving Terminal EIR: UP Form R-1 for 2017, schedule 750, line 1
UPRR total gross-ton miles, 2015	981,451,930	1000 ton-miles	Eco-Energy Liquid Bulk Receiving Terminal EIR: UP Form R-1 for 2017, schedule 755, line 104
UPRR fuel consumption index, with locomotives	1069.5	gross ton-miles/gal	Calculated
Fuel used per train, incoming (full)	185	gallons	Calculated
Fuel used per train, outgoing (empty)	68	gallons	Calculated

Table B-24.

Project (2020) Average Line-Haul Emissions (within SJV north to border of SJV and south to Fresno switch location)

Pollutant	Line-Haul Locomotive Emission Factor (g/gal)	Emissions Rate (Manifest Rail) (lb/train)	Annual Line-Haul Emissions (lb/yr)	Annual Line-Haul Emissions (ton/yr)
NOx	86.82	25.60	9,214.53	4.61
PM10	1.57	0.46	166.41	0.08
PM2.5	1.5	0.45	161.42	0.08
VOC	2.70	0.80	286.40	0.14
CO	26.62	7.85	2,825.32	1.41
SOx	0.09	0.03	9.96	0.00
CO2e	10,208.00	3009.53	1,083,429.48	541.71

CO2e annual emissions are presented in short tons of CO2e per year.

Source: CARB. 2017 Line Haul / Class I Documentation https://www.arb.ca.gov/msei/ordiesel.htm and 2017 Emissions Inventory Aggregated at County/Air Basin/State. Last accesse

PM2.5 is 97% of PM10

HC emission factor convered to VOC = 1.053 * HC

Table B-25.
Project (2020) Average Line-Haul Emissions (within SJV south from Fresno switch location to SJV border)

Pollutant	Line-Haul Locomotive Emission Factor (g/gal)	Emissions Rate (Manifest Rail) (lb/train)	Annual Line-Haul Emissions (lb/yr)
NOx	86.82	48.38	17,417.10
PM10	1.57	0.87	314.55
PM2.5	1.52	0.85	305.11
HC	2.70	1.50	541.34
CO	26.62	14.83	5,340.36
SOx	0.09	0.05	18.84
CO2e	10208.00	5688.54	2,047,874.20

CO2e annual emissions are presented in short tons of CO2e per year.
Source: CARB. 2017 Line Haul / Class I Documentation https://www.arb.ca.gov/msei/ordiesel.htm and 2017 Emissions Inventory Aggregated at County/Air Ba
PM2.5 is 97% of PM10
HC emission factor convered to VOC = 1.053 * HC

Table B-26.

SO2 Emission Factor - Line Haul

SO2 (g/gal)=	0.09	
(fuel density) * (MW SO2/ MW S) * (S content of fuel) * (conversion factor)		
Where:		
Fuel density	3,200	g/gal
the fraction of fuel sulfur converted to SO2	97.8%	
S content of fuel in parts per million (ppm)	15	ppm
S MW = Molecular Weight	32	
SO2 MW = Molecular Weight	64	

Table B-27.

CO2 Emission Factor - Line Haul

CO2 (g/gal)=	10,208.00	
(fuel density) * (MW CO2/ MW C) * (C content of fuel)		
Where:		
Fuel density	3,200	g/gal
the fraction of fuel sulfur converted to CO2	87%	
C MW = Molecular Weight	12	
CO2 MW = Molecular Weight	44	

Table B-28.

U.S. EPA Emission Factors (g/gal)					Tier Distribution	
	PM_{10}	HC	NO_x	CO	2019	2025
Pre-Tier	6.66	9.98	270.4	26.62	0%	0%
Tier 0	6.66	9.98	178.88	26.62	0%	0%
Tier 0+	4.16	6.24	149.76	26.62	2%	0%
Tier 1	6.66	9.78	139.36	26.62	0%	0%
Tier 1+	4.16	6.03	139.36	26.62	2%	0%
Tier 2	3.74	5.41	102.96	26.62	5%	0%
Tier 2+	1.66	2.7	102.96	26.62	38%	8%
Tier 3	1.66	2.7	102.96	26.62	32%	31%
Tier 4	0.31	0.83	20.8	26.62	21%	60%

Source:

CARB. 2017 Line Haul / Class I Documentation. Last accessed 10/2/2018: https://www.arb.ca.gov/msei/ordiesel.htm

Tier distribution calculated by applying CARB Tier distribution for analysis year. CARB. 2017 Emissions Inventory Aggregated at County/Air Basin/State. Last accessed 10/2/2018:

Table B-29.

Line Haul Project Emission Factors (g/gal)

	PM_{10}	HC	NO_x	CO
2019	1.57	2.56	86.82	26.62
2025	0.86	1.59	53.86	26.62

Table B-30.

Line Haul Locomotives Tier Distribution

	Pre-Tier	Tier 0	Tier 0+	Tier 1	Tier 1+	Tier 2	Tier 2+	Tier 3	Tier 4
2019	0%	0%	2%	0%	2%	5%	38%	32%	21%
2020	0%	0%	1%	0%	2%	0%	36%	33%	28%
2021	0%	0%	1%	0%	1%	0%	31%	33%	34%
2022	0%	0%	0%	0%	1%	0%	24%	34%	40%
2023	0%	0%	0%	0%	1%	0%	19%	34%	46%
2024	0%	0%	0%	0%	1%	0%	13%	32%	53%
2025	0%	0%	0%	0%	0%	0%	8%	31%	60%
2026	0%	0%	0%	0%	0%	0%	3%	30%	67%
2027	0%	0%	0%	0%	0%	0%	3%	24%	73%
2028	0%	0%	0%	0%	0%	0%	2%	18%	80%
2029	0%	0%	0%	0%	0%	0%	2%	13%	86%
2030	0%	0%	0%	0%	0%	0%	1%	8%	91%
2031	0%	0%	0%	0%	0%	0%	1%	2%	97%
2032	0%	0%	0%	0%	0%	0%	0%	2%	97%
2033	0%	0%	0%	0%	0%	0%	0%	2%	98%
2034	0%	0%	0%	0%	0%	0%	0%	2%	98%
2035	0%	0%	0%	0%	0%	0%	0%	1%	99%
2036	0%	0%	0%	0%	0%	0%	0%	1%	99%
2037	0%	0%	0%	0%	0%	0%	0%	0%	100%
2038	0%	0%	0%	0%	0%	0%	0%	0%	100%
2039	0%	0%	0%	0%	0%	0%	0%	0%	100%
2040	0%	0%	0%	0%	0%	0%	0%	0%	100%

Source:

CARB. 2017 Emissions Inventory Aggregated at County/Air Basin/State. Last accessed 10/2/2018: https://www.arb.ca.gov/msei/ordiesel.htm

Table B-31.

CCT Switchers **Switcher Emission Factors (g/gal)**

	Engine Tier	Tier Distribution	PM_{10}	HC	NO_x	CO
4 SW 1500s	Tier 0	57%	4.864	7.296	130.72	19.456
3 Brookville Genset locomotives Tier IV	Tier 4	43%	0.304	0.608	15.2	19.456

Table B-34.

Switchers Project Emission Factors (g/gal)

	PM_{10}	HC	NO_x	CO
2020	2.91	4.43	81.21	19.46

Table B-32.

Switcher Emission Factors (g/bhp-hr)

	PM_{10}	HC	NO_x	CO
Pre-Tier	0.32	0.48	13	1.28
Tier 0	0.32	0.48	8.6	1.28
Tier 0+	0.2	0.3	7.2	1.28
Tier 1	0.32	0.47	6.7	1.28
Tier 1+	0.2	0.29	6.7	1.28
Tier 2	0.18	0.26	4.95	1.28
Tier 2+	0.08	0.13	4.95	1.28
Tier 3	0.08	0.13	4.95	1.28
Tier 4	0.02	0.04	1	1.28

Table B-33.

Switcher Emission Factors (g/gal)

	PM_{10}	HC	NO_x	CO
Pre-Tier	4.864	7.296	197.6	19.456
Tier 0	4.864	7.296	130.72	19.456
Tier 0+	3.04	4.56	109.44	19.456
Tier 1	4.864	7.144	101.84	19.456
Tier 1+	3.04	4.408	101.84	19.456
Tier 2	2.736	3.952	75.24	19.456
Tier 2+	1.216	1.976	75.24	19.456
Tier 3	1.216	1.976	75.24	19.456
Tier 4	0.304	0.608	15.2	19.456

Source:

CARB. 2017 Short Line / Class III Documentation. Last accessed 10/2/2018: https://www.arb.ca.gov/msei/ordiesel.htm

Conversion Factors (bhp-hr/gal)

Switchers	15.2

Source: EPA, Emission Factors for Locomotives 420f09025, April 2009.

Switching operations provided by Central California Traction Company (CCT).

CCT operates 7 locomotives (4 SW 1500s and 3 Brookville Genset locomotives Tier IV), per CCT website (last accessed 10/2/2018) http://www.cctrailroad.com/

Table B-35.

Employee Vehicle Activity and Emissions

	Activity			Emissions (lb/yr)									
Year	Annual Employee Vehicles	Distance Traveled (mi/1-way)	Number Trips/Call	PM10	PM2.5	NOX	SOX	CO	VOC	CO2	CH4	N2O	CO2e
2019	7,300	16.8	2	25	10	33	2	428	8	152,553	2	3	153,476

Notes:

Activity provided in NOP, October 2018. 20 employees.

Distance travelled based on CalEEMod default for home to work trips in San Joaquin County.

Table B-36.

Emergency Engine Activity and Emissions

				Emissions (lb/yr)									
Year	Activity (hr/yr)	Hp	Load Factor	PM10	PM2.5	NOX	SOX	CO	VOC	CO2	CH4	N2O	CO2e
2020	100	25	0.41	0	0	9	0	9	2	1,284	0	0	1,287

Notes:

25 HP, to be used for emergency lighting, backup power for truck scales, pumps, etc

SJVAPCD Rule 4702 limits emergency engine use to 100 hr/yr.

Table B-37.

Emergency Engine Emission Factors (g/bhp-hr)

Year	Low HP	High HP	PM10	PM2.5	NOX	SOX	CO	VOC	CO2	CH4	N2O
2020	26	50	0.194	0.194	4.075	0.007	3.995	0.691	568.299	0.062	

Source: CalEEMod

Table B-38.
Global Warming Potentials (GWP)

CO2	CH4	N2O
1	21	310

Source: The Climate Registry, General Protocols, v. 2.0, Table B.2. March 2013.

Appendix C

CalEEMod Output

Stockton Contanda Rocket Construction

San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	155.00	1000sqft	3.56	155,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	2			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Provided by applicant.

Off-road Equipment - Provided by applicant.

Off-road Equipment - Provided by applicant.

Off-road Equipment - Provided by applicant.

Off-road Equipment - Provided by applicant.

Off-road Equipment - Provided by applicant.

Trips and VMT - Provided by applicant.

Architectural Coating - Tank coating.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	77,500.00	162,106.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	232,500.00	0.00
tblConstructionPhase	NumDays	5.00	30.00
tblConstructionPhase	NumDays	8.00	73.00
tblConstructionPhase	NumDays	230.00	159.00
tblConstructionPhase	NumDays	18.00	30.00
tblConstructionPhase	NumDays	18.00	28.00
tblOffRoadEquipment	HorsePower	231.00	225.00
tblOffRoadEquipment	HorsePower	158.00	100.00
tblOffRoadEquipment	HorsePower	89.00	110.00
tblOffRoadEquipment	HorsePower	132.00	150.00
tblOffRoadEquipment	HorsePower	247.00	120.00
tblOffRoadEquipment	HorsePower	97.00	100.00
tblOffRoadEquipment	HorsePower	97.00	100.00
tblOffRoadEquipment	HorsePower	46.00	25.00
tblOffRoadEquipment	HorsePower	158.00	100.00
tblOffRoadEquipment	HorsePower	65.00	60.00
tblOffRoadEquipment	HorsePower	46.00	25.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	7.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	4.00
tblOffRoadEquipment	PhaseName		Site Preparation
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	394.00
tblTripsAndVMT	HaulingTripNumber	0.00	150.00
tblTripsAndVMT	HaulingTripNumber	0.00	425.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3005	2.8383	1.8835	4.1900e-003	0.1428	0.1373	0.2802	0.0639	0.1283	0.1921	0.0000	368.3513	368.3513	0.0797	0.0000	370.3436

2020	0.6733	1.0503	0.7220	1.6500e-003	0.0232	0.0481	0.0712	6.2400e-003	0.0448	0.0511	0.0000	143.7986	143.7986	0.0327	0.0000	144.6170
Maximum	**0.6733**	**2.8383**	**1.8835**	**4.1900e-003**	**0.1428**	**0.1373**	**0.2802**	**0.0639**	**0.1283**	**0.1921**	**0.0000**	**368.3513**	**368.3513**	**0.0797**	**0.0000**	**370.3436**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.3005	2.8383	1.8835	4.1900e-003	0.1428	0.1373	0.2802	0.0639	0.1283	0.1921	0.0000	368.3510	368.3510	0.0797	0.0000	370.3433
2020	0.6733	1.0503	0.7220	1.6500e-003	0.0232	0.0481	0.0712	6.2400e-003	0.0448	0.0511	0.0000	143.7985	143.7985	0.0327	0.0000	144.6168
Maximum	**0.6733**	**2.8383**	**1.8835**	**4.1900e-003**	**0.1428**	**0.1373**	**0.2802**	**0.0639**	**0.1283**	**0.1921**	**0.0000**	**368.3510**	**368.3510**	**0.0797**	**0.0000**	**370.3433**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-1-2019**	**6-30-2019**	0.4662	0.4662
2	**7-1-2019**	**9-30-2019**	1.1992	1.1992
3	**10-1-2019**	**12-31-2019**	1.4707	1.4707
4	**1-1-2020**	**3-31-2020**	1.1250	1.1250
5	**4-1-2020**	**6-30-2020**	0.6080	0.6080
		Highest	1.4707	1.4707

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7133	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7700e-003	2.7700e-003	1.0000e-005	0.0000	2.9500e-003
Energy	0.0156	0.1416	0.1190	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	535.2000	535.2000	0.0202	6.3900e-003	537.6092
Mobile	0.0879	0.9496	0.9158	4.3200e-003	0.2589	3.9700e-003	0.2628	0.0696	3.7500e-003	0.0734	0.0000	400.7036	400.7036	0.0265	0.0000	401.3650
Waste						0.0000	0.0000		0.0000	0.0000	39.0149	0.0000	39.0149	2.3057	0.0000	96.6577
Water						0.0000	0.0000		0.0000	0.0000	11.3716	56.4224	67.7940	1.1705	0.0281	105.4326
Total	**0.8167**	**1.0912**	**1.0362**	**5.1700e-003**	**0.2589**	**0.0147**	**0.2736**	**0.0696**	**0.0145**	**0.0842**	**50.3864**	**992.3288**	**1,042.7153**	**3.5229**	**0.0345**	**1,141.0675**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7133	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7700e-003	2.7700e-003	1.0000e-005	0.0000	2.9500e-003
Energy	0.0156	0.1416	0.1190	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	535.2000	535.2000	0.0202	6.3900e-003	537.6092
Mobile	0.0879	0.9496	0.9158	4.3200e-003	0.2589	3.9700e-003	0.2628	0.0696	3.7500e-003	0.0734	0.0000	400.7036	400.7036	0.0265	0.0000	401.3650
Waste						0.0000	0.0000		0.0000	0.0000	39.0149	0.0000	39.0149	2.3057	0.0000	96.6577
Water						0.0000	0.0000		0.0000	0.0000	11.3716	56.4224	67.7940	1.1705	0.0281	105.4326
Total	**0.8167**	**1.0912**	**1.0362**	**5.1700e-003**	**0.2589**	**0.0147**	**0.2736**	**0.0696**	**0.0145**	**0.0842**	**50.3864**	**992.3288**	**1,042.7153**	**3.5229**	**0.0345**	**1,141.0675**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2019	5/10/2019	5	30	Tree and vegetation removal
2	Grading	Grading	5/1/2019	8/10/2019	5	73	Underground utilities and tank foundation
3	Building Construction	Building Construction	8/1/2019	3/10/2020	5	159	Tank and pipeline construction
4	Paving	Paving	3/1/2020	4/10/2020	5	30	Asphalt paving entrance and exit truck rack
5	Architectural Coating	Architectural Coating	4/1/2020	5/10/2020	5	28	Tanks and piping coating via rolling

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 162,106; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	1	8.00	120	0.40
Site Preparation	Excavators	2	8.00	100	0.38
Grading	Excavators	2	8.00	100	0.38
Grading	Welders	4	8.00	25	0.45
Grading	Tractors/Loaders/Backhoes	2	8.00	100	0.37
Building Construction	Cranes	3	8.00	225	0.29
Building Construction	Tractors/Loaders/Backhoes	2	8.00	100	0.37
Building Construction	Skid Steer Loaders	2	8.00	60	0.37

Building Construction	Welders	7	8.00	25	0.45
Building Construction	Forklifts	3	8.00	110	0.20
Paving	Paving Equipment	1	8.00	150	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Pavers	1	8.00	130	0.42
Architectural Coating	Air Compressors	0	8.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	1.00	394.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	1.00	150.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	17	65.00	25.00	425.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	3	8.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5300e-003	0.0677	0.0709	1.0000e-004		4.2400e-003	4.2400e-003		3.9000e-003	3.9000e-003	0.0000	8.7232	8.7232	2.7600e-003	0.0000	8.7922
Total	**6.5300e-003**	**0.0677**	**0.0709**	**1.0000e-004**	**0.0903**	**4.2400e-003**	**0.0946**	**0.0497**	**3.9000e-003**	**0.0536**	**0.0000**	**8.7232**	**8.7232**	**2.7600e-003**	**0.0000**	**8.7922**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7000e-003	0.0588	8.4800e-003	1.6000e-004	3.3700e-003	2.3000e-004	3.6000e-003	9.3000e-004	2.2000e-004	1.1500e-003	0.0000	15.1420	15.1420	8.8000e-004	0.0000	15.1640
Vendor	7.0000e-005	2.0000e-003	4.0000e-004	0.0000	1.0000e-004	2.0000e-005	1.1000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4085	0.4085	3.0000e-005	0.0000	0.4093
Worker	5.6000e-004	3.9000e-004	3.9400e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.7000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8890	0.8890	3.0000e-005	0.0000	0.8897
Total	**2.3300e-003**	**0.0612**	**0.0128**	**1.7000e-004**	**4.4300e-003**	**2.6000e-004**	**4.6800e-003**	**1.2100e-003**	**2.4000e-004**	**1.4500e-003**	**0.0000**	**16.4396**	**16.4396**	**9.4000e-004**	**0.0000**	**16.4631**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.5300e-003	0.0677	0.0709	1.0000e-004		4.2400e-003	4.2400e-003		3.9000e-003	3.9000e-003	0.0000	8.7232	8.7232	2.7600e-003	0.0000	8.7922
Total	**6.5300e-003**	**0.0677**	**0.0709**	**1.0000e-004**	**0.0903**	**4.2400e-003**	**0.0946**	**0.0497**	**3.9000e-003**	**0.0536**	**0.0000**	**8.7232**	**8.7232**	**2.7600e-003**	**0.0000**	**8.7922**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7000e-003	0.0588	8.4800e-003	1.6000e-004	3.3700e-003	2.3000e-004	3.6000e-003	9.3000e-004	2.2000e-004	1.1500e-003	0.0000	15.1420	15.1420	8.8000e-004	0.0000	15.1640
Vendor	7.0000e-005	2.0000e-003	4.0000e-004	0.0000	1.0000e-004	2.0000e-005	1.1000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.4085	0.4085	3.0000e-005	0.0000	0.4093
Worker	5.6000e-004	3.9000e-004	3.9400e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.7000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8890	0.8890	3.0000e-005	0.0000	0.8897
Total	**2.3300e-003**	**0.0612**	**0.0128**	**1.7000e-004**	**4.4300e-003**	**2.6000e-004**	**4.6800e-003**	**1.2100e-003**	**2.4000e-004**	**1.4500e-003**	**0.0000**	**16.4396**	**16.4396**	**9.4000e-004**	**0.0000**	**16.4631**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0562	0.4739	0.4182	6.7000e-004		0.0285	0.0285		0.0267	0.0267	0.0000	57.1580	57.1580	0.0152	0.0000	57.5387
Total	**0.0562**	**0.4739**	**0.4182**	**6.7000e-004**		**0.0285**	**0.0285**		**0.0267**	**0.0267**	**0.0000**	**57.1580**	**57.1580**	**0.0152**	**0.0000**	**57.5387**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.5000e-004	0.0224	3.2300e-003	6.0000e-005	1.2800e-003	9.0000e-005	1.3700e-003	3.5000e-004	8.0000e-005	4.4000e-004	0.0000	5.7647	5.7647	3.3000e-004	0.0000	5.7731

Vendor	1.8000e-004	4.8700e-003	9.8000e-004	1.0000e-005	2.4000e-004	4.0000e-005	2.8000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	0.9940	0.9940	8.0000e-005	0.0000	0.9961
Worker	3.3900e-003	2.3800e-003	0.0240	6.0000e-005	5.8400e-003	4.0000e-005	5.8800e-003	1.5500e-003	4.0000e-005	1.5900e-003	0.0000	5.4083	5.4083	1.7000e-004	0.0000	5.4126
Total	**4.2200e-003**	**0.0296**	**0.0282**	**1.3000e-004**	**7.3600e-003**	**1.7000e-004**	**7.5300e-003**	**1.9700e-003**	**1.6000e-004**	**2.1400e-003**	**0.0000**	**12.1670**	**12.1670**	**5.8000e-004**	**0.0000**	**12.1818**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0562	0.4739	0.4182	6.7000e-004		0.0285	0.0285		0.0267	0.0267	0.0000	57.1580	57.1580	0.0152	0.0000	57.5386
Total	**0.0562**	**0.4739**	**0.4182**	**6.7000e-004**		**0.0285**	**0.0285**		**0.0267**	**0.0267**	**0.0000**	**57.1580**	**57.1580**	**0.0152**	**0.0000**	**57.5386**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.5000e-004	0.0224	3.2300e-003	6.0000e-005	1.2800e-003	9.0000e-005	1.3700e-003	3.5000e-004	8.0000e-005	4.4000e-004	0.0000	5.7647	5.7647	3.3000e-004	0.0000	5.7731
Vendor	1.8000e-004	4.8700e-003	9.8000e-004	1.0000e-005	2.4000e-004	4.0000e-005	2.8000e-004	7.0000e-005	4.0000e-005	1.1000e-004	0.0000	0.9940	0.9940	8.0000e-005	0.0000	0.9961
Worker	3.3900e-003	2.3800e-003	0.0240	6.0000e-005	5.8400e-003	4.0000e-005	5.8800e-003	1.5500e-003	4.0000e-005	1.5900e-003	0.0000	5.4083	5.4083	1.7000e-004	0.0000	5.4126
Total	**4.2200e-003**	**0.0296**	**0.0282**	**1.3000e-004**	**7.3600e-003**	**1.7000e-004**	**7.5300e-003**	**1.9700e-003**	**1.6000e-004**	**2.1400e-003**	**0.0000**	**12.1670**	**12.1670**	**5.8000e-004**	**0.0000**	**12.1818**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2068	1.9692	1.1944	2.3100e-003		0.1024	0.1024		0.0956	0.0956	0.0000	199.3172	199.3172	0.0556	0.0000	200.7069
Total	**0.2068**	**1.9692**	**1.1944**	**2.3100e-003**		**0.1024**	**0.1024**		**0.0956**	**0.0956**	**0.0000**	**199.3172**	**199.3172**	**0.0556**	**0.0000**	**200.7069**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2600e-003	0.0435	6.2700e-003	1.2000e-004	3.3500e-003	1.7000e-004	3.5200e-003	9.0000e-004	1.6000e-004	1.0600e-003	0.0000	11.1971	11.1971	6.5000e-004	0.0000	11.2134
Vendor	6.6500e-003	0.1817	0.0365	3.9000e-004	9.0300e-003	1.3700e-003	0.0104	2.6100e-003	1.3100e-003	3.9200e-003	0.0000	37.1043	37.1043	3.1000e-003	0.0000	37.1817
Worker	0.0165	0.0116	0.1163	2.9000e-004	0.0283	2.1000e-004	0.0285	7.5300e-003	1.9000e-004	7.7200e-003	0.0000	26.2450	26.2450	8.4000e-004	0.0000	26.2659
Total	**0.0244**	**0.2367**	**0.1590**	**8.0000e-004**	**0.0407**	**1.7500e-003**	**0.0425**	**0.0110**	**1.6600e-003**	**0.0127**	**0.0000**	**74.5464**	**74.5464**	**4.5900e-003**	**0.0000**	**74.6610**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2068	1.9692	1.1944	2.3100e-003		0.1024	0.1024		0.0956	0.0956	0.0000	199.3169	199.3169	0.0556	0.0000	200.7067
Total	**0.2068**	**1.9692**	**1.1944**	**2.3100e-003**		**0.1024**	**0.1024**		**0.0956**	**0.0956**	**0.0000**	**199.3169**	**199.3169**	**0.0556**	**0.0000**	**200.7067**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2600e-003	0.0435	6.2700e-003	1.2000e-004	3.3500e-003	1.7000e-004	3.5200e-003	9.0000e-004	1.6000e-004	1.0600e-003	0.0000	11.1971	11.1971	6.5000e-004	0.0000	11.2134
Vendor	6.6500e-003	0.1817	0.0365	3.9000e-004	9.0300e-003	1.3700e-003	0.0104	2.6100e-003	1.3100e-003	3.9200e-003	0.0000	37.1043	37.1043	3.1000e-003	0.0000	37.1817
Worker	0.0165	0.0116	0.1163	2.9000e-004	0.0283	2.1000e-004	0.0285	7.5300e-003	1.9000e-004	7.7200e-003	0.0000	26.2450	26.2450	8.4000e-004	0.0000	26.2659
Total	**0.0244**	**0.2367**	**0.1590**	**8.0000e-004**	**0.0407**	**1.7500e-003**	**0.0425**	**0.0110**	**1.6600e-003**	**0.0127**	**0.0000**	**74.5464**	**74.5464**	**4.5900e-003**	**0.0000**	**74.6610**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0877	0.8293	0.5315	1.0600e-003		0.0415	0.0415		0.0388	0.0388	0.0000	89.8273	89.8273	0.0254	0.0000	90.4632

Total	**0.0877**	**0.8293**	**0.5315**	**1.0600e-003**		**0.0415**	**0.0415**		**0.0388**	**0.0388**	**0.0000**	**89.8273**	**89.8273**	**0.0254**	**0.0000**	**90.4632**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3000e-004	0.0186	2.7000e-003	5.0000e-005	3.0100e-003	6.0000e-005	3.0700e-003	7.7000e-004	6.0000e-005	8.3000e-004	0.0000	5.0771	5.0771	2.8000e-004	0.0000	5.0842
Vendor	2.4800e-003	0.0761	0.0144	1.8000e-004	4.1400e-003	4.2000e-004	4.5600e-003	1.2000e-003	4.0000e-004	1.6000e-003	0.0000	16.8762	16.8762	1.3300e-003	0.0000	16.9096
Worker	6.8700e-003	4.6600e-003	0.0474	1.3000e-004	0.0130	9.0000e-005	0.0131	3.4500e-003	9.0000e-005	3.5400e-003	0.0000	11.6664	11.6664	3.3000e-004	0.0000	11.6747
Total	**9.8800e-003**	**0.0994**	**0.0645**	**3.6000e-004**	**0.0201**	**5.7000e-004**	**0.0207**	**5.4200e-003**	**5.5000e-004**	**5.9700e-003**	**0.0000**	**33.6197**	**33.6197**	**1.9400e-003**	**0.0000**	**33.6685**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0877	0.8293	0.5315	1.0600e-003		0.0415	0.0415		0.0388	0.0388	0.0000	89.8272	89.8272	0.0254	0.0000	90.4631
Total	**0.0877**	**0.8293**	**0.5315**	**1.0600e-003**		**0.0415**	**0.0415**		**0.0388**	**0.0388**	**0.0000**	**89.8272**	**89.8272**	**0.0254**	**0.0000**	**90.4631**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3000e-004	0.0186	2.7000e-003	5.0000e-005	3.0100e-003	6.0000e-005	3.0700e-003	7.7000e-004	6.0000e-005	8.3000e-004	0.0000	5.0771	5.0771	2.8000e-004	0.0000	5.0842
Vendor	2.4800e-003	0.0761	0.0144	1.8000e-004	4.1400e-003	4.2000e-004	4.5600e-003	1.2000e-003	4.0000e-004	1.6000e-003	0.0000	16.8762	16.8762	1.3300e-003	0.0000	16.9096
Worker	6.8700e-003	4.6600e-003	0.0474	1.3000e-004	0.0130	9.0000e-005	0.0131	3.4500e-003	9.0000e-005	3.5400e-003	0.0000	11.6664	11.6664	3.3000e-004	0.0000	11.6747
Total	**9.8800e-003**	**0.0994**	**0.0645**	**3.6000e-004**	**0.0201**	**5.7000e-004**	**0.0207**	**5.4200e-003**	**5.5000e-004**	**5.9700e-003**	**0.0000**	**33.6197**	**33.6197**	**1.9400e-003**	**0.0000**	**33.6685**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0106	0.1099	0.1151	1.8000e-004		5.8700e-003	5.8700e-003		5.4000e-003	5.4000e-003	0.0000	15.7533	15.7533	5.0900e-003	0.0000	15.8806
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0106**	**0.1099**	**0.1151**	**1.8000e-004**		**5.8700e-003**	**5.8700e-003**		**5.4000e-003**	**5.4000e-003**	**0.0000**	**15.7533**	**15.7533**	**5.0900e-003**	**0.0000**	**15.8806**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6000e-004	0.0110	2.0800e-003	3.0000e-005	6.0000e-004	6.0000e-005	6.6000e-004	1.7000e-004	6.0000e-005	2.3000e-004	0.0000	2.4302	2.4302	1.9000e-004	0.0000	2.4350
Worker	5.1000e-004	3.4000e-004	3.5000e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.7000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8615	0.8615	2.0000e-005	0.0000	0.8621
Total	**8.7000e-004**	**0.0113**	**5.5800e-003**	**4.0000e-005**	**1.5600e-003**	**7.0000e-005**	**1.6300e-003**	**4.2000e-004**	**7.0000e-005**	**4.9000e-004**	**0.0000**	**3.2917**	**3.2917**	**2.1000e-004**	**0.0000**	**3.2971**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0106	0.1099	0.1151	1.8000e-004		5.8700e-003	5.8700e-003		5.4000e-003	5.4000e-003	0.0000	15.7532	15.7532	5.0900e-003	0.0000	15.8806
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0106**	**0.1099**	**0.1151**	**1.8000e-004**		**5.8700e-003**	**5.8700e-003**		**5.4000e-003**	**5.4000e-003**	**0.0000**	**15.7532**	**15.7532**	**5.0900e-003**	**0.0000**	**15.8806**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.6000e-004	0.0110	2.0800e-003	3.0000e-005	6.0000e-004	6.0000e-005	6.6000e-004	1.7000e-004	6.0000e-005	2.3000e-004	0.0000	2.4302	2.4302	1.9000e-004	0.0000	2.4350

Worker	5.1000e-004	3.4000e-004	3.5000e-003	1.0000e-005	9.6000e-004	1.0000e-005	9.7000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8615	0.8615	2.0000e-005	0.0000	0.8621
Total	**8.7000e-004**	**0.0113**	**5.5800e-003**	**4.0000e-005**	**1.5600e-003**	**7.0000e-005**	**1.6300e-003**	**4.2000e-004**	**7.0000e-005**	**4.9000e-004**	**0.0000**	**3.2917**	**3.2917**	**2.1000e-004**	**0.0000**	**3.2971**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5635					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5635**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	5.2000e-004	5.3100e-003	1.0000e-005	1.4600e-003	1.0000e-005	1.4700e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3066	1.3066	4.0000e-005	0.0000	1.3076
Total	**7.7000e-004**	**5.2000e-004**	**5.3100e-003**	**1.0000e-005**	**1.4600e-003**	**1.0000e-005**	**1.4700e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.3066**	**1.3066**	**4.0000e-005**	**0.0000**	**1.3076**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5635					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5635**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	5.2000e-004	5.3100e-003	1.0000e-005	1.4600e-003	1.0000e-005	1.4700e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3066	1.3066	4.0000e-005	0.0000	1.3076
Total	**7.7000e-004**	**5.2000e-004**	**5.3100e-003**	**1.0000e-005**	**1.4600e-003**	**1.0000e-005**	**1.4700e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.3066**	**1.3066**	**4.0000e-005**	**0.0000**	**1.3076**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0879	0.9496	0.9158	4.3200e-003	0.2589	3.9700e-003	0.2628	0.0696	3.7500e-003	0.0734	0.0000	400.7036	400.7036	0.0265	0.0000	401.3650
Unmitigated	0.0879	0.9496	0.9158	4.3200e-003	0.2589	3.9700e-003	0.2628	0.0696	3.7500e-003	0.0734	0.0000	400.7036	400.7036	0.0265	0.0000	401.3650

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	232.50	232.50	232.50	678,786	678,786
Total	232.50	232.50	232.50	678,786	678,786

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.506092	0.032602	0.169295	0.124521	0.019914	0.005374	0.021664	0.110051	0.001797	0.001623	0.005307	0.000969	0.000792

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	381.0213	381.0213	0.0172	3.5600e-003	382.5143
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	381.0213	381.0213	0.0172	3.5600e-003	382.5143
NaturalGas Mitigated	0.0156	0.1416	0.1190	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.1787	154.1787	2.9600e-003	2.8300e-003	155.0949
NaturalGas Unmitigated	0.0156	0.1416	0.1190	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.1787	154.1787	2.9600e-003	2.8300e-003	155.0949

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	2.8892e+006	0.0156	0.1416	0.1190	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.1787	154.1787	2.9600e-003	2.8300e-003	155.0949
Total		**0.0156**	**0.1416**	**0.1190**	**8.5000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.1787**	**154.1787**	**2.9600e-003**	**2.8300e-003**	**155.0949**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	2.8892e+006	0.0156	0.1416	0.1190	8.5000e-004		0.0108	0.0108		0.0108	0.0108	0.0000	154.1787	154.1787	2.9600e-003	2.8300e-003	155.0949
Total		**0.0156**	**0.1416**	**0.1190**	**8.5000e-004**		**0.0108**	**0.0108**		**0.0108**	**0.0108**	**0.0000**	**154.1787**	**154.1787**	**2.9600e-003**	**2.8300e-003**	**155.0949**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	1.30975e+006	381.0213	0.0172	3.5600e-003	382.5143
Total		**381.0213**	**0.0172**	**3.5600e-003**	**382.5143**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	1.30975e+006	381.0213	0.0172	3.5600e-003	382.5143

Total		**381.0213**	**0.0172**	**3.5600e-003**	**382.5143**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7133	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7700e-003	2.7700e-003	1.0000e-005	0.0000	2.9500e-003
Unmitigated	0.7133	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7700e-003	2.7700e-003	1.0000e-005	0.0000	2.9500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1078					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6054					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7700e-003	2.7700e-003	1.0000e-005	0.0000	2.9500e-003

Total	**0.7132**	**1.0000e-005**	**1.4300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**2.7700e-003**	**2.7700e-003**	**1.0000e-005**	**0.0000**	**2.9500e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1078					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6054					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.3000e-004	1.0000e-005	1.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.7700e-003	2.7700e-003	1.0000e-005	0.0000	2.9500e-003
Total	**0.7132**	**1.0000e-005**	**1.4300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**2.7700e-003**	**2.7700e-003**	**1.0000e-005**	**0.0000**	**2.9500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	67.7940	1.1705	0.0281	105.4326
Unmitigated	67.7940	1.1705	0.0281	105.4326

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	35.8438 / 0	67.7940	1.1705	0.0281	105.4326
Total		**67.7940**	**1.1705**	**0.0281**	**105.4326**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	35.8438 / 0	67.7940	1.1705	0.0281	105.4326
Total		**67.7940**	**1.1705**	**0.0281**	**105.4326**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	39.0149	2.3057	0.0000	96.6577
Unmitigated	39.0149	2.3057	0.0000	96.6577

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	192.2	39.0149	2.3057	0.0000	96.6577
Total		**39.0149**	**2.3057**	**0.0000**	**96.6577**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

General Heavy Industry	192.2	39.0149	2.3057	0.0000	96.6577
Total		**39.0149**	**2.3057**	**0.0000**	**96.6577**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix D

AERMOD Source Parameters and AERMOD Output

Source Parameters

AERMOD Output File for Construction

AERMOD Output File for Operation

AERMOD Source Parameters

Source Description	Source Type	Release Height (m)	Initial Vertical Dimension (m)	Initial Horizontal Dimension (m)	Line Source Width (m)	Stack Exit Temp. (K)	Stack Exit Velocity (m/s)	Stack Diameter (m)
Construction exhaust onsite [a]	Area	5.0	1.0	--	--	--	--	--
Trucks in transit [b]	Line	1.8	1.4	--	9.8	--	--	--
Trucks idling onsite [c]	Point	3.8	--	--	--	366	0.001	0.1
Line haul locomotives [d]	Line	5.6	2.6	--	9.1	--	--	--
Switcher locomotives [e]	Line	4.7	2.2	--	9.1	--	--	--
OGVs at berth [f]	Point	43.0	--	--	--	618	16	0.5
OGVs in transit [g]	Line	50.0	23.3	--	38.0	--	--	--
Tugboats in transit [h]	Line	15.2	3.5	--	38.0	--	--	--
Tugboats at berth [h]	Volume	15.2	3.5	4.7	--	--	--	--

Notes:

[a] Source: Sacramento Metropolitan Air Quality Management District. *Guide to Air Quality Assessment in Sacramento County.* September 2018. Chapter 3: Construction-Generated Criteria Air Pollutant and Precursor Emissions. Chapter 3 Appendix: Dispersion Modeling of Construction-Generated PM10 Emissions. July 2013.

[b] Source: SJVAPCD, *Guidance for Air Dispersion Modeling.* Draft. Rev 1.2. Page 75. August 2006. Height of 6 feet is for a truck traveling . Width is 12 feet (per SJVAPCD Guidance) times the number of lanes, plus 10 feet mixing zone on each side.

[c] Source: SJVAPCD, *Guidance for Air Dispersion Modeling.* Draft. Rev 1.2. Page 76. August 2006. Height, diameter, temperature, and velocity are for a "high level" truck idling source with a horizontal exhaust pipe. A horizontal exhaust pipe was conservatively selected between vertical and horizontal because no information on the truck exhaust pipes was available.

[d] Source: CARB, *Roseville Rail Yard Study.* October 14, 2004. Height is from Appendix G, composite locomotive composition, Notch 2, daytime conditions (Stability D). Width is the width of the traveled way (10 feet for a train) plus a 10-foot mixing zone width on each side. Initial vertical dimension is the release height divided by 2.15, which is consistent with the Roseville Railyard Study.

[e] Source: CARB, *Roseville Rail Yard Study.* October 14, 2004. Height is from Appendix G, Switcher, Notch 1, daytime conditions (Stability D). Width is the width of the traveled way (10 feet for a train) plus a 10-foot mixing zone width on each side. Initial vertical dimension is the release height divided by 2.15, which is consistent with the Roseville Railyard Study.

[f] Source: CARB, *Diesel Particulate Matter Exposure Assessment Study for the Ports of Los Angeles and Long Beach.* April 2006.

[g] Source: CARB, *Diesel Particulate Matter Exposure Assessment Study for the Ports of Los Angeles and Long Beach.* April 2006. Width is the vessel width plus a 10-foot mixing zone width on each side.

[h] Source: Port of Los Angeles, *Berths 167-169 [Shell] Marine Oil Terminal Wharf Improvement Project Draft EIR.* Appendix B2. March 2018. Height and Sigma Z are from Table B2-2. Width is the same as for OGVs since the tugboats guide the OGVs.

Appendix D1. AERMOD Output Files for Construction

- **Run with 2013 Meteorological Data**
- **Run with 2014 Meteorological Data**
- **Run with 2015 Meteorological Data**
- **Run with 2016 Meteorological Data**
- **Run with 2017 Meteorological Data**

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

***   MODEL SETUP OPTIONS SUMMARY   ***

- -

**Model Is Setup For Calculation of Average CONCentration Values.

  -- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses RURAL Dispersion Only.

**Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

**Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: DPM_ANN

**Model Calculates PERIOD Averages Only

**This Run Includes: 1 Source(s);   1 Source Group(s); and   176 Receptor(s)

               with: 0 POINT(s), including
                          0 POINTCAP(s) and   0 POINTHOR(s)
                and: 0 VOLUME source(s)
                and: 1 AREA type source(s)
                and: 0 LINE source(s)
                and: 0 OPENPIT source(s)
                and: 0 BUOYANT LINE source(s) with   0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 18081

**Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 8.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Input Runstream File: ContandaRocket_Const_2013_DPM_ANN.DTA
**Output Print File: ContandaRocket_Const_2013_DPM_ANN.LST

**File for Summary of Results: F:\Projects\Contanda Rocket\ContandaRocket_Const_2013_DPM_ANN.SUM

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CONST	0	0.29389E-06	647283.3	4201227.6	3.3	5.00	6	1.00	NO	HROFDY

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	CONST ,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

SOURCE ID = CONST ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.26670E+01	9	.26670E+01	10	.26670E+01	11	.26670E+01	12	.26670E+01
13	.26670E+01	14	.26670E+01	15	.26670E+01	16	.26670E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647283.3,	4201227.6,	3.3,	3.3,	0.0);	(647278.8,	4201250.9,	3.4,	3.4,	0.0);
(647274.4,	4201274.1,	3.6,	3.6,	0.0);	(647270.0,	4201297.3,	3.6,	3.6,	0.0);
(647265.6,	4201320.5,	3.6,	3.6,	0.0);	(647261.2,	4201343.7,	3.6,	3.6,	0.0);
(647283.5,	4201347.9,	3.6,	3.6,	0.0);	(647305.9,	4201352.1,	3.6,	3.6,	0.0);
(647328.2,	4201356.2,	3.6,	3.6,	0.0);	(647350.6,	4201360.4,	3.6,	3.6,	0.0);
(647372.9,	4201364.6,	3.6,	3.6,	0.0);	(647395.2,	4201368.7,	3.6,	3.6,	0.0);
(647417.6,	4201372.9,	3.6,	3.6,	0.0);	(647439.9,	4201377.1,	3.6,	3.6,	0.0);
(647443.7,	4201357.4,	3.6,	3.6,	0.0);	(647447.5,	4201337.7,	3.6,	3.6,	0.0);
(647451.2,	4201318.1,	3.7,	3.7,	0.0);	(647455.0,	4201298.4,	3.6,	3.6,	0.0);
(647458.8,	4201278.8,	3.4,	3.4,	0.0);	(647456.8,	4201261.3,	3.3,	3.3,	0.0);
(647435.1,	4201257.1,	3.4,	3.4,	0.0);	(647413.4,	4201252.9,	3.4,	3.4,	0.0);
(647391.7,	4201248.7,	3.4,	3.4,	0.0);	(647370.0,	4201244.5,	3.4,	3.4,	0.0);
(647348.3,	4201240.2,	3.3,	3.3,	0.0);	(647326.6,	4201236.0,	3.3,	3.3,	0.0);
(647304.9,	4201231.8,	3.3,	3.3,	0.0);	(647229.3,	4201468.6,	3.2,	3.2,	0.0);
(647227.5,	4201487.6,	3.1,	3.1,	0.0);	(647225.8,	4201506.5,	3.0,	3.0,	0.0);
(647224.0,	4201525.5,	2.9,	2.9,	0.0);	(647247.2,	4201527.3,	3.0,	3.0,	0.0);
(647270.3,	4201529.1,	3.2,	3.2,	0.0);	(647293.4,	4201530.9,	3.2,	3.2,	0.0);
(647316.5,	4201532.7,	3.3,	3.3,	0.0);	(647339.7,	4201534.6,	3.4,	3.4,	0.0);
(647362.8,	4201536.4,	3.4,	3.4,	0.0);	(647379.0,	4201524.1,	3.4,	3.4,	0.0);
(647395.2,	4201511.8,	3.5,	3.5,	0.0);	(647411.3,	4201499.5,	3.5,	3.5,	0.0);
(647427.5,	4201487.2,	3.5,	3.5,	0.0);	(647402.8,	4201484.9,	3.5,	3.5,	0.0);
(647378.0,	4201482.6,	3.5,	3.5,	0.0);	(647353.2,	4201480.2,	3.4,	3.4,	0.0);
(647328.4,	4201477.9,	3.4,	3.4,	0.0);	(647303.6,	4201475.6,	3.4,	3.4,	0.0);
(647278.9,	4201473.3,	3.3,	3.3,	0.0);	(647254.1,	4201470.9,	3.2,	3.2,	0.0);
(647700.0,	4201100.0,	2.6,	2.6,	0.0);	(647750.0,	4201100.0,	2.6,	2.6,	0.0);
(647800.0,	4201100.0,	2.6,	2.6,	0.0);	(647850.0,	4201100.0,	2.6,	2.6,	0.0);
(647700.0,	4201150.0,	2.6,	2.6,	0.0);	(647750.0,	4201150.0,	2.6,	2.6,	0.0);
(647850.0,	4201150.0,	2.6,	2.6,	0.0);	(647700.0,	4201200.0,	2.6,	2.6,	0.0);
(647750.0,	4201250.0,	2.6,	2.6,	0.0);	(647750.0,	4201300.0,	2.6,	2.6,	0.0);
(647800.0,	4201300.0,	2.6,	2.6,	0.0);	(647850.0,	4201300.0,	2.6,	2.6,	0.0);
(647750.0,	4201350.0,	2.6,	2.6,	0.0);	(647800.0,	4201350.0,	2.6,	2.6,	0.0);
(647750.0,	4201400.0,	2.6,	2.6,	0.0);	(647800.0,	4201400.0,	2.6,	2.6,	0.0);
(647850.0,	4200900.0,	2.6,	2.6,	0.0);	(647900.0,	4200900.0,	2.6,	2.6,	0.0);
(647750.0,	4200950.0,	2.6,	2.6,	0.0);	(647800.0,	4200950.0,	2.6,	2.6,	0.0);
(647850.0,	4200950.0,	2.6,	2.6,	0.0);	(647900.0,	4200950.0,	2.6,	2.6,	0.0);
(647750.0,	4201000.0,	2.6,	2.6,	0.0);	(647800.0,	4201000.0,	2.6,	2.6,	0.0);
(647850.0,	4201000.0,	2.6,	2.6,	0.0);	(647900.0,	4201000.0,	2.6,	2.6,	0.0);
(647700.0,	4201050.0,	2.6,	2.6,	0.0);	(647750.0,	4201050.0,	2.6,	2.6,	0.0);
(647800.0,	4201050.0,	2.6,	2.6,	0.0);	(647850.0,	4201050.0,	2.6,	2.6,	0.0);
(647900.0,	4201050.0,	2.6,	2.6,	0.0);	(647100.0,	4201100.0,	2.6,	2.6,	0.0);
(647150.0,	4201100.0,	2.6,	2.6,	0.0);	(647200.0,	4201100.0,	2.6,	2.6,	0.0);
(647250.0,	4201100.0,	2.6,	2.6,	0.0);	(647300.0,	4201100.0,	2.6,	2.6,	0.0);
(647350.0,	4201100.0,	2.6,	2.6,	0.0);	(647400.0,	4201100.0,	2.6,	2.6,	0.0);
(647450.0,	4201100.0,	2.6,	2.6,	0.0);	(647500.0,	4201100.0,	2.6,	2.6,	0.0);
(647550.0,	4201100.0,	2.6,	2.6,	0.0);	(647600.0,	4201100.0,	2.6,	2.6,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	647100.0,	4201150.0,	2.8,	2.8,	0.0);	(	647150.0,	4201150.0,	2.8,	2.8,	0.0);
(	647200.0,	4201150.0,	2.8,	2.8,	0.0);	(	647250.0,	4201150.0,	2.8,	2.8,	0.0);
(	647300.0,	4201150.0,	2.8,	2.8,	0.0);	(	647350.0,	4201150.0,	2.7,	2.7,	0.0);
(	647400.0,	4201150.0,	2.7,	2.7,	0.0);	(	647450.0,	4201150.0,	2.7,	2.7,	0.0);
(	647500.0,	4201150.0,	2.7,	2.7,	0.0);	(	647550.0,	4201150.0,	2.6,	2.6,	0.0);
(	647600.0,	4201150.0,	2.6,	2.6,	0.0);	(	647100.0,	4201200.0,	3.1,	3.1,	0.0);
(	647150.0,	4201200.0,	3.1,	3.1,	0.0);	(	647200.0,	4201200.0,	3.1,	3.1,	0.0);
(	647250.0,	4201200.0,	3.1,	3.1,	0.0);	(	647300.0,	4201200.0,	3.1,	3.1,	0.0);
(	647350.0,	4201200.0,	3.1,	3.1,	0.0);	(	647400.0,	4201200.0,	3.1,	3.1,	0.0);
(	647450.0,	4201200.0,	3.0,	3.0,	0.0);	(	647500.0,	4201200.0,	2.8,	2.8,	0.0);
(	647550.0,	4201200.0,	2.6,	2.6,	0.0);	(	647600.0,	4201200.0,	2.6,	2.6,	0.0);
(	647100.0,	4201250.0,	3.4,	3.4,	0.0);	(	647150.0,	4201250.0,	3.4,	3.4,	0.0);
(	647200.0,	4201250.0,	3.5,	3.5,	0.0);	(	647250.0,	4201250.0,	3.4,	3.4,	0.0);
(	647400.0,	4201250.0,	3.4,	3.4,	0.0);	(	647450.0,	4201250.0,	3.3,	3.3,	0.0);
(	647500.0,	4201250.0,	3.0,	3.0,	0.0);	(	647550.0,	4201250.0,	2.6,	2.6,	0.0);
(	647600.0,	4201250.0,	2.6,	2.6,	0.0);	(	647100.0,	4201300.0,	3.6,	3.6,	0.0);
(	647150.0,	4201300.0,	3.6,	3.6,	0.0);	(	647200.0,	4201300.0,	3.6,	3.6,	0.0);
(	647250.0,	4201300.0,	3.6,	3.6,	0.0);	(	647500.0,	4201300.0,	3.4,	3.4,	0.0);
(	647550.0,	4201300.0,	2.6,	2.6,	0.0);	(	647600.0,	4201300.0,	2.6,	2.6,	0.0);
(	647100.0,	4201350.0,	3.5,	3.5,	0.0);	(	647150.0,	4201350.0,	3.5,	3.5,	0.0);
(	647200.0,	4201350.0,	3.5,	3.5,	0.0);	(	647250.0,	4201350.0,	3.5,	3.5,	0.0);
(	647450.0,	4201350.0,	3.6,	3.6,	0.0);	(	647500.0,	4201350.0,	3.6,	3.6,	0.0);
(	647550.0,	4201350.0,	2.8,	2.8,	0.0);	(	647600.0,	4201350.0,	2.6,	2.6,	0.0);
(	647100.0,	4201400.0,	3.4,	3.4,	0.0);	(	647150.0,	4201400.0,	3.4,	3.4,	0.0);
(	647200.0,	4201400.0,	3.4,	3.4,	0.0);	(	647250.0,	4201400.0,	3.4,	3.4,	0.0);
(	647300.0,	4201400.0,	3.5,	3.5,	0.0);	(	647350.0,	4201400.0,	3.5,	3.5,	0.0);
(	647400.0,	4201400.0,	3.6,	3.6,	0.0);	(	647450.0,	4201400.0,	3.6,	3.6,	0.0);
(	647500.0,	4201400.0,	3.6,	3.6,	0.0);	(	647550.0,	4201400.0,	3.5,	3.5,	0.0);
(	647600.0,	4201400.0,	2.6,	2.6,	0.0);	(	647100.0,	4201450.0,	3.2,	3.2,	0.0);
(	647150.0,	4201450.0,	3.2,	3.2,	0.0);	(	647200.0,	4201450.0,	3.2,	3.2,	0.0);
(	647250.0,	4201450.0,	3.3,	3.3,	0.0);	(	647300.0,	4201450.0,	3.4,	3.4,	0.0);
(	647350.0,	4201450.0,	3.5,	3.5,	0.0);	(	647400.0,	4201450.0,	3.5,	3.5,	0.0);
(	647450.0,	4201450.0,	3.5,	3.5,	0.0);	(	647500.0,	4201450.0,	3.6,	3.6,	0.0);
(	647550.0,	4201450.0,	3.6,	3.6,	0.0);	(	647600.0,	4201450.0,	3.6,	3.6,	0.0);
(	647100.0,	4201500.0,	2.9,	2.9,	0.0);	(	647150.0,	4201500.0,	3.0,	3.0,	0.0);
(	647200.0,	4201500.0,	3.0,	3.0,	0.0);	(	647450.0,	4201500.0,	3.5,	3.5,	0.0);
(	647500.0,	4201500.0,	3.5,	3.5,	0.0);	(	647550.0,	4201500.0,	3.6,	3.6,	0.0);
(	647600.0,	4201500.0,	3.6,	3.6,	0.0);	(	647100.0,	4201550.0,	2.8,	2.8,	0.0);
(	647150.0,	4201550.0,	2.9,	2.9,	0.0);	(	647200.0,	4201550.0,	2.9,	2.9,	0.0);
(	647250.0,	4201550.0,	3.0,	3.0,	0.0);	(	647300.0,	4201550.0,	3.2,	3.2,	0.0);
(	647350.0,	4201550.0,	3.4,	3.4,	0.0);	(	647400.0,	4201550.0,	3.4,	3.4,	0.0);
(	647450.0,	4201550.0,	3.5,	3.5,	0.0);	(	647500.0,	4201550.0,	3.5,	3.5,	0.0);
(	647550.0,	4201550.0,	3.5,	3.5,	0.0);	(	647600.0,	4201550.0,	3.5,	3.5,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54,   3.09,   5.14,   8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: 23237_2013.SFC Met Version: 18081
Profile file: 23237_2013.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 23237 Upper air station no.: 23230
Name: UNKNOWN Name: UNKNOWN
Year: 2013 Year: 2013

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
13	01	01	1	01	-22.0	0.211	-9.000	-9.000	-999.	232.	48.8	0.07	2.20	1.00	2.78	149.	10.0	273.8	2.0
13	01	01	1	02	-14.6	0.158	-9.000	-9.000	-999.	152.	27.6	0.04	2.20	1.00	2.37	77.	10.0	273.8	2.0
13	01	01	1	03	-18.4	0.181	-9.000	-9.000	-999.	185.	36.0	0.06	2.20	1.00	2.52	97.	10.0	273.1	2.0
13	01	01	1	04	-6.7	0.105	-9.000	-9.000	-999.	84.	16.0	0.04	2.20	1.00	1.63	349.	10.0	272.5	2.0
13	01	01	1	05	-20.1	0.193	-9.000	-9.000	-999.	203.	40.9	0.04	2.20	1.00	2.86	356.	10.0	274.2	2.0
13	01	01	1	06	-3.9	0.081	-9.000	-9.000	-999.	64.	12.6	0.04	2.20	1.00	1.23	77.	10.0	273.8	2.0
13	01	01	1	07	-18.3	0.180	-9.000	-9.000	-999.	184.	35.8	0.06	2.20	1.00	2.52	255.	10.0	273.1	2.0
13	01	01	1	08	-26.9	0.259	-9.000	-9.000	-999.	316.	73.8	0.08	2.20	0.73	3.29	287.	10.0	274.2	2.0
13	01	01	1	09	-1.9	0.212	-9.000	-9.000	-999.	236.	461.6	0.05	2.20	0.39	2.81	315.	10.0	275.9	2.0
13	01	01	1	10	61.1	0.155	0.630	0.005	150.	147.	-5.5	0.04	2.20	0.27	1.60	336.	10.0	277.5	2.0
13	01	01	1	11	110.2	0.238	1.137	0.005	488.	279.	-11.2	0.06	2.20	0.23	2.45	228.	10.0	279.9	2.0
13	01	01	1	12	137.1	0.276	1.492	0.008	886.	347.	-14.0	0.08	2.20	0.22	2.69	286.	10.0	280.4	2.0
13	01	01	1	13	141.1	0.271	1.531	0.007	929.	339.	-12.9	0.05	2.20	0.21	2.88	325.	10.0	282.5	2.0
13	01	01	1	14	121.3	0.232	1.475	0.006	965.	269.	-9.4	0.04	2.20	0.22	2.57	356.	10.0	283.8	2.0
13	01	01	1	15	78.7	0.218	1.287	0.005	988.	244.	-12.0	0.04	2.20	0.26	2.47	357.	10.0	284.2	2.0
13	01	01	1	16	17.6	0.265	0.783	0.005	993.	327.	-96.0	0.03	2.20	0.35	3.59	2.	10.0	284.2	2.0
13	01	01	1	17	-11.2	0.143	-9.000	-9.000	-999.	139.	24.1	0.04	2.20	0.60	2.16	346.	10.0	282.5	2.0
13	01	01	1	18	-8.7	0.125	-9.000	-9.000	-999.	107.	20.6	0.08	2.20	1.00	1.67	273.	10.0	279.2	2.0
13	01	01	1	19	-13.3	0.154	-9.000	-9.000	-999.	145.	26.0	0.06	2.20	1.00	2.15	238.	10.0	278.1	2.0
13	01	01	1	20	-10.2	0.134	-9.000	-9.000	-999.	117.	21.4	0.06	2.20	1.00	1.89	230.	10.0	275.9	2.0
13	01	01	1	21	-12.5	0.148	-9.000	-9.000	-999.	137.	24.2	0.05	2.20	1.00	2.11	300.	10.0	276.4	2.0
13	01	01	1	22	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.05	2.20	1.00	0.00	0.	10.0	275.9	2.0
13	01	01	1	23	-24.0	0.230	-9.000	-9.000	-999.	264.	57.9	0.04	2.20	1.00	3.36	80.	10.0	274.2	2.0
13	01	01	1	24	-16.1	0.169	-9.000	-9.000	-999.	167.	31.3	0.06	2.20	1.00	2.36	100.	10.0	274.2	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
13	01	01	01	10.0	1	149.	2.78	273.8	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647283.30	4201227.60	0.13969	647278.80	4201250.90	0.18515
647274.40	4201274.10	0.22501	647270.00	4201297.30	0.23768
647265.60	4201320.50	0.22363	647261.20	4201343.70	0.19794
647283.50	4201347.90	0.23295	647305.90	4201352.10	0.26536
647328.20	4201356.20	0.28067	647350.60	4201360.40	0.28326
647372.90	4201364.60	0.27588	647395.20	4201368.70	0.25705
647417.60	4201372.90	0.21905	647439.90	4201377.10	0.17252
647443.70	4201357.40	0.32704	647447.50	4201337.70	0.49009
647451.20	4201318.10	0.57209	647455.00	4201298.40	0.56565
647458.80	4201278.80	0.43979	647456.80	4201261.30	0.35912
647435.10	4201257.10	0.41190	647413.40	4201252.90	0.50387
647391.70	4201248.70	0.63035	647370.00	4201244.50	0.63676
647348.30	4201240.20	0.59005	647326.60	4201236.00	0.48860
647304.90	4201231.80	0.30788	647229.30	4201468.60	0.04160
647227.50	4201487.60	0.03456	647225.80	4201506.50	0.02906
647224.00	4201525.50	0.02467	647247.20	4201527.30	0.02415
647270.30	4201529.10	0.02326	647293.40	4201530.90	0.02200
647316.50	4201532.70	0.02057	647339.70	4201534.60	0.01924
647362.80	4201536.40	0.01826	647379.00	4201524.10	0.02017
647395.20	4201511.80	0.02242	647411.30	4201499.50	0.02488
647427.50	4201487.20	0.02743	647402.80	4201484.90	0.02957
647378.00	4201482.60	0.03183	647353.20	4201480.20	0.03435
647328.40	4201477.90	0.03690	647303.60	4201475.60	0.03918
647278.90	4201473.30	0.04088	647254.10	4201470.90	0.04174
647700.00	4201100.00	0.03047	647750.00	4201100.00	0.02437
647800.00	4201100.00	0.01966	647850.00	4201100.00	0.01607
647700.00	4201150.00	0.03375	647750.00	4201150.00	0.02600
647850.00	4201150.00	0.01639	647700.00	4201200.00	0.03502
647750.00	4201250.00	0.02412	647750.00	4201300.00	0.02021
647800.00	4201300.00	0.01545	647850.00	4201300.00	0.01220
647750.00	4201350.00	0.01605	647800.00	4201350.00	0.01253
647750.00	4201400.00	0.01312	647800.00	4201400.00	0.01052
647850.00	4200900.00	0.01141	647900.00	4200900.00	0.01018
647750.00	4200950.00	0.01648	647800.00	4200950.00	0.01456
647850.00	4200950.00	0.01277	647900.00	4200950.00	0.01116
647750.00	4201000.00	0.01921	647800.00	4201000.00	0.01646
647850.00	4201000.00	0.01407	647900.00	4201000.00	0.01206
647700.00	4201050.00	0.02638	647750.00	4201050.00	0.02193
647800.00	4201050.00	0.01823	647850.00	4201050.00	0.01522
647900.00	4201050.00	0.01281	647100.00	4201100.00	0.01224

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647150.00	4201100.00	0.01511	647200.00	4201100.00	0.01690
647250.00	4201100.00	0.01771	647300.00	4201100.00	0.02277
647350.00	4201100.00	0.03738	647400.00	4201100.00	0.05502
647450.00	4201100.00	0.06452	647500.00	4201100.00	0.06366
647550.00	4201100.00	0.05658	647600.00	4201100.00	0.04729
647100.00	4201150.00	0.01446	647150.00	4201150.00	0.01895
647200.00	4201150.00	0.02471	647250.00	4201150.00	0.03025
647300.00	4201150.00	0.04474	647350.00	4201150.00	0.08338
647400.00	4201150.00	0.11401	647450.00	4201150.00	0.11467
647500.00	4201150.00	0.09819	647550.00	4201150.00	0.07804
647600.00	4201150.00	0.05940	647100.00	4201200.00	0.01939
647150.00	4201200.00	0.02559	647200.00	4201200.00	0.03623
647250.00	4201200.00	0.05503	647300.00	4201200.00	0.12823
647350.00	4201200.00	0.25967	647400.00	4201200.00	0.27247
647450.00	4201200.00	0.20423	647500.00	4201200.00	0.14731
647550.00	4201200.00	0.10228	647600.00	4201200.00	0.06976
647100.00	4201250.00	0.02589	647150.00	4201250.00	0.03591
647200.00	4201250.00	0.05603	647250.00	4201250.00	0.10938
647400.00	4201250.00	0.58884	647450.00	4201250.00	0.33668
647500.00	4201250.00	0.20974	647550.00	4201250.00	0.12022
647600.00	4201250.00	0.07274	647100.00	4201300.00	0.03044
647150.00	4201300.00	0.04579	647200.00	4201300.00	0.07866
647250.00	4201300.00	0.17374	647500.00	4201300.00	0.25453
647550.00	4201300.00	0.11287	647600.00	4201300.00	0.06292
647100.00	4201350.00	0.03273	647150.00	4201350.00	0.04976
647200.00	4201350.00	0.08495	647250.00	4201350.00	0.17007
647450.00	4201350.00	0.39084	647500.00	4201350.00	0.15677
647550.00	4201350.00	0.07492	647600.00	4201350.00	0.04459
647100.00	4201400.00	0.03269	647150.00	4201400.00	0.04663
647200.00	4201400.00	0.06838	647250.00	4201400.00	0.09478
647300.00	4201400.00	0.11569	647350.00	4201400.00	0.13000
647400.00	4201400.00	0.12465	647450.00	4201400.00	0.09129
647500.00	4201400.00	0.06242	647550.00	4201400.00	0.04283
647600.00	4201400.00	0.03021	647100.00	4201450.00	0.02924
647150.00	4201450.00	0.03757	647200.00	4201450.00	0.04619
647250.00	4201450.00	0.05231	647300.00	4201450.00	0.05442
647350.00	4201450.00	0.05297	647400.00	4201450.00	0.04681
647450.00	4201450.00	0.03937	647500.00	4201450.00	0.03175
647550.00	4201450.00	0.02525	647600.00	4201450.00	0.02085
647100.00	4201500.00	0.02395	647150.00	4201500.00	0.02778

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647200.00	4201500.00	0.03014	647450.00	4201500.00	0.02318
647500.00	4201500.00	0.02046	647550.00	4201500.00	0.01671
647600.00	4201500.00	0.01428	647100.00	4201550.00	0.01882
647150.00	4201550.00	0.02004	647200.00	4201550.00	0.02033
647250.00	4201550.00	0.01985	647300.00	4201550.00	0.01819
647350.00	4201550.00	0.01644	647400.00	4201550.00	0.01568
647450.00	4201550.00	0.01540	647500.00	4201550.00	0.01465
647550.00	4201550.00	0.01264	647600.00	4201550.00	0.01050

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.63676 AT (647370.00, 4201244.50, 3.37, 3.37, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.63035 AT (647391.70, 4201248.70, 3.40, 3.40, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.59005 AT (647348.30, 4201240.20, 3.35, 3.35, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.58884 AT (647400.00, 4201250.00, 3.40, 3.40, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.57209 AT (647451.20, 4201318.10, 3.66, 3.66, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.56565 AT (647455.00, 4201298.40, 3.56, 3.56, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.50387 AT (647413.40, 4201252.90, 3.41, 3.41, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.49009 AT (647447.50, 4201337.70, 3.65, 3.65, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.48860 AT (647326.60, 4201236.00, 3.33, 3.33, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.43979 AT (647458.80, 4201278.80, 3.43, 3.43, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   2 Warning Message(s)
A Total of   213 Informational Message(s)

A Total of   8760 Hours Were Processed

A Total of   136 Calm Hours Identified

A Total of   77 Missing Hours Identified (0.88 Percent)

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
ME W186   216   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used   0.50
ME W187   216   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

   ****
   *** AERMOD Finishes Successfully ***
   ****

 *** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

                                          ***   MODEL SETUP OPTIONS SUMMARY   ***
 -

 **Model Is Setup For Calculation of Average CONCentration Values.

   -- DEPOSITION LOGIC --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION. DRYDPLT = F
 **Model Uses NO WET DEPLETION. WETDPLT = F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of: DPM_ANN

 **Model Calculates PERIOD Averages Only

 **This Run Includes: 1 Source(s);   1 Source Group(s); and   176 Receptor(s)

                with: 0 POINT(s), including
                           0 POINTCAP(s) and   0 POINTHOR(s)
                 and: 0 VOLUME source(s)
                 and: 1 AREA type source(s)
                 and: 0 LINE source(s)
                 and: 0 OPENPIT source(s)
                 and: 0 BUOYANT LINE source(s) with   0 line(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date: 18081

 **Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 8.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Input Runstream File: ContandaRocket_Const_2014_DPM_ANN.DTA
**Output Print File: ContandaRocket_Const_2014_DPM_ANN.LST

**File for Summary of Results: F:\Projects\Contanda Rocket\ContandaRocket_Const_2014_DPM_ANN.SUM

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CONST	0	0.29389E-06	647283.3	4201227.6	3.3	5.00	6	1.00	NO	HROFDY

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	CONST ,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = CONST ; SOURCE TYPE = AREAPOLY :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.26670E+01	9	.26670E+01	10	.26670E+01	11	.26670E+01	12	.26670E+01
13	.26670E+01	14	.26670E+01	15	.26670E+01	16	.26670E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647283.3,	4201227.6,	3.3,	3.3,	0.0);	(647278.8,	4201250.9,	3.4,	3.4,	0.0);
(647274.4,	4201274.1,	3.6,	3.6,	0.0);	(647270.0,	4201297.3,	3.6,	3.6,	0.0);
(647265.6,	4201320.5,	3.6,	3.6,	0.0);	(647261.2,	4201343.7,	3.6,	3.6,	0.0);
(647283.5,	4201347.9,	3.6,	3.6,	0.0);	(647305.9,	4201352.1,	3.6,	3.6,	0.0);
(647328.2,	4201356.2,	3.6,	3.6,	0.0);	(647350.6,	4201360.4,	3.6,	3.6,	0.0);
(647372.9,	4201364.6,	3.6,	3.6,	0.0);	(647395.2,	4201368.7,	3.6,	3.6,	0.0);
(647417.6,	4201372.9,	3.6,	3.6,	0.0);	(647439.9,	4201377.1,	3.6,	3.6,	0.0);
(647443.7,	4201357.4,	3.6,	3.6,	0.0);	(647447.5,	4201337.7,	3.6,	3.6,	0.0);
(647451.2,	4201318.1,	3.7,	3.7,	0.0);	(647455.0,	4201298.4,	3.6,	3.6,	0.0);
(647458.8,	4201278.8,	3.4,	3.4,	0.0);	(647456.8,	4201261.3,	3.3,	3.3,	0.0);
(647435.1,	4201257.1,	3.4,	3.4,	0.0);	(647413.4,	4201252.9,	3.4,	3.4,	0.0);
(647391.7,	4201248.7,	3.4,	3.4,	0.0);	(647370.0,	4201244.5,	3.4,	3.4,	0.0);
(647348.3,	4201240.2,	3.3,	3.3,	0.0);	(647326.6,	4201236.0,	3.3,	3.3,	0.0);
(647304.9,	4201231.8,	3.3,	3.3,	0.0);	(647229.3,	4201468.6,	3.2,	3.2,	0.0);
(647227.5,	4201487.6,	3.1,	3.1,	0.0);	(647225.8,	4201506.5,	3.0,	3.0,	0.0);
(647224.0,	4201525.5,	2.9,	2.9,	0.0);	(647247.2,	4201527.3,	3.0,	3.0,	0.0);
(647270.3,	4201529.1,	3.2,	3.2,	0.0);	(647293.4,	4201530.9,	3.2,	3.2,	0.0);
(647316.5,	4201532.7,	3.3,	3.3,	0.0);	(647339.7,	4201534.6,	3.4,	3.4,	0.0);
(647362.8,	4201536.4,	3.4,	3.4,	0.0);	(647379.0,	4201524.1,	3.4,	3.4,	0.0);
(647395.2,	4201511.8,	3.5,	3.5,	0.0);	(647411.3,	4201499.5,	3.5,	3.5,	0.0);
(647427.5,	4201487.2,	3.5,	3.5,	0.0);	(647402.8,	4201484.9,	3.5,	3.5,	0.0);
(647378.0,	4201482.6,	3.5,	3.5,	0.0);	(647353.2,	4201480.2,	3.4,	3.4,	0.0);
(647328.4,	4201477.9,	3.4,	3.4,	0.0);	(647303.6,	4201475.6,	3.4,	3.4,	0.0);
(647278.9,	4201473.3,	3.3,	3.3,	0.0);	(647254.1,	4201470.9,	3.2,	3.2,	0.0);
(647700.0,	4201100.0,	2.6,	2.6,	0.0);	(647750.0,	4201100.0,	2.6,	2.6,	0.0);
(647800.0,	4201100.0,	2.6,	2.6,	0.0);	(647850.0,	4201100.0,	2.6,	2.6,	0.0);
(647700.0,	4201150.0,	2.6,	2.6,	0.0);	(647750.0,	4201150.0,	2.6,	2.6,	0.0);
(647850.0,	4201150.0,	2.6,	2.6,	0.0);	(647700.0,	4201200.0,	2.6,	2.6,	0.0);
(647750.0,	4201250.0,	2.6,	2.6,	0.0);	(647750.0,	4201300.0,	2.6,	2.6,	0.0);
(647800.0,	4201300.0,	2.6,	2.6,	0.0);	(647850.0,	4201300.0,	2.6,	2.6,	0.0);
(647750.0,	4201350.0,	2.6,	2.6,	0.0);	(647800.0,	4201350.0,	2.6,	2.6,	0.0);
(647750.0,	4201400.0,	2.6,	2.6,	0.0);	(647800.0,	4201400.0,	2.6,	2.6,	0.0);
(647850.0,	4200900.0,	2.6,	2.6,	0.0);	(647900.0,	4200900.0,	2.6,	2.6,	0.0);
(647750.0,	4200950.0,	2.6,	2.6,	0.0);	(647800.0,	4200950.0,	2.6,	2.6,	0.0);
(647850.0,	4200950.0,	2.6,	2.6,	0.0);	(647900.0,	4200950.0,	2.6,	2.6,	0.0);
(647750.0,	4201000.0,	2.6,	2.6,	0.0);	(647800.0,	4201000.0,	2.6,	2.6,	0.0);
(647850.0,	4201000.0,	2.6,	2.6,	0.0);	(647900.0,	4201000.0,	2.6,	2.6,	0.0);
(647700.0,	4201050.0,	2.6,	2.6,	0.0);	(647750.0,	4201050.0,	2.6,	2.6,	0.0);
(647800.0,	4201050.0,	2.6,	2.6,	0.0);	(647850.0,	4201050.0,	2.6,	2.6,	0.0);
(647900.0,	4201050.0,	2.6,	2.6,	0.0);	(647100.0,	4201100.0,	2.6,	2.6,	0.0);
(647150.0,	4201100.0,	2.6,	2.6,	0.0);	(647200.0,	4201100.0,	2.6,	2.6,	0.0);
(647250.0,	4201100.0,	2.6,	2.6,	0.0);	(647300.0,	4201100.0,	2.6,	2.6,	0.0);
(647350.0,	4201100.0,	2.6,	2.6,	0.0);	(647400.0,	4201100.0,	2.6,	2.6,	0.0);
(647450.0,	4201100.0,	2.6,	2.6,	0.0);	(647500.0,	4201100.0,	2.6,	2.6,	0.0);
(647550.0,	4201100.0,	2.6,	2.6,	0.0);	(647600.0,	4201100.0,	2.6,	2.6,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	647100.0,	4201150.0,	2.8,	2.8,	0.0);	(	647150.0,	4201150.0,	2.8,	2.8,	0.0);
(	647200.0,	4201150.0,	2.8,	2.8,	0.0);	(	647250.0,	4201150.0,	2.8,	2.8,	0.0);
(	647300.0,	4201150.0,	2.8,	2.8,	0.0);	(	647350.0,	4201150.0,	2.7,	2.7,	0.0);
(	647400.0,	4201150.0,	2.7,	2.7,	0.0);	(	647450.0,	4201150.0,	2.7,	2.7,	0.0);
(	647500.0,	4201150.0,	2.7,	2.7,	0.0);	(	647550.0,	4201150.0,	2.6,	2.6,	0.0);
(	647600.0,	4201150.0,	2.6,	2.6,	0.0);	(	647100.0,	4201200.0,	3.1,	3.1,	0.0);
(	647150.0,	4201200.0,	3.1,	3.1,	0.0);	(	647200.0,	4201200.0,	3.1,	3.1,	0.0);
(	647250.0,	4201200.0,	3.1,	3.1,	0.0);	(	647300.0,	4201200.0,	3.1,	3.1,	0.0);
(	647350.0,	4201200.0,	3.1,	3.1,	0.0);	(	647400.0,	4201200.0,	3.1,	3.1,	0.0);
(	647450.0,	4201200.0,	3.0,	3.0,	0.0);	(	647500.0,	4201200.0,	2.8,	2.8,	0.0);
(	647550.0,	4201200.0,	2.6,	2.6,	0.0);	(	647600.0,	4201200.0,	2.6,	2.6,	0.0);
(	647100.0,	4201250.0,	3.4,	3.4,	0.0);	(	647150.0,	4201250.0,	3.4,	3.4,	0.0);
(	647200.0,	4201250.0,	3.5,	3.5,	0.0);	(	647250.0,	4201250.0,	3.4,	3.4,	0.0);
(	647400.0,	4201250.0,	3.4,	3.4,	0.0);	(	647450.0,	4201250.0,	3.3,	3.3,	0.0);
(	647500.0,	4201250.0,	3.0,	3.0,	0.0);	(	647550.0,	4201250.0,	2.6,	2.6,	0.0);
(	647600.0,	4201250.0,	2.6,	2.6,	0.0);	(	647100.0,	4201300.0,	3.6,	3.6,	0.0);
(	647150.0,	4201300.0,	3.6,	3.6,	0.0);	(	647200.0,	4201300.0,	3.6,	3.6,	0.0);
(	647250.0,	4201300.0,	3.6,	3.6,	0.0);	(	647500.0,	4201300.0,	3.4,	3.4,	0.0);
(	647550.0,	4201300.0,	2.6,	2.6,	0.0);	(	647600.0,	4201300.0,	2.6,	2.6,	0.0);
(	647100.0,	4201350.0,	3.5,	3.5,	0.0);	(	647150.0,	4201350.0,	3.5,	3.5,	0.0);
(	647200.0,	4201350.0,	3.5,	3.5,	0.0);	(	647250.0,	4201350.0,	3.5,	3.5,	0.0);
(	647450.0,	4201350.0,	3.6,	3.6,	0.0);	(	647500.0,	4201350.0,	3.6,	3.6,	0.0);
(	647550.0,	4201350.0,	2.8,	2.8,	0.0);	(	647600.0,	4201350.0,	2.6,	2.6,	0.0);
(	647100.0,	4201400.0,	3.4,	3.4,	0.0);	(	647150.0,	4201400.0,	3.4,	3.4,	0.0);
(	647200.0,	4201400.0,	3.4,	3.4,	0.0);	(	647250.0,	4201400.0,	3.4,	3.4,	0.0);
(	647300.0,	4201400.0,	3.5,	3.5,	0.0);	(	647350.0,	4201400.0,	3.5,	3.5,	0.0);
(	647400.0,	4201400.0,	3.6,	3.6,	0.0);	(	647450.0,	4201400.0,	3.6,	3.6,	0.0);
(	647500.0,	4201400.0,	3.6,	3.6,	0.0);	(	647550.0,	4201400.0,	3.5,	3.5,	0.0);
(	647600.0,	4201400.0,	2.6,	2.6,	0.0);	(	647100.0,	4201450.0,	3.2,	3.2,	0.0);
(	647150.0,	4201450.0,	3.2,	3.2,	0.0);	(	647200.0,	4201450.0,	3.2,	3.2,	0.0);
(	647250.0,	4201450.0,	3.3,	3.3,	0.0);	(	647300.0,	4201450.0,	3.4,	3.4,	0.0);
(	647350.0,	4201450.0,	3.5,	3.5,	0.0);	(	647400.0,	4201450.0,	3.5,	3.5,	0.0);
(	647450.0,	4201450.0,	3.5,	3.5,	0.0);	(	647500.0,	4201450.0,	3.6,	3.6,	0.0);
(	647550.0,	4201450.0,	3.6,	3.6,	0.0);	(	647600.0,	4201450.0,	3.6,	3.6,	0.0);
(	647100.0,	4201500.0,	2.9,	2.9,	0.0);	(	647150.0,	4201500.0,	3.0,	3.0,	0.0);
(	647200.0,	4201500.0,	3.0,	3.0,	0.0);	(	647450.0,	4201500.0,	3.5,	3.5,	0.0);
(	647500.0,	4201500.0,	3.5,	3.5,	0.0);	(	647550.0,	4201500.0,	3.6,	3.6,	0.0);
(	647600.0,	4201500.0,	3.6,	3.6,	0.0);	(	647100.0,	4201550.0,	2.8,	2.8,	0.0);
(	647150.0,	4201550.0,	2.9,	2.9,	0.0);	(	647200.0,	4201550.0,	2.9,	2.9,	0.0);
(	647250.0,	4201550.0,	3.0,	3.0,	0.0);	(	647300.0,	4201550.0,	3.2,	3.2,	0.0);
(	647350.0,	4201550.0,	3.4,	3.4,	0.0);	(	647400.0,	4201550.0,	3.4,	3.4,	0.0);
(	647450.0,	4201550.0,	3.5,	3.5,	0.0);	(	647500.0,	4201550.0,	3.5,	3.5,	0.0);
(	647550.0,	4201550.0,	3.5,	3.5,	0.0);	(	647600.0,	4201550.0,	3.5,	3.5,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
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1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54,   3.09,   5.14,   8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: 23237_2014.SFC Met Version: 18081
Profile file: 23237_2014.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 23237 Upper air station no.: 23230
Name: UNKNOWN Name: UNKNOWN
Year: 2014 Year: 2014

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
14	01	01	1	01	-3.1	0.077	-9.000	-9.000	-999.	51.	13.1	0.07	0.86	1.00	0.99	136.	10.0	274.9	2.0
14	01	01	1	02	-8.1	0.117	-9.000	-9.000	-999.	96.	17.9	0.04	0.86	1.00	1.79	84.	10.0	274.2	2.0
14	01	01	1	03	-5.5	0.097	-9.000	-9.000	-999.	72.	15.1	0.06	0.86	1.00	1.40	111.	10.0	273.1	2.0
14	01	01	1	04	-8.9	0.126	-9.000	-9.000	-999.	107.	20.2	0.07	0.86	1.00	1.72	125.	10.0	272.5	2.0
14	01	01	1	05	-2.8	0.071	-9.000	-9.000	-999.	46.	11.9	0.04	0.86	1.00	1.01	82.	10.0	273.1	2.0
14	01	01	1	06	-13.6	0.155	-9.000	-9.000	-999.	146.	26.4	0.06	0.86	1.00	2.18	92.	10.0	272.0	2.0
14	01	01	1	07	-5.3	0.095	-9.000	-9.000	-999.	72.	14.9	0.06	0.86	1.00	1.38	110.	10.0	272.5	2.0
14	01	01	1	08	-15.9	0.168	-9.000	-9.000	-999.	165.	31.0	0.06	0.86	0.73	2.35	109.	10.0	273.8	2.0
14	01	01	1	09	-1.0	0.125	-9.000	-9.000	-999.	106.	169.7	0.06	0.86	0.39	1.67	95.	10.0	277.0	2.0
14	01	01	1	10	41.8	0.219	0.473	0.015	92.	246.	-22.9	0.06	0.86	0.27	2.44	92.	10.0	281.4	2.0
14	01	01	1	11	75.3	0.208	0.708	0.016	171.	227.	-10.9	0.06	0.86	0.23	2.15	112.	10.0	284.9	2.0
14	01	01	1	12	93.9	0.206	0.832	0.016	223.	224.	-8.4	0.07	0.86	0.22	1.95	129.	10.0	287.0	2.0
14	01	01	1	13	96.7	0.164	0.891	0.014	266.	160.	-4.2	0.07	0.86	0.21	1.40	168.	10.0	288.8	2.0
14	01	01	1	14	83.6	0.136	0.894	0.013	310.	121.	-2.8	0.07	0.86	0.22	1.11	192.	10.0	290.4	2.0
14	01	01	1	15	54.7	0.164	0.824	0.012	372.	160.	-7.4	0.08	0.86	0.26	1.48	291.	10.0	289.9	2.0
14	01	01	1	16	13.6	0.103	0.526	0.012	389.	81.	-7.4	0.05	0.86	0.35	1.03	301.	10.0	289.9	2.0
14	01	01	1	17	-2.9	0.075	-9.000	-9.000	-999.	49.	13.0	0.05	0.86	0.60	1.06	311.	10.0	287.0	2.0
14	01	01	1	18	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.05	0.86	1.00	0.00	0.	10.0	284.9	2.0
14	01	01	1	19	-1.9	0.064	-9.000	-9.000	-999.	39.	12.3	0.04	0.86	1.00	0.80	332.	10.0	282.5	2.0
14	01	01	1	20	-1.2	0.058	-9.000	-9.000	-999.	34.	15.4	0.04	0.86	1.00	0.53	347.	10.0	282.0	2.0
14	01	01	1	21	-2.0	0.066	-9.000	-9.000	-999.	41.	13.2	0.06	0.86	1.00	0.75	90.	10.0	279.2	2.0
14	01	01	1	22	-7.6	0.116	-9.000	-9.000	-999.	95.	18.8	0.07	0.86	1.00	1.60	131.	10.0	278.8	2.0
14	01	01	1	23	-2.6	0.072	-9.000	-9.000	-999.	47.	13.0	0.07	0.86	1.00	0.89	124.	10.0	277.5	2.0
14	01	01	1	24	-3.2	0.076	-9.000	-9.000	-999.	50.	12.7	0.06	0.86	1.00	1.04	104.	10.0	275.9	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
14	01	01	01	10.0	1	136.	0.99	274.9	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647283.30	4201227.60	0.15567	647278.80	4201250.90	0.19875
647274.40	4201274.10	0.24436	647270.00	4201297.30	0.26143
647265.60	4201320.50	0.24795	647261.20	4201343.70	0.22074
647283.50	4201347.90	0.24753	647305.90	4201352.10	0.26849
647328.20	4201356.20	0.27348	647350.60	4201360.40	0.26776
647372.90	4201364.60	0.25509	647395.20	4201368.70	0.23058
647417.60	4201372.90	0.18245	647439.90	4201377.10	0.12913
647443.70	4201357.40	0.26967	647447.50	4201337.70	0.44129
647451.20	4201318.10	0.54196	647455.00	4201298.40	0.56307
647458.80	4201278.80	0.44989	647456.80	4201261.30	0.37093
647435.10	4201257.10	0.42436	647413.40	4201252.90	0.51804
647391.70	4201248.70	0.64272	647370.00	4201244.50	0.64963
647348.30	4201240.20	0.60459	647326.60	4201236.00	0.50219
647304.90	4201231.80	0.32016	647229.30	4201468.60	0.05343
647227.50	4201487.60	0.04471	647225.80	4201506.50	0.03768
647224.00	4201525.50	0.03192	647247.20	4201527.30	0.03055
647270.30	4201529.10	0.02876	647293.40	4201530.90	0.02667
647316.50	4201532.70	0.02437	647339.70	4201534.60	0.02194
647362.80	4201536.40	0.01961	647379.00	4201524.10	0.02055
647395.20	4201511.80	0.02141	647411.30	4201499.50	0.02224
647427.50	4201487.20	0.02306	647402.80	4201484.90	0.02719
647378.00	4201482.60	0.03275	647353.20	4201480.20	0.03906
647328.40	4201477.90	0.04462	647303.60	4201475.60	0.04870
647278.90	4201473.30	0.05141	647254.10	4201470.90	0.05311
647700.00	4201100.00	0.03476	647750.00	4201100.00	0.02789
647800.00	4201100.00	0.02250	647850.00	4201100.00	0.01827
647700.00	4201150.00	0.03774	647750.00	4201150.00	0.02883
647850.00	4201150.00	0.01758	647700.00	4201200.00	0.03724
647750.00	4201250.00	0.02336	647750.00	4201300.00	0.01863
647800.00	4201300.00	0.01421	647850.00	4201300.00	0.01122
647750.00	4201350.00	0.01387	647800.00	4201350.00	0.01101
647750.00	4201400.00	0.00948	647800.00	4201400.00	0.00785
647850.00	4200900.00	0.01282	647900.00	4200900.00	0.01157
647750.00	4200950.00	0.01847	647800.00	4200950.00	0.01646
647850.00	4200950.00	0.01460	647900.00	4200950.00	0.01295
647750.00	4201000.00	0.02179	647800.00	4201000.00	0.01890
647850.00	4201000.00	0.01637	647900.00	4201000.00	0.01420
647700.00	4201050.00	0.02999	647750.00	4201050.00	0.02519
647800.00	4201050.00	0.02113	647850.00	4201050.00	0.01776
647900.00	4201050.00	0.01497	647100.00	4201100.00	0.01084

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647150.00	4201100.00	0.01326	647200.00	4201100.00	0.01802
647250.00	4201100.00	0.02381	647300.00	4201100.00	0.02994
647350.00	4201100.00	0.04166	647400.00	4201100.00	0.05832
647450.00	4201100.00	0.06886	647500.00	4201100.00	0.06922
647550.00	4201100.00	0.06270	647600.00	4201100.00	0.05310
647100.00	4201150.00	0.01530	647150.00	4201150.00	0.01844
647200.00	4201150.00	0.02442	647250.00	4201150.00	0.03526
647300.00	4201150.00	0.05403	647350.00	4201150.00	0.09124
647400.00	4201150.00	0.12199	647450.00	4201150.00	0.12411
647500.00	4201150.00	0.10791	647550.00	4201150.00	0.08683
647600.00	4201150.00	0.06651	647100.00	4201200.00	0.02089
647150.00	4201200.00	0.02722	647200.00	4201200.00	0.03820
647250.00	4201200.00	0.06122	647300.00	4201200.00	0.13991
647350.00	4201200.00	0.27917	647400.00	4201200.00	0.29272
647450.00	4201200.00	0.22100	647500.00	4201200.00	0.15996
647550.00	4201200.00	0.11175	647600.00	4201200.00	0.07616
647100.00	4201250.00	0.02458	647150.00	4201250.00	0.03556
647200.00	4201250.00	0.05723	647250.00	4201250.00	0.11912
647400.00	4201250.00	0.60315	647450.00	4201250.00	0.34990
647500.00	4201250.00	0.22184	647550.00	4201250.00	0.12708
647600.00	4201250.00	0.07551	647100.00	4201300.00	0.02549
647150.00	4201300.00	0.04066	647200.00	4201300.00	0.07642
647250.00	4201300.00	0.19155	647500.00	4201300.00	0.25364
647550.00	4201300.00	0.10934	647600.00	4201300.00	0.05958
647100.00	4201350.00	0.02684	647150.00	4201350.00	0.04424
647200.00	4201350.00	0.08491	647250.00	4201350.00	0.19277
647450.00	4201350.00	0.33668	647500.00	4201350.00	0.13130
647550.00	4201350.00	0.06174	647600.00	4201350.00	0.03688
647100.00	4201400.00	0.02999	647150.00	4201400.00	0.04704
647200.00	4201400.00	0.07796	647250.00	4201400.00	0.11656
647300.00	4201400.00	0.13771	647350.00	4201400.00	0.14445
647400.00	4201400.00	0.12318	647450.00	4201400.00	0.06760
647500.00	4201400.00	0.04334	647550.00	4201400.00	0.02912
647600.00	4201400.00	0.02047	647100.00	4201450.00	0.03011
647150.00	4201450.00	0.04259	647200.00	4201450.00	0.05741
647250.00	4201450.00	0.06621	647300.00	4201450.00	0.06768
647350.00	4201450.00	0.06140	647400.00	4201450.00	0.04428
647450.00	4201450.00	0.03023	647500.00	4201450.00	0.02158
647550.00	4201450.00	0.01669	647600.00	4201450.00	0.01303
647100.00	4201500.00	0.02709	647150.00	4201500.00	0.03419

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647200.00	4201500.00	0.03921	647450.00	4201500.00	0.01825
647500.00	4201500.00	0.01381	647550.00	4201500.00	0.01111
647600.00	4201500.00	0.00928	647100.00	4201550.00	0.02280
647150.00	4201550.00	0.02593	647200.00	4201550.00	0.02658
647250.00	4201550.00	0.02468	647300.00	4201550.00	0.02156
647350.00	4201550.00	0.01814	647400.00	4201550.00	0.01518
647450.00	4201550.00	0.01261	647500.00	4201550.00	0.00995
647550.00	4201550.00	0.00809	647600.00	4201550.00	0.00696

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.64963	(647370.00, 4201244.50, 3.37, 3.37, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.64272	(647391.70, 4201248.70, 3.40, 3.40, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.60459	(647348.30, 4201240.20, 3.35, 3.35, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.60315	(647400.00, 4201250.00, 3.40, 3.40, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.56307	(647455.00, 4201298.40, 3.56, 3.56, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.54196	(647451.20, 4201318.10, 3.66, 3.66, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.51804	(647413.40, 4201252.90, 3.41, 3.41, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.50219	(647326.60, 4201236.00, 3.33, 3.33, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.44989	(647458.80, 4201278.80, 3.43, 3.43, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.44129	(647447.50, 4201337.70, 3.65, 3.65, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   2 Warning Message(s)
A Total of   159 Informational Message(s)

A Total of   8760 Hours Were Processed

A Total of   109 Calm Hours Identified

A Total of   50 Missing Hours Identified (0.57 Percent)

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
ME W186   216   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used   0.50
ME W187   216   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

   ****
   *** AERMOD Finishes Successfully ***
   ****

 *** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

                                          ***   MODEL SETUP OPTIONS SUMMARY   ***
 -

 **Model Is Setup For Calculation of Average CONCentration Values.

   -- DEPOSITION LOGIC --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION. DRYDPLT = F
 **Model Uses NO WET DEPLETION. WETDPLT = F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of: DPM_ANN

 **Model Calculates PERIOD Averages Only

 **This Run Includes: 1 Source(s);   1 Source Group(s); and   176 Receptor(s)

                with: 0 POINT(s), including
                           0 POINTCAP(s) and   0 POINTHOR(s)
                 and: 0 VOLUME source(s)
                 and: 1 AREA type source(s)
                 and: 0 LINE source(s)
                 and: 0 OPENPIT source(s)
                 and: 0 BUOYANT LINE source(s) with   0 line(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date: 18081

 **Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 8.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Input Runstream File: ContandaRocket_Const_2015_DPM_ANN.DTA
**Output Print File: ContandaRocket_Const_2015_DPM_ANN.LST

**File for Summary of Results: F:\Projects\Contanda Rocket\ContandaRocket_Const_2015_DPM_ANN.SUM

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CONST	0	0.29389E-06	647283.3	4201227.6	3.3	5.00	6	1.00	NO	HROFDY

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

```
SRCGROUP ID                                                SOURCE IDs
-----------                                                ----------

 ALL        CONST      ,
```

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = CONST ; SOURCE TYPE = AREAPOLY :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.26670E+01	9	.26670E+01	10	.26670E+01	11	.26670E+01	12	.26670E+01
13	.26670E+01	14	.26670E+01	15	.26670E+01	16	.26670E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647283.3,	4201227.6,	3.3,	3.3,	0.0);	(647278.8,	4201250.9,	3.4,	3.4,	0.0);
(647274.4,	4201274.1,	3.6,	3.6,	0.0);	(647270.0,	4201297.3,	3.6,	3.6,	0.0);
(647265.6,	4201320.5,	3.6,	3.6,	0.0);	(647261.2,	4201343.7,	3.6,	3.6,	0.0);
(647283.5,	4201347.9,	3.6,	3.6,	0.0);	(647305.9,	4201352.1,	3.6,	3.6,	0.0);
(647328.2,	4201356.2,	3.6,	3.6,	0.0);	(647350.6,	4201360.4,	3.6,	3.6,	0.0);
(647372.9,	4201364.6,	3.6,	3.6,	0.0);	(647395.2,	4201368.7,	3.6,	3.6,	0.0);
(647417.6,	4201372.9,	3.6,	3.6,	0.0);	(647439.9,	4201377.1,	3.6,	3.6,	0.0);
(647443.7,	4201357.4,	3.6,	3.6,	0.0);	(647447.5,	4201337.7,	3.6,	3.6,	0.0);
(647451.2,	4201318.1,	3.7,	3.7,	0.0);	(647455.0,	4201298.4,	3.6,	3.6,	0.0);
(647458.8,	4201278.8,	3.4,	3.4,	0.0);	(647456.8,	4201261.3,	3.3,	3.3,	0.0);
(647435.1,	4201257.1,	3.4,	3.4,	0.0);	(647413.4,	4201252.9,	3.4,	3.4,	0.0);
(647391.7,	4201248.7,	3.4,	3.4,	0.0);	(647370.0,	4201244.5,	3.4,	3.4,	0.0);
(647348.3,	4201240.2,	3.3,	3.3,	0.0);	(647326.6,	4201236.0,	3.3,	3.3,	0.0);
(647304.9,	4201231.8,	3.3,	3.3,	0.0);	(647229.3,	4201468.6,	3.2,	3.2,	0.0);
(647227.5,	4201487.6,	3.1,	3.1,	0.0);	(647225.8,	4201506.5,	3.0,	3.0,	0.0);
(647224.0,	4201525.5,	2.9,	2.9,	0.0);	(647247.2,	4201527.3,	3.0,	3.0,	0.0);
(647270.3,	4201529.1,	3.2,	3.2,	0.0);	(647293.4,	4201530.9,	3.2,	3.2,	0.0);
(647316.5,	4201532.7,	3.3,	3.3,	0.0);	(647339.7,	4201534.6,	3.4,	3.4,	0.0);
(647362.8,	4201536.4,	3.4,	3.4,	0.0);	(647379.0,	4201524.1,	3.4,	3.4,	0.0);
(647395.2,	4201511.8,	3.5,	3.5,	0.0);	(647411.3,	4201499.5,	3.5,	3.5,	0.0);
(647427.5,	4201487.2,	3.5,	3.5,	0.0);	(647402.8,	4201484.9,	3.5,	3.5,	0.0);
(647378.0,	4201482.6,	3.5,	3.5,	0.0);	(647353.2,	4201480.2,	3.4,	3.4,	0.0);
(647328.4,	4201477.9,	3.4,	3.4,	0.0);	(647303.6,	4201475.6,	3.4,	3.4,	0.0);
(647278.9,	4201473.3,	3.3,	3.3,	0.0);	(647254.1,	4201470.9,	3.2,	3.2,	0.0);
(647700.0,	4201100.0,	2.6,	2.6,	0.0);	(647750.0,	4201100.0,	2.6,	2.6,	0.0);
(647800.0,	4201100.0,	2.6,	2.6,	0.0);	(647850.0,	4201100.0,	2.6,	2.6,	0.0);
(647700.0,	4201150.0,	2.6,	2.6,	0.0);	(647750.0,	4201150.0,	2.6,	2.6,	0.0);
(647850.0,	4201150.0,	2.6,	2.6,	0.0);	(647700.0,	4201200.0,	2.6,	2.6,	0.0);
(647750.0,	4201250.0,	2.6,	2.6,	0.0);	(647750.0,	4201300.0,	2.6,	2.6,	0.0);
(647800.0,	4201300.0,	2.6,	2.6,	0.0);	(647850.0,	4201300.0,	2.6,	2.6,	0.0);
(647750.0,	4201350.0,	2.6,	2.6,	0.0);	(647800.0,	4201350.0,	2.6,	2.6,	0.0);
(647750.0,	4201400.0,	2.6,	2.6,	0.0);	(647800.0,	4201400.0,	2.6,	2.6,	0.0);
(647850.0,	4200900.0,	2.6,	2.6,	0.0);	(647900.0,	4200900.0,	2.6,	2.6,	0.0);
(647750.0,	4200950.0,	2.6,	2.6,	0.0);	(647800.0,	4200950.0,	2.6,	2.6,	0.0);
(647850.0,	4200950.0,	2.6,	2.6,	0.0);	(647900.0,	4200950.0,	2.6,	2.6,	0.0);
(647750.0,	4201000.0,	2.6,	2.6,	0.0);	(647800.0,	4201000.0,	2.6,	2.6,	0.0);
(647850.0,	4201000.0,	2.6,	2.6,	0.0);	(647900.0,	4201000.0,	2.6,	2.6,	0.0);
(647700.0,	4201050.0,	2.6,	2.6,	0.0);	(647750.0,	4201050.0,	2.6,	2.6,	0.0);
(647800.0,	4201050.0,	2.6,	2.6,	0.0);	(647850.0,	4201050.0,	2.6,	2.6,	0.0);
(647900.0,	4201050.0,	2.6,	2.6,	0.0);	(647100.0,	4201100.0,	2.6,	2.6,	0.0);
(647150.0,	4201100.0,	2.6,	2.6,	0.0);	(647200.0,	4201100.0,	2.6,	2.6,	0.0);
(647250.0,	4201100.0,	2.6,	2.6,	0.0);	(647300.0,	4201100.0,	2.6,	2.6,	0.0);
(647350.0,	4201100.0,	2.6,	2.6,	0.0);	(647400.0,	4201100.0,	2.6,	2.6,	0.0);
(647450.0,	4201100.0,	2.6,	2.6,	0.0);	(647500.0,	4201100.0,	2.6,	2.6,	0.0);
(647550.0,	4201100.0,	2.6,	2.6,	0.0);	(647600.0,	4201100.0,	2.6,	2.6,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647100.0,	4201150.0,	2.8,	2.8,	0.0);	(647150.0,	4201150.0,	2.8,	2.8,	0.0);
(647200.0,	4201150.0,	2.8,	2.8,	0.0);	(647250.0,	4201150.0,	2.8,	2.8,	0.0);
(647300.0,	4201150.0,	2.8,	2.8,	0.0);	(647350.0,	4201150.0,	2.7,	2.7,	0.0);
(647400.0,	4201150.0,	2.7,	2.7,	0.0);	(647450.0,	4201150.0,	2.7,	2.7,	0.0);
(647500.0,	4201150.0,	2.7,	2.7,	0.0);	(647550.0,	4201150.0,	2.6,	2.6,	0.0);
(647600.0,	4201150.0,	2.6,	2.6,	0.0);	(647100.0,	4201200.0,	3.1,	3.1,	0.0);
(647150.0,	4201200.0,	3.1,	3.1,	0.0);	(647200.0,	4201200.0,	3.1,	3.1,	0.0);
(647250.0,	4201200.0,	3.1,	3.1,	0.0);	(647300.0,	4201200.0,	3.1,	3.1,	0.0);
(647350.0,	4201200.0,	3.1,	3.1,	0.0);	(647400.0,	4201200.0,	3.1,	3.1,	0.0);
(647450.0,	4201200.0,	3.0,	3.0,	0.0);	(647500.0,	4201200.0,	2.8,	2.8,	0.0);
(647550.0,	4201200.0,	2.6,	2.6,	0.0);	(647600.0,	4201200.0,	2.6,	2.6,	0.0);
(647100.0,	4201250.0,	3.4,	3.4,	0.0);	(647150.0,	4201250.0,	3.4,	3.4,	0.0);
(647200.0,	4201250.0,	3.5,	3.5,	0.0);	(647250.0,	4201250.0,	3.4,	3.4,	0.0);
(647400.0,	4201250.0,	3.4,	3.4,	0.0);	(647450.0,	4201250.0,	3.3,	3.3,	0.0);
(647500.0,	4201250.0,	3.0,	3.0,	0.0);	(647550.0,	4201250.0,	2.6,	2.6,	0.0);
(647600.0,	4201250.0,	2.6,	2.6,	0.0);	(647100.0,	4201300.0,	3.6,	3.6,	0.0);
(647150.0,	4201300.0,	3.6,	3.6,	0.0);	(647200.0,	4201300.0,	3.6,	3.6,	0.0);
(647250.0,	4201300.0,	3.6,	3.6,	0.0);	(647500.0,	4201300.0,	3.4,	3.4,	0.0);
(647550.0,	4201300.0,	2.6,	2.6,	0.0);	(647600.0,	4201300.0,	2.6,	2.6,	0.0);
(647100.0,	4201350.0,	3.5,	3.5,	0.0);	(647150.0,	4201350.0,	3.5,	3.5,	0.0);
(647200.0,	4201350.0,	3.5,	3.5,	0.0);	(647250.0,	4201350.0,	3.5,	3.5,	0.0);
(647450.0,	4201350.0,	3.6,	3.6,	0.0);	(647500.0,	4201350.0,	3.6,	3.6,	0.0);
(647550.0,	4201350.0,	2.8,	2.8,	0.0);	(647600.0,	4201350.0,	2.6,	2.6,	0.0);
(647100.0,	4201400.0,	3.4,	3.4,	0.0);	(647150.0,	4201400.0,	3.4,	3.4,	0.0);
(647200.0,	4201400.0,	3.4,	3.4,	0.0);	(647250.0,	4201400.0,	3.4,	3.4,	0.0);
(647300.0,	4201400.0,	3.5,	3.5,	0.0);	(647350.0,	4201400.0,	3.5,	3.5,	0.0);
(647400.0,	4201400.0,	3.6,	3.6,	0.0);	(647450.0,	4201400.0,	3.6,	3.6,	0.0);
(647500.0,	4201400.0,	3.6,	3.6,	0.0);	(647550.0,	4201400.0,	3.5,	3.5,	0.0);
(647600.0,	4201400.0,	2.6,	2.6,	0.0);	(647100.0,	4201450.0,	3.2,	3.2,	0.0);
(647150.0,	4201450.0,	3.2,	3.2,	0.0);	(647200.0,	4201450.0,	3.2,	3.2,	0.0);
(647250.0,	4201450.0,	3.3,	3.3,	0.0);	(647300.0,	4201450.0,	3.4,	3.4,	0.0);
(647350.0,	4201450.0,	3.5,	3.5,	0.0);	(647400.0,	4201450.0,	3.5,	3.5,	0.0);
(647450.0,	4201450.0,	3.5,	3.5,	0.0);	(647500.0,	4201450.0,	3.6,	3.6,	0.0);
(647550.0,	4201450.0,	3.6,	3.6,	0.0);	(647600.0,	4201450.0,	3.6,	3.6,	0.0);
(647100.0,	4201500.0,	2.9,	2.9,	0.0);	(647150.0,	4201500.0,	3.0,	3.0,	0.0);
(647200.0,	4201500.0,	3.0,	3.0,	0.0);	(647450.0,	4201500.0,	3.5,	3.5,	0.0);
(647500.0,	4201500.0,	3.5,	3.5,	0.0);	(647550.0,	4201500.0,	3.6,	3.6,	0.0);
(647600.0,	4201500.0,	3.6,	3.6,	0.0);	(647100.0,	4201550.0,	2.8,	2.8,	0.0);
(647150.0,	4201550.0,	2.9,	2.9,	0.0);	(647200.0,	4201550.0,	2.9,	2.9,	0.0);
(647250.0,	4201550.0,	3.0,	3.0,	0.0);	(647300.0,	4201550.0,	3.2,	3.2,	0.0);
(647350.0,	4201550.0,	3.4,	3.4,	0.0);	(647400.0,	4201550.0,	3.4,	3.4,	0.0);
(647450.0,	4201550.0,	3.5,	3.5,	0.0);	(647500.0,	4201550.0,	3.5,	3.5,	0.0);
(647550.0,	4201550.0,	3.5,	3.5,	0.0);	(647600.0,	4201550.0,	3.5,	3.5,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54,   3.09,   5.14,   8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: 23237_2015.SFC Met Version: 18081
Profile file: 23237_2015.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 23237 Upper air station no.: 23230
Name: UNKNOWN Name: UNKNOWN
Year: 2015 Year: 2015

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
15	01	01	1	01	-26.7	0.256	-9.000	-9.000	-999.	311.	72.2	0.07	0.86	1.00	3.35	123.	10.0	273.1	2.0
15	01	01	1	02	-22.0	0.211	-9.000	-9.000	-999.	233.	48.9	0.06	0.86	1.00	2.91	92.	10.0	273.1	2.0
15	01	01	1	03	-24.1	0.231	-9.000	-9.000	-999.	266.	58.6	0.06	0.86	1.00	3.17	95.	10.0	272.5	2.0
15	01	01	1	04	-17.2	0.175	-9.000	-9.000	-999.	176.	33.6	0.06	0.86	1.00	2.44	103.	10.0	272.5	2.0
15	01	01	1	05	-28.6	0.273	-9.000	-9.000	-999.	343.	82.3	0.06	0.86	1.00	3.73	119.	10.0	272.5	2.0
15	01	01	1	06	-27.4	0.261	-9.000	-9.000	-999.	320.	74.9	0.07	0.86	1.00	3.41	120.	10.0	272.0	2.0
15	01	01	1	07	-20.8	0.199	-9.000	-9.000	-999.	214.	43.4	0.06	0.86	1.00	2.75	111.	10.0	272.0	2.0
15	01	01	1	08	-22.4	0.215	-9.000	-9.000	-999.	239.	50.7	0.06	0.86	0.73	2.96	113.	10.0	272.5	2.0
15	01	01	1	09	-1.6	0.175	-9.000	-9.000	-999.	176.	297.7	0.06	0.86	0.39	2.32	113.	10.0	274.9	2.0
15	01	01	1	10	41.1	0.338	0.738	0.007	356.	472.	-85.6	0.07	0.86	0.27	3.93	130.	10.0	277.5	2.0
15	01	01	1	11	74.2	0.326	0.929	0.007	393.	448.	-42.6	0.07	0.86	0.23	3.64	137.	10.0	280.4	2.0
15	01	01	1	12	92.4	0.248	1.027	0.007	427.	299.	-15.0	0.07	0.86	0.22	2.52	138.	10.0	281.4	2.0
15	01	01	1	13	94.9	0.223	1.098	0.007	507.	253.	-10.6	0.07	0.86	0.21	2.18	144.	10.0	282.5	2.0
15	01	01	1	14	81.3	0.174	1.061	0.006	534.	175.	-5.9	0.06	0.86	0.22	1.67	115.	10.0	282.5	2.0
15	01	01	1	15	52.8	0.159	0.929	0.005	552.	152.	-6.9	0.07	0.86	0.26	1.47	136.	10.0	283.8	2.0
15	01	01	1	16	11.6	0.135	0.562	0.005	556.	119.	-19.2	0.07	0.86	0.35	1.40	158.	10.0	283.1	2.0
15	01	01	1	17	-7.6	0.119	-9.000	-9.000	-999.	98.	20.2	0.06	0.86	0.60	1.70	109.	10.0	281.4	2.0
15	01	01	1	18	-3.5	0.080	-9.000	-9.000	-999.	54.	13.1	0.06	0.86	1.00	1.11	231.	10.0	279.9	2.0
15	01	01	1	19	-1.5	0.063	-9.000	-9.000	-999.	38.	15.6	0.07	0.86	1.00	0.57	137.	10.0	278.1	2.0
15	01	01	1	20	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.05	0.86	1.00	0.00	0.	10.0	277.5	2.0
15	01	01	1	21	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.05	0.86	1.00	0.00	0.	10.0	275.4	2.0
15	01	01	1	22	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.05	0.86	1.00	0.00	0.	10.0	275.4	2.0
15	01	01	1	23	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.05	0.86	1.00	0.00	0.	10.0	272.5	2.0
15	01	01	1	24	-7.8	0.115	-9.000	-9.000	-999.	93.	17.6	0.04	0.86	1.00	1.76	70.	10.0	273.1	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
15	01	01	01	10.0	1	123.	3.35	273.2	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647283.30	4201227.60	0.13048	647278.80	4201250.90	0.16722
647274.40	4201274.10	0.21149	647270.00	4201297.30	0.23153
647265.60	4201320.50	0.22653	647261.20	4201343.70	0.21115
647283.50	4201347.90	0.24724	647305.90	4201352.10	0.27782
647328.20	4201356.20	0.29060	647350.60	4201360.40	0.29016
647372.90	4201364.60	0.28173	647395.20	4201368.70	0.26363
647417.60	4201372.90	0.22446	647439.90	4201377.10	0.17125
647443.70	4201357.40	0.33234	647447.50	4201337.70	0.50125
647451.20	4201318.10	0.58849	647455.00	4201298.40	0.58374
647458.80	4201278.80	0.45646	647456.80	4201261.30	0.37413
647435.10	4201257.10	0.43245	647413.40	4201252.90	0.52936
647391.70	4201248.70	0.64242	647370.00	4201244.50	0.63949
647348.30	4201240.20	0.58282	647326.60	4201236.00	0.47119
647304.90	4201231.80	0.28637	647229.30	4201468.60	0.05645
647227.50	4201487.60	0.04832	647225.80	4201506.50	0.04168
647224.00	4201525.50	0.03615	647247.20	4201527.30	0.03606
647270.30	4201529.10	0.03498	647293.40	4201530.90	0.03287
647316.50	4201532.70	0.02987	647339.70	4201534.60	0.02633
647362.80	4201536.40	0.02283	647379.00	4201524.10	0.02343
647395.20	4201511.80	0.02408	647411.30	4201499.50	0.02479
647427.50	4201487.20	0.02551	647402.80	4201484.90	0.03090
647378.00	4201482.60	0.03760	647353.20	4201480.20	0.04472
647328.40	4201477.90	0.05090	647303.60	4201475.60	0.05548
647278.90	4201473.30	0.05812	647254.10	4201470.90	0.05852
647700.00	4201100.00	0.03365	647750.00	4201100.00	0.02739
647800.00	4201100.00	0.02231	647850.00	4201100.00	0.01829
647700.00	4201150.00	0.03779	647750.00	4201150.00	0.02930
647850.00	4201150.00	0.01838	647700.00	4201200.00	0.03922
647750.00	4201250.00	0.02699	647750.00	4201300.00	0.02356
647800.00	4201300.00	0.01806	647850.00	4201300.00	0.01430
647750.00	4201350.00	0.01993	647800.00	4201350.00	0.01565
647750.00	4201400.00	0.01627	647800.00	4201400.00	0.01324
647850.00	4200900.00	0.01220	647900.00	4200900.00	0.01114
647750.00	4200950.00	0.01710	647800.00	4200950.00	0.01559
647850.00	4200950.00	0.01402	647900.00	4200950.00	0.01250
647750.00	4201000.00	0.02060	647800.00	4201000.00	0.01812
647850.00	4201000.00	0.01581	647900.00	4201000.00	0.01373
647700.00	4201050.00	0.02834	647750.00	4201050.00	0.02421
647800.00	4201050.00	0.02051	647850.00	4201050.00	0.01733
647900.00	4201050.00	0.01468	647100.00	4201100.00	0.00714

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647150.00	4201100.00	0.00970	647200.00	4201100.00	0.01350
647250.00	4201100.00	0.01886	647300.00	4201100.00	0.02886
647350.00	4201100.00	0.04270	647400.00	4201100.00	0.05543
647450.00	4201100.00	0.06236	647500.00	4201100.00	0.06178
647550.00	4201100.00	0.05644	647600.00	4201100.00	0.04904
647100.00	4201150.00	0.00932	647150.00	4201150.00	0.01190
647200.00	4201150.00	0.01734	647250.00	4201150.00	0.02775
647300.00	4201150.00	0.05092	647350.00	4201150.00	0.08691
647400.00	4201150.00	0.11244	647450.00	4201150.00	0.11374
647500.00	4201150.00	0.09893	647550.00	4201150.00	0.08086
647600.00	4201150.00	0.06369	647100.00	4201200.00	0.01466
647150.00	4201200.00	0.01844	647200.00	4201200.00	0.02588
647250.00	4201200.00	0.04498	647300.00	4201200.00	0.12719
647350.00	4201200.00	0.25787	647400.00	4201200.00	0.27292
647450.00	4201200.00	0.21038	647500.00	4201200.00	0.15239
647550.00	4201200.00	0.10899	647600.00	4201200.00	0.07657
647100.00	4201250.00	0.02103	647150.00	4201250.00	0.02891
647200.00	4201250.00	0.04458	647250.00	4201250.00	0.09194
647400.00	4201250.00	0.60934	647450.00	4201250.00	0.35182
647500.00	4201250.00	0.22218	647550.00	4201250.00	0.13237
647600.00	4201250.00	0.08146	647100.00	4201300.00	0.02527
647150.00	4201300.00	0.03847	647200.00	4201300.00	0.06760
647250.00	4201300.00	0.16230	647500.00	4201300.00	0.28107
647550.00	4201300.00	0.12845	647600.00	4201300.00	0.07237
647100.00	4201350.00	0.02752	647150.00	4201350.00	0.04305
647200.00	4201350.00	0.07926	647250.00	4201350.00	0.18201
647450.00	4201350.00	0.39961	647500.00	4201350.00	0.17692
647550.00	4201350.00	0.08797	647600.00	4201350.00	0.05357
647100.00	4201400.00	0.02821	647150.00	4201400.00	0.04328
647200.00	4201400.00	0.07292	647250.00	4201400.00	0.11724
647300.00	4201400.00	0.14287	647350.00	4201400.00	0.15215
647400.00	4201400.00	0.13897	647450.00	4201400.00	0.08518
647500.00	4201400.00	0.06197	647550.00	4201400.00	0.04532
647600.00	4201400.00	0.03390	647100.00	4201450.00	0.02713
647150.00	4201450.00	0.03931	647200.00	4201450.00	0.05632
647250.00	4201450.00	0.07060	647300.00	4201450.00	0.07435
647350.00	4201450.00	0.06814	647400.00	4201450.00	0.05098
647450.00	4201450.00	0.03429	647500.00	4201450.00	0.02675
647550.00	4201450.00	0.02207	647600.00	4201450.00	0.01909
647100.00	4201500.00	0.02501	647150.00	4201500.00	0.03323

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647200.00	4201500.00	0.04106	647450.00	4201500.00	0.01984
647500.00	4201500.00	0.01625	647550.00	4201500.00	0.01336
647600.00	4201500.00	0.01133	647100.00	4201550.00	0.02206
647150.00	4201550.00	0.02672	647200.00	4201550.00	0.02982
647250.00	4201550.00	0.03022	647300.00	4201550.00	0.02721
647350.00	4201550.00	0.02162	647400.00	4201550.00	0.01643
647450.00	4201550.00	0.01315	647500.00	4201550.00	0.01139
647550.00	4201550.00	0.00975	647600.00	4201550.00	0.00806

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.64242	AT (647391.70, 4201248.70, 3.40, 3.40, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.63949	AT (647370.00, 4201244.50, 3.37, 3.37, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.60934	AT (647400.00, 4201250.00, 3.40, 3.40, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.58849	AT (647451.20, 4201318.10, 3.66, 3.66, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.58374	AT (647455.00, 4201298.40, 3.56, 3.56, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.58282	AT (647348.30, 4201240.20, 3.35, 3.35, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.52936	AT (647413.40, 4201252.90, 3.41, 3.41, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.50125	AT (647447.50, 4201337.70, 3.65, 3.65, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.47119	AT (647326.60, 4201236.00, 3.33, 3.33, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.45646	AT (647458.80, 4201278.80, 3.43, 3.43, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   2 Warning Message(s)
A Total of   172 Informational Message(s)

A Total of   8760 Hours Were Processed

A Total of   119 Calm Hours Identified

A Total of   53 Missing Hours Identified (0.61 Percent)

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
ME W186   216   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used   0.50
ME W187   216   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

   ****
   *** AERMOD Finishes Successfully ***
   ****

 *** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

                                          ***   MODEL SETUP OPTIONS SUMMARY   ***
 -

 **Model Is Setup For Calculation of Average CONCentration Values.

   -- DEPOSITION LOGIC --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION. DRYDPLT = F
 **Model Uses NO WET DEPLETION. WETDPLT = F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of: DPM_ANN

 **Model Calculates PERIOD Averages Only

 **This Run Includes: 1 Source(s);   1 Source Group(s); and   176 Receptor(s)

                with: 0 POINT(s), including
                           0 POINTCAP(s) and   0 POINTHOR(s)
                 and: 0 VOLUME source(s)
                 and: 1 AREA type source(s)
                 and: 0 LINE source(s)
                 and: 0 OPENPIT source(s)
                 and: 0 BUOYANT LINE source(s) with   0 line(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date: 18081

 **Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 8.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Input Runstream File: ContandaRocket_Const_2016_DPM_ANN.DTA
**Output Print File: ContandaRocket_Const_2016_DPM_ANN.LST

**File for Summary of Results: F:\Projects\Contanda Rocket\ContandaRocket_Const_2016_DPM_ANN.SUM

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CONST	0	0.29389E-06	647283.3	4201227.6	3.3	5.00	6	1.00	NO	HROFDY

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	CONST ,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = CONST ; SOURCE TYPE = AREAPOLY :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.26670E+01	9	.26670E+01	10	.26670E+01	11	.26670E+01	12	.26670E+01
13	.26670E+01	14	.26670E+01	15	.26670E+01	16	.26670E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647283.3,	4201227.6,	3.3,	3.3,	0.0);	(647278.8,	4201250.9,	3.4,	3.4,	0.0);
(647274.4,	4201274.1,	3.6,	3.6,	0.0);	(647270.0,	4201297.3,	3.6,	3.6,	0.0);
(647265.6,	4201320.5,	3.6,	3.6,	0.0);	(647261.2,	4201343.7,	3.6,	3.6,	0.0);
(647283.5,	4201347.9,	3.6,	3.6,	0.0);	(647305.9,	4201352.1,	3.6,	3.6,	0.0);
(647328.2,	4201356.2,	3.6,	3.6,	0.0);	(647350.6,	4201360.4,	3.6,	3.6,	0.0);
(647372.9,	4201364.6,	3.6,	3.6,	0.0);	(647395.2,	4201368.7,	3.6,	3.6,	0.0);
(647417.6,	4201372.9,	3.6,	3.6,	0.0);	(647439.9,	4201377.1,	3.6,	3.6,	0.0);
(647443.7,	4201357.4,	3.6,	3.6,	0.0);	(647447.5,	4201337.7,	3.6,	3.6,	0.0);
(647451.2,	4201318.1,	3.7,	3.7,	0.0);	(647455.0,	4201298.4,	3.6,	3.6,	0.0);
(647458.8,	4201278.8,	3.4,	3.4,	0.0);	(647456.8,	4201261.3,	3.3,	3.3,	0.0);
(647435.1,	4201257.1,	3.4,	3.4,	0.0);	(647413.4,	4201252.9,	3.4,	3.4,	0.0);
(647391.7,	4201248.7,	3.4,	3.4,	0.0);	(647370.0,	4201244.5,	3.4,	3.4,	0.0);
(647348.3,	4201240.2,	3.3,	3.3,	0.0);	(647326.6,	4201236.0,	3.3,	3.3,	0.0);
(647304.9,	4201231.8,	3.3,	3.3,	0.0);	(647229.3,	4201468.6,	3.2,	3.2,	0.0);
(647227.5,	4201487.6,	3.1,	3.1,	0.0);	(647225.8,	4201506.5,	3.0,	3.0,	0.0);
(647224.0,	4201525.5,	2.9,	2.9,	0.0);	(647247.2,	4201527.3,	3.0,	3.0,	0.0);
(647270.3,	4201529.1,	3.2,	3.2,	0.0);	(647293.4,	4201530.9,	3.2,	3.2,	0.0);
(647316.5,	4201532.7,	3.3,	3.3,	0.0);	(647339.7,	4201534.6,	3.4,	3.4,	0.0);
(647362.8,	4201536.4,	3.4,	3.4,	0.0);	(647379.0,	4201524.1,	3.4,	3.4,	0.0);
(647395.2,	4201511.8,	3.5,	3.5,	0.0);	(647411.3,	4201499.5,	3.5,	3.5,	0.0);
(647427.5,	4201487.2,	3.5,	3.5,	0.0);	(647402.8,	4201484.9,	3.5,	3.5,	0.0);
(647378.0,	4201482.6,	3.5,	3.5,	0.0);	(647353.2,	4201480.2,	3.4,	3.4,	0.0);
(647328.4,	4201477.9,	3.4,	3.4,	0.0);	(647303.6,	4201475.6,	3.4,	3.4,	0.0);
(647278.9,	4201473.3,	3.3,	3.3,	0.0);	(647254.1,	4201470.9,	3.2,	3.2,	0.0);
(647700.0,	4201100.0,	2.6,	2.6,	0.0);	(647750.0,	4201100.0,	2.6,	2.6,	0.0);
(647800.0,	4201100.0,	2.6,	2.6,	0.0);	(647850.0,	4201100.0,	2.6,	2.6,	0.0);
(647700.0,	4201150.0,	2.6,	2.6,	0.0);	(647750.0,	4201150.0,	2.6,	2.6,	0.0);
(647850.0,	4201150.0,	2.6,	2.6,	0.0);	(647700.0,	4201200.0,	2.6,	2.6,	0.0);
(647750.0,	4201250.0,	2.6,	2.6,	0.0);	(647750.0,	4201300.0,	2.6,	2.6,	0.0);
(647800.0,	4201300.0,	2.6,	2.6,	0.0);	(647850.0,	4201300.0,	2.6,	2.6,	0.0);
(647750.0,	4201350.0,	2.6,	2.6,	0.0);	(647800.0,	4201350.0,	2.6,	2.6,	0.0);
(647750.0,	4201400.0,	2.6,	2.6,	0.0);	(647800.0,	4201400.0,	2.6,	2.6,	0.0);
(647850.0,	4200900.0,	2.6,	2.6,	0.0);	(647900.0,	4200900.0,	2.6,	2.6,	0.0);
(647750.0,	4200950.0,	2.6,	2.6,	0.0);	(647800.0,	4200950.0,	2.6,	2.6,	0.0);
(647850.0,	4200950.0,	2.6,	2.6,	0.0);	(647900.0,	4200950.0,	2.6,	2.6,	0.0);
(647750.0,	4201000.0,	2.6,	2.6,	0.0);	(647800.0,	4201000.0,	2.6,	2.6,	0.0);
(647850.0,	4201000.0,	2.6,	2.6,	0.0);	(647900.0,	4201000.0,	2.6,	2.6,	0.0);
(647700.0,	4201050.0,	2.6,	2.6,	0.0);	(647750.0,	4201050.0,	2.6,	2.6,	0.0);
(647800.0,	4201050.0,	2.6,	2.6,	0.0);	(647850.0,	4201050.0,	2.6,	2.6,	0.0);
(647900.0,	4201050.0,	2.6,	2.6,	0.0);	(647100.0,	4201100.0,	2.6,	2.6,	0.0);
(647150.0,	4201100.0,	2.6,	2.6,	0.0);	(647200.0,	4201100.0,	2.6,	2.6,	0.0);
(647250.0,	4201100.0,	2.6,	2.6,	0.0);	(647300.0,	4201100.0,	2.6,	2.6,	0.0);
(647350.0,	4201100.0,	2.6,	2.6,	0.0);	(647400.0,	4201100.0,	2.6,	2.6,	0.0);
(647450.0,	4201100.0,	2.6,	2.6,	0.0);	(647500.0,	4201100.0,	2.6,	2.6,	0.0);
(647550.0,	4201100.0,	2.6,	2.6,	0.0);	(647600.0,	4201100.0,	2.6,	2.6,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	647100.0,	4201150.0,	2.8,	2.8,	0.0);	(	647150.0,	4201150.0,	2.8,	2.8,	0.0);
(	647200.0,	4201150.0,	2.8,	2.8,	0.0);	(	647250.0,	4201150.0,	2.8,	2.8,	0.0);
(	647300.0,	4201150.0,	2.8,	2.8,	0.0);	(	647350.0,	4201150.0,	2.7,	2.7,	0.0);
(	647400.0,	4201150.0,	2.7,	2.7,	0.0);	(	647450.0,	4201150.0,	2.7,	2.7,	0.0);
(	647500.0,	4201150.0,	2.7,	2.7,	0.0);	(	647550.0,	4201150.0,	2.6,	2.6,	0.0);
(	647600.0,	4201150.0,	2.6,	2.6,	0.0);	(	647100.0,	4201200.0,	3.1,	3.1,	0.0);
(	647150.0,	4201200.0,	3.1,	3.1,	0.0);	(	647200.0,	4201200.0,	3.1,	3.1,	0.0);
(	647250.0,	4201200.0,	3.1,	3.1,	0.0);	(	647300.0,	4201200.0,	3.1,	3.1,	0.0);
(	647350.0,	4201200.0,	3.1,	3.1,	0.0);	(	647400.0,	4201200.0,	3.1,	3.1,	0.0);
(	647450.0,	4201200.0,	3.0,	3.0,	0.0);	(	647500.0,	4201200.0,	2.8,	2.8,	0.0);
(	647550.0,	4201200.0,	2.6,	2.6,	0.0);	(	647600.0,	4201200.0,	2.6,	2.6,	0.0);
(	647100.0,	4201250.0,	3.4,	3.4,	0.0);	(	647150.0,	4201250.0,	3.4,	3.4,	0.0);
(	647200.0,	4201250.0,	3.5,	3.5,	0.0);	(	647250.0,	4201250.0,	3.4,	3.4,	0.0);
(	647400.0,	4201250.0,	3.4,	3.4,	0.0);	(	647450.0,	4201250.0,	3.3,	3.3,	0.0);
(	647500.0,	4201250.0,	3.0,	3.0,	0.0);	(	647550.0,	4201250.0,	2.6,	2.6,	0.0);
(	647600.0,	4201250.0,	2.6,	2.6,	0.0);	(	647100.0,	4201300.0,	3.6,	3.6,	0.0);
(	647150.0,	4201300.0,	3.6,	3.6,	0.0);	(	647200.0,	4201300.0,	3.6,	3.6,	0.0);
(	647250.0,	4201300.0,	3.6,	3.6,	0.0);	(	647500.0,	4201300.0,	3.4,	3.4,	0.0);
(	647550.0,	4201300.0,	2.6,	2.6,	0.0);	(	647600.0,	4201300.0,	2.6,	2.6,	0.0);
(	647100.0,	4201350.0,	3.5,	3.5,	0.0);	(	647150.0,	4201350.0,	3.5,	3.5,	0.0);
(	647200.0,	4201350.0,	3.5,	3.5,	0.0);	(	647250.0,	4201350.0,	3.5,	3.5,	0.0);
(	647450.0,	4201350.0,	3.6,	3.6,	0.0);	(	647500.0,	4201350.0,	3.6,	3.6,	0.0);
(	647550.0,	4201350.0,	2.8,	2.8,	0.0);	(	647600.0,	4201350.0,	2.6,	2.6,	0.0);
(	647100.0,	4201400.0,	3.4,	3.4,	0.0);	(	647150.0,	4201400.0,	3.4,	3.4,	0.0);
(	647200.0,	4201400.0,	3.4,	3.4,	0.0);	(	647250.0,	4201400.0,	3.4,	3.4,	0.0);
(	647300.0,	4201400.0,	3.5,	3.5,	0.0);	(	647350.0,	4201400.0,	3.5,	3.5,	0.0);
(	647400.0,	4201400.0,	3.6,	3.6,	0.0);	(	647450.0,	4201400.0,	3.6,	3.6,	0.0);
(	647500.0,	4201400.0,	3.6,	3.6,	0.0);	(	647550.0,	4201400.0,	3.5,	3.5,	0.0);
(	647600.0,	4201400.0,	2.6,	2.6,	0.0);	(	647100.0,	4201450.0,	3.2,	3.2,	0.0);
(	647150.0,	4201450.0,	3.2,	3.2,	0.0);	(	647200.0,	4201450.0,	3.2,	3.2,	0.0);
(	647250.0,	4201450.0,	3.3,	3.3,	0.0);	(	647300.0,	4201450.0,	3.4,	3.4,	0.0);
(	647350.0,	4201450.0,	3.5,	3.5,	0.0);	(	647400.0,	4201450.0,	3.5,	3.5,	0.0);
(	647450.0,	4201450.0,	3.5,	3.5,	0.0);	(	647500.0,	4201450.0,	3.6,	3.6,	0.0);
(	647550.0,	4201450.0,	3.6,	3.6,	0.0);	(	647600.0,	4201450.0,	3.6,	3.6,	0.0);
(	647100.0,	4201500.0,	2.9,	2.9,	0.0);	(	647150.0,	4201500.0,	3.0,	3.0,	0.0);
(	647200.0,	4201500.0,	3.0,	3.0,	0.0);	(	647450.0,	4201500.0,	3.5,	3.5,	0.0);
(	647500.0,	4201500.0,	3.5,	3.5,	0.0);	(	647550.0,	4201500.0,	3.6,	3.6,	0.0);
(	647600.0,	4201500.0,	3.6,	3.6,	0.0);	(	647100.0,	4201550.0,	2.8,	2.8,	0.0);
(	647150.0,	4201550.0,	2.9,	2.9,	0.0);	(	647200.0,	4201550.0,	2.9,	2.9,	0.0);
(	647250.0,	4201550.0,	3.0,	3.0,	0.0);	(	647300.0,	4201550.0,	3.2,	3.2,	0.0);
(	647350.0,	4201550.0,	3.4,	3.4,	0.0);	(	647400.0,	4201550.0,	3.4,	3.4,	0.0);
(	647450.0,	4201550.0,	3.5,	3.5,	0.0);	(	647500.0,	4201550.0,	3.5,	3.5,	0.0);
(	647550.0,	4201550.0,	3.5,	3.5,	0.0);	(	647600.0,	4201550.0,	3.5,	3.5,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

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1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1
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NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: 23237_2016.SFC Met Version: 18081
Profile file: 23237_2016.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 23237 Upper air station no.: 23230
Name: UNKNOWN Name: UNKNOWN
Year: 2016 Year: 2016

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
16	01	01	1	01	-9.7	0.130	-9.000	-9.000	-999.	112.	20.5	0.06	0.50	1.00	1.86	253.	10.0	272.0	2.0
16	01	01	1	02	-8.2	0.119	-9.000	-9.000	-999.	98.	18.6	0.06	0.50	1.00	1.71	248.	10.0	271.4	2.0
16	01	01	1	03	-15.1	0.163	-9.000	-9.000	-999.	159.	29.4	0.06	0.50	1.00	2.30	264.	10.0	271.4	2.0
16	01	01	1	04	-26.6	0.254	-9.000	-9.000	-999.	308.	71.1	0.06	0.50	1.00	3.49	261.	10.0	272.5	2.0
16	01	01	1	05	-24.9	0.237	-9.000	-9.000	-999.	278.	62.0	0.06	0.50	1.00	3.27	261.	10.0	272.0	2.0
16	01	01	1	06	-25.5	0.243	-9.000	-9.000	-999.	287.	64.8	0.06	0.50	1.00	3.34	268.	10.0	272.0	2.0
16	01	01	1	07	-25.6	0.245	-9.000	-9.000	-999.	291.	66.0	0.08	0.50	1.00	3.12	273.	10.0	273.1	2.0
16	01	01	1	08	-23.0	0.221	-9.000	-9.000	-999.	249.	53.6	0.06	0.50	0.73	3.05	262.	10.0	273.1	2.0
16	01	01	1	09	-9.3	0.195	-9.000	-9.000	-999.	207.	72.9	0.06	0.50	0.39	2.67	262.	10.0	274.2	2.0
16	01	01	1	10	23.1	0.279	0.616	0.006	368.	354.	-85.6	0.08	0.50	0.27	3.15	270.	10.0	275.9	2.0
16	01	01	1	11	57.0	0.200	0.856	0.005	401.	217.	-12.7	0.08	0.50	0.23	1.93	274.	10.0	277.0	2.0
16	01	01	1	12	66.3	0.219	0.946	0.005	465.	246.	-14.5	0.08	0.50	0.22	2.15	270.	10.0	278.8	2.0
16	01	01	1	13	68.0	0.221	1.006	0.005	546.	249.	-14.4	0.08	0.50	0.21	2.16	286.	10.0	279.9	2.0
16	01	01	1	14	58.3	0.135	0.991	0.005	607.	122.	-3.9	0.05	0.50	0.22	1.23	314.	10.0	280.9	2.0
16	01	01	1	15	37.8	0.116	0.875	0.005	644.	94.	-3.7	0.07	0.50	0.26	0.97	170.	10.0	282.0	2.0
16	01	01	1	16	8.2	0.129	0.527	0.005	652.	111.	-23.9	0.07	0.50	0.35	1.37	164.	10.0	282.0	2.0
16	01	01	1	17	-11.9	0.151	-9.000	-9.000	-999.	141.	26.3	0.07	0.50	0.60	2.05	208.	10.0	279.2	2.0
16	01	01	1	18	-8.8	0.124	-9.000	-9.000	-999.	105.	19.7	0.05	0.50	1.00	1.79	310.	10.0	277.5	2.0
16	01	01	1	19	-6.1	0.101	-9.000	-9.000	-999.	77.	15.5	0.04	0.50	1.00	1.57	355.	10.0	278.8	2.0
16	01	01	1	20	-2.9	0.072	-9.000	-9.000	-999.	46.	11.6	0.03	0.50	1.00	1.08	23.	10.0	276.4	2.0
16	01	01	1	21	-4.6	0.088	-9.000	-9.000	-999.	63.	13.3	0.03	0.50	1.00	1.40	7.	10.0	276.4	2.0
16	01	01	1	22	-12.0	0.148	-9.000	-9.000	-999.	136.	24.4	0.08	0.50	1.00	1.94	297.	10.0	276.4	2.0
16	01	01	1	23	-5.3	0.097	-9.000	-9.000	-999.	72.	15.4	0.07	0.50	1.00	1.35	194.	10.0	275.9	2.0
16	01	01	1	24	-6.6	0.107	-9.000	-9.000	-999.	84.	16.8	0.06	0.50	1.00	1.55	246.	10.0	275.9	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
16	01	01	01	10.0	1	253.	1.86	272.1	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8784 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647283.30	4201227.60	0.13094	647278.80	4201250.90	0.17279
647274.40	4201274.10	0.22126	647270.00	4201297.30	0.24343
647265.60	4201320.50	0.23855	647261.20	4201343.70	0.22285
647283.50	4201347.90	0.25176	647305.90	4201352.10	0.27626
647328.20	4201356.20	0.28411	647350.60	4201360.40	0.27976
647372.90	4201364.60	0.26822	647395.20	4201368.70	0.24575
647417.60	4201372.90	0.20037	647439.90	4201377.10	0.14885
647443.70	4201357.40	0.28459	647447.50	4201337.70	0.43796
647451.20	4201318.10	0.52138	647455.00	4201298.40	0.52683
647458.80	4201278.80	0.42186	647456.80	4201261.30	0.34757
647435.10	4201257.10	0.39727	647413.40	4201252.90	0.48218
647391.70	4201248.70	0.58100	647370.00	4201244.50	0.57798
647348.30	4201240.20	0.53121	647326.60	4201236.00	0.43353
647304.90	4201231.80	0.26790	647229.30	4201468.60	0.05724
647227.50	4201487.60	0.04857	647225.80	4201506.50	0.04156
647224.00	4201525.50	0.03578	647247.20	4201527.30	0.03473
647270.30	4201529.10	0.03275	647293.40	4201530.90	0.03009
647316.50	4201532.70	0.02689	647339.70	4201534.60	0.02324
647362.80	4201536.40	0.01948	647379.00	4201524.10	0.01947
647395.20	4201511.80	0.01932	647411.30	4201499.50	0.01922
647427.50	4201487.20	0.01933	647402.80	4201484.90	0.02476
647378.00	4201482.60	0.03226	647353.20	4201480.20	0.04028
647328.40	4201477.90	0.04725	647303.60	4201475.60	0.05255
647278.90	4201473.30	0.05607	647254.10	4201470.90	0.05786
647700.00	4201100.00	0.03094	647750.00	4201100.00	0.02468
647800.00	4201100.00	0.01979	647850.00	4201100.00	0.01604
647700.00	4201150.00	0.03400	647750.00	4201150.00	0.02600
647850.00	4201150.00	0.01609	647700.00	4201200.00	0.03488
647750.00	4201250.00	0.02408	647750.00	4201300.00	0.02128
647800.00	4201300.00	0.01634	647850.00	4201300.00	0.01296
647750.00	4201350.00	0.01798	647800.00	4201350.00	0.01414
647750.00	4201400.00	0.01451	647800.00	4201400.00	0.01179
647850.00	4200900.00	0.01159	647900.00	4200900.00	0.01035
647750.00	4200950.00	0.01665	647800.00	4200950.00	0.01480
647850.00	4200950.00	0.01300	647900.00	4200950.00	0.01134
647750.00	4201000.00	0.01952	647800.00	4201000.00	0.01676
647850.00	4201000.00	0.01431	647900.00	4201000.00	0.01221
647700.00	4201050.00	0.02678	647750.00	4201050.00	0.02233
647800.00	4201050.00	0.01852	647850.00	4201050.00	0.01539
647900.00	4201050.00	0.01286	647100.00	4201100.00	0.01054

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8784 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647150.00	4201100.00	0.01328	647200.00	4201100.00	0.01532
647250.00	4201100.00	0.01692	647300.00	4201100.00	0.02172
647350.00	4201100.00	0.03519	647400.00	4201100.00	0.05216
647450.00	4201100.00	0.06221	647500.00	4201100.00	0.06269
647550.00	4201100.00	0.05648	647600.00	4201100.00	0.04756
647100.00	4201150.00	0.01224	647150.00	4201150.00	0.01664
647200.00	4201150.00	0.02236	647250.00	4201150.00	0.02862
647300.00	4201150.00	0.04215	647350.00	4201150.00	0.07804
647400.00	4201150.00	0.10827	647450.00	4201150.00	0.11140
647500.00	4201150.00	0.09733	647550.00	4201150.00	0.07802
647600.00	4201150.00	0.05980	647100.00	4201200.00	0.01474
647150.00	4201200.00	0.02103	647200.00	4201200.00	0.03209
647250.00	4201200.00	0.05235	647300.00	4201200.00	0.11847
647350.00	4201200.00	0.24130	647400.00	4201200.00	0.25921
647450.00	4201200.00	0.19944	647500.00	4201200.00	0.14540
647550.00	4201200.00	0.10204	647600.00	4201200.00	0.07008
647100.00	4201250.00	0.01825	647150.00	4201250.00	0.02754
647200.00	4201250.00	0.04787	647250.00	4201250.00	0.10548
647400.00	4201250.00	0.55229	647450.00	4201250.00	0.32617
647500.00	4201250.00	0.20754	647550.00	4201250.00	0.12088
647600.00	4201250.00	0.07324	647100.00	4201300.00	0.02290
647150.00	4201300.00	0.03680	647200.00	4201300.00	0.07009
647250.00	4201300.00	0.18013	647500.00	4201300.00	0.25333
647550.00	4201300.00	0.11494	647600.00	4201300.00	0.06482
647100.00	4201350.00	0.02752	647150.00	4201350.00	0.04469
647200.00	4201350.00	0.08512	647250.00	4201350.00	0.19537
647450.00	4201350.00	0.34592	647500.00	4201350.00	0.15702
647550.00	4201350.00	0.07884	647600.00	4201350.00	0.04818
647100.00	4201400.00	0.03014	647150.00	4201400.00	0.04651
647200.00	4201400.00	0.07787	647250.00	4201400.00	0.12206
647300.00	4201400.00	0.14342	647350.00	4201400.00	0.14747
647400.00	4201400.00	0.12803	647450.00	4201400.00	0.07355
647500.00	4201400.00	0.05480	647550.00	4201400.00	0.04087
647600.00	4201400.00	0.03060	647100.00	4201450.00	0.02901
647150.00	4201450.00	0.04148	647200.00	4201450.00	0.05857
647250.00	4201450.00	0.07104	647300.00	4201450.00	0.07195
647350.00	4201450.00	0.06303	647400.00	4201450.00	0.04309
647450.00	4201450.00	0.02682	647500.00	4201450.00	0.02141
647550.00	4201450.00	0.01931	647600.00	4201450.00	0.01734
647100.00	4201500.00	0.02588	647150.00	4201500.00	0.03405

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8784 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647200.00	4201500.00	0.04173	647450.00	4201500.00	0.01436
647500.00	4201500.00	0.01120	647550.00	4201500.00	0.01025
647600.00	4201500.00	0.00975	647100.00	4201550.00	0.02228
647150.00	4201550.00	0.02700	647200.00	4201550.00	0.02978
647250.00	4201550.00	0.02859	647300.00	4201550.00	0.02443
647350.00	4201550.00	0.01864	647400.00	4201550.00	0.01292
647450.00	4201550.00	0.00929	647500.00	4201550.00	0.00710
647550.00	4201550.00	0.00629	647600.00	4201550.00	0.00605

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (8784 HRS) RESULTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.58100 AT (647391.70, 4201248.70, 3.40, 3.40, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.57798 AT (647370.00, 4201244.50, 3.37, 3.37, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.55229 AT (647400.00, 4201250.00, 3.40, 3.40, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.53121 AT (647348.30, 4201240.20, 3.35, 3.35, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.52683 AT (647455.00, 4201298.40, 3.56, 3.56, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.52138 AT (647451.20, 4201318.10, 3.66, 3.66, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.48218 AT (647413.40, 4201252.90, 3.41, 3.41, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.43796 AT (647447.50, 4201337.70, 3.65, 3.65, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.43353 AT (647326.60, 4201236.00, 3.33, 3.33, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.42186 AT (647458.80, 4201278.80, 3.43, 3.43, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   7 Warning Message(s)
A Total of   199 Informational Message(s)

A Total of   8784 Hours Were Processed

A Total of   42 Calm Hours Identified

A Total of   157 Missing Hours Identified (1.79 Percent)

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
ME W186   216   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used   0.50
ME W187   216   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
MX W420   7996   METQA: Wind Speed Out-of-Range.   KURDAT =   16112904
MX W420   8002   METQA: Wind Speed Out-of-Range.   KURDAT =   16112910
MX W420   8008   METQA: Wind Speed Out-of-Range.   KURDAT =   16112916
MX W420   8014   METQA: Wind Speed Out-of-Range.   KURDAT =   16112922
MX W420   8020   METQA: Wind Speed Out-of-Range.   KURDAT =   16113004

   ****
   *** AERMOD Finishes Successfully ***
   ****

 *** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

                                          ***   MODEL SETUP OPTIONS SUMMARY   ***
 -

 **Model Is Setup For Calculation of Average CONCentration Values.

   -- DEPOSITION LOGIC --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION. DRYDPLT = F
 **Model Uses NO WET DEPLETION. WETDPLT = F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of: DPM_ANN

 **Model Calculates PERIOD Averages Only

 **This Run Includes: 1 Source(s);   1 Source Group(s); and   176 Receptor(s)

                with: 0 POINT(s), including
                           0 POINTCAP(s) and   0 POINTHOR(s)
                 and: 0 VOLUME source(s)
                 and: 1 AREA type source(s)
                 and: 0 LINE source(s)
                 and: 0 OPENPIT source(s)
                 and: 0 BUOYANT LINE source(s) with   0 line(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date: 18081

 **Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 8.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 3.5 MB of RAM.

**Input Runstream File: ContandaRocket_Const_2017_DPM_ANN.DTA
**Output Print File: ContandaRocket_Const_2017_DPM_ANN.LST

**File for Summary of Results: F:\Projects\Contanda Rocket\ContandaRocket_Const_2017_DPM_ANN.SUM

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
CONST	0	0.29389E-06	647283.3	4201227.6	3.3	5.00	6	1.00	NO	HROFDY

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	CONST ,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = CONST ; SOURCE TYPE = AREAPOLY :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.26670E+01	9	.26670E+01	10	.26670E+01	11	.26670E+01	12	.26670E+01
13	.26670E+01	14	.26670E+01	15	.26670E+01	16	.26670E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647283.3,	4201227.6,	3.3,	3.3,	0.0);	(647278.8,	4201250.9,	3.4,	3.4,	0.0);
(647274.4,	4201274.1,	3.6,	3.6,	0.0);	(647270.0,	4201297.3,	3.6,	3.6,	0.0);
(647265.6,	4201320.5,	3.6,	3.6,	0.0);	(647261.2,	4201343.7,	3.6,	3.6,	0.0);
(647283.5,	4201347.9,	3.6,	3.6,	0.0);	(647305.9,	4201352.1,	3.6,	3.6,	0.0);
(647328.2,	4201356.2,	3.6,	3.6,	0.0);	(647350.6,	4201360.4,	3.6,	3.6,	0.0);
(647372.9,	4201364.6,	3.6,	3.6,	0.0);	(647395.2,	4201368.7,	3.6,	3.6,	0.0);
(647417.6,	4201372.9,	3.6,	3.6,	0.0);	(647439.9,	4201377.1,	3.6,	3.6,	0.0);
(647443.7,	4201357.4,	3.6,	3.6,	0.0);	(647447.5,	4201337.7,	3.6,	3.6,	0.0);
(647451.2,	4201318.1,	3.7,	3.7,	0.0);	(647455.0,	4201298.4,	3.6,	3.6,	0.0);
(647458.8,	4201278.8,	3.4,	3.4,	0.0);	(647456.8,	4201261.3,	3.3,	3.3,	0.0);
(647435.1,	4201257.1,	3.4,	3.4,	0.0);	(647413.4,	4201252.9,	3.4,	3.4,	0.0);
(647391.7,	4201248.7,	3.4,	3.4,	0.0);	(647370.0,	4201244.5,	3.4,	3.4,	0.0);
(647348.3,	4201240.2,	3.3,	3.3,	0.0);	(647326.6,	4201236.0,	3.3,	3.3,	0.0);
(647304.9,	4201231.8,	3.3,	3.3,	0.0);	(647229.3,	4201468.6,	3.2,	3.2,	0.0);
(647227.5,	4201487.6,	3.1,	3.1,	0.0);	(647225.8,	4201506.5,	3.0,	3.0,	0.0);
(647224.0,	4201525.5,	2.9,	2.9,	0.0);	(647247.2,	4201527.3,	3.0,	3.0,	0.0);
(647270.3,	4201529.1,	3.2,	3.2,	0.0);	(647293.4,	4201530.9,	3.2,	3.2,	0.0);
(647316.5,	4201532.7,	3.3,	3.3,	0.0);	(647339.7,	4201534.6,	3.4,	3.4,	0.0);
(647362.8,	4201536.4,	3.4,	3.4,	0.0);	(647379.0,	4201524.1,	3.4,	3.4,	0.0);
(647395.2,	4201511.8,	3.5,	3.5,	0.0);	(647411.3,	4201499.5,	3.5,	3.5,	0.0);
(647427.5,	4201487.2,	3.5,	3.5,	0.0);	(647402.8,	4201484.9,	3.5,	3.5,	0.0);
(647378.0,	4201482.6,	3.5,	3.5,	0.0);	(647353.2,	4201480.2,	3.4,	3.4,	0.0);
(647328.4,	4201477.9,	3.4,	3.4,	0.0);	(647303.6,	4201475.6,	3.4,	3.4,	0.0);
(647278.9,	4201473.3,	3.3,	3.3,	0.0);	(647254.1,	4201470.9,	3.2,	3.2,	0.0);
(647700.0,	4201100.0,	2.6,	2.6,	0.0);	(647750.0,	4201100.0,	2.6,	2.6,	0.0);
(647800.0,	4201100.0,	2.6,	2.6,	0.0);	(647850.0,	4201100.0,	2.6,	2.6,	0.0);
(647700.0,	4201150.0,	2.6,	2.6,	0.0);	(647750.0,	4201150.0,	2.6,	2.6,	0.0);
(647850.0,	4201150.0,	2.6,	2.6,	0.0);	(647700.0,	4201200.0,	2.6,	2.6,	0.0);
(647750.0,	4201250.0,	2.6,	2.6,	0.0);	(647750.0,	4201300.0,	2.6,	2.6,	0.0);
(647800.0,	4201300.0,	2.6,	2.6,	0.0);	(647850.0,	4201300.0,	2.6,	2.6,	0.0);
(647750.0,	4201350.0,	2.6,	2.6,	0.0);	(647800.0,	4201350.0,	2.6,	2.6,	0.0);
(647750.0,	4201400.0,	2.6,	2.6,	0.0);	(647800.0,	4201400.0,	2.6,	2.6,	0.0);
(647850.0,	4200900.0,	2.6,	2.6,	0.0);	(647900.0,	4200900.0,	2.6,	2.6,	0.0);
(647750.0,	4200950.0,	2.6,	2.6,	0.0);	(647800.0,	4200950.0,	2.6,	2.6,	0.0);
(647850.0,	4200950.0,	2.6,	2.6,	0.0);	(647900.0,	4200950.0,	2.6,	2.6,	0.0);
(647750.0,	4201000.0,	2.6,	2.6,	0.0);	(647800.0,	4201000.0,	2.6,	2.6,	0.0);
(647850.0,	4201000.0,	2.6,	2.6,	0.0);	(647900.0,	4201000.0,	2.6,	2.6,	0.0);
(647700.0,	4201050.0,	2.6,	2.6,	0.0);	(647750.0,	4201050.0,	2.6,	2.6,	0.0);
(647800.0,	4201050.0,	2.6,	2.6,	0.0);	(647850.0,	4201050.0,	2.6,	2.6,	0.0);
(647900.0,	4201050.0,	2.6,	2.6,	0.0);	(647100.0,	4201100.0,	2.6,	2.6,	0.0);
(647150.0,	4201100.0,	2.6,	2.6,	0.0);	(647200.0,	4201100.0,	2.6,	2.6,	0.0);
(647250.0,	4201100.0,	2.6,	2.6,	0.0);	(647300.0,	4201100.0,	2.6,	2.6,	0.0);
(647350.0,	4201100.0,	2.6,	2.6,	0.0);	(647400.0,	4201100.0,	2.6,	2.6,	0.0);
(647450.0,	4201100.0,	2.6,	2.6,	0.0);	(647500.0,	4201100.0,	2.6,	2.6,	0.0);
(647550.0,	4201100.0,	2.6,	2.6,	0.0);	(647600.0,	4201100.0,	2.6,	2.6,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	647100.0,	4201150.0,	2.8,	2.8,	0.0);	(	647150.0,	4201150.0,	2.8,	2.8,	0.0);
(	647200.0,	4201150.0,	2.8,	2.8,	0.0);	(	647250.0,	4201150.0,	2.8,	2.8,	0.0);
(	647300.0,	4201150.0,	2.8,	2.8,	0.0);	(	647350.0,	4201150.0,	2.7,	2.7,	0.0);
(	647400.0,	4201150.0,	2.7,	2.7,	0.0);	(	647450.0,	4201150.0,	2.7,	2.7,	0.0);
(	647500.0,	4201150.0,	2.7,	2.7,	0.0);	(	647550.0,	4201150.0,	2.6,	2.6,	0.0);
(	647600.0,	4201150.0,	2.6,	2.6,	0.0);	(	647100.0,	4201200.0,	3.1,	3.1,	0.0);
(	647150.0,	4201200.0,	3.1,	3.1,	0.0);	(	647200.0,	4201200.0,	3.1,	3.1,	0.0);
(	647250.0,	4201200.0,	3.1,	3.1,	0.0);	(	647300.0,	4201200.0,	3.1,	3.1,	0.0);
(	647350.0,	4201200.0,	3.1,	3.1,	0.0);	(	647400.0,	4201200.0,	3.1,	3.1,	0.0);
(	647450.0,	4201200.0,	3.0,	3.0,	0.0);	(	647500.0,	4201200.0,	2.8,	2.8,	0.0);
(	647550.0,	4201200.0,	2.6,	2.6,	0.0);	(	647600.0,	4201200.0,	2.6,	2.6,	0.0);
(	647100.0,	4201250.0,	3.4,	3.4,	0.0);	(	647150.0,	4201250.0,	3.4,	3.4,	0.0);
(	647200.0,	4201250.0,	3.5,	3.5,	0.0);	(	647250.0,	4201250.0,	3.4,	3.4,	0.0);
(	647400.0,	4201250.0,	3.4,	3.4,	0.0);	(	647450.0,	4201250.0,	3.3,	3.3,	0.0);
(	647500.0,	4201250.0,	3.0,	3.0,	0.0);	(	647550.0,	4201250.0,	2.6,	2.6,	0.0);
(	647600.0,	4201250.0,	2.6,	2.6,	0.0);	(	647100.0,	4201300.0,	3.6,	3.6,	0.0);
(	647150.0,	4201300.0,	3.6,	3.6,	0.0);	(	647200.0,	4201300.0,	3.6,	3.6,	0.0);
(	647250.0,	4201300.0,	3.6,	3.6,	0.0);	(	647500.0,	4201300.0,	3.4,	3.4,	0.0);
(	647550.0,	4201300.0,	2.6,	2.6,	0.0);	(	647600.0,	4201300.0,	2.6,	2.6,	0.0);
(	647100.0,	4201350.0,	3.5,	3.5,	0.0);	(	647150.0,	4201350.0,	3.5,	3.5,	0.0);
(	647200.0,	4201350.0,	3.5,	3.5,	0.0);	(	647250.0,	4201350.0,	3.5,	3.5,	0.0);
(	647450.0,	4201350.0,	3.6,	3.6,	0.0);	(	647500.0,	4201350.0,	3.6,	3.6,	0.0);
(	647550.0,	4201350.0,	2.8,	2.8,	0.0);	(	647600.0,	4201350.0,	2.6,	2.6,	0.0);
(	647100.0,	4201400.0,	3.4,	3.4,	0.0);	(	647150.0,	4201400.0,	3.4,	3.4,	0.0);
(	647200.0,	4201400.0,	3.4,	3.4,	0.0);	(	647250.0,	4201400.0,	3.4,	3.4,	0.0);
(	647300.0,	4201400.0,	3.5,	3.5,	0.0);	(	647350.0,	4201400.0,	3.5,	3.5,	0.0);
(	647400.0,	4201400.0,	3.6,	3.6,	0.0);	(	647450.0,	4201400.0,	3.6,	3.6,	0.0);
(	647500.0,	4201400.0,	3.6,	3.6,	0.0);	(	647550.0,	4201400.0,	3.5,	3.5,	0.0);
(	647600.0,	4201400.0,	2.6,	2.6,	0.0);	(	647100.0,	4201450.0,	3.2,	3.2,	0.0);
(	647150.0,	4201450.0,	3.2,	3.2,	0.0);	(	647200.0,	4201450.0,	3.2,	3.2,	0.0);
(	647250.0,	4201450.0,	3.3,	3.3,	0.0);	(	647300.0,	4201450.0,	3.4,	3.4,	0.0);
(	647350.0,	4201450.0,	3.5,	3.5,	0.0);	(	647400.0,	4201450.0,	3.5,	3.5,	0.0);
(	647450.0,	4201450.0,	3.5,	3.5,	0.0);	(	647500.0,	4201450.0,	3.6,	3.6,	0.0);
(	647550.0,	4201450.0,	3.6,	3.6,	0.0);	(	647600.0,	4201450.0,	3.6,	3.6,	0.0);
(	647100.0,	4201500.0,	2.9,	2.9,	0.0);	(	647150.0,	4201500.0,	3.0,	3.0,	0.0);
(	647200.0,	4201500.0,	3.0,	3.0,	0.0);	(	647450.0,	4201500.0,	3.5,	3.5,	0.0);
(	647500.0,	4201500.0,	3.5,	3.5,	0.0);	(	647550.0,	4201500.0,	3.6,	3.6,	0.0);
(	647600.0,	4201500.0,	3.6,	3.6,	0.0);	(	647100.0,	4201550.0,	2.8,	2.8,	0.0);
(	647150.0,	4201550.0,	2.9,	2.9,	0.0);	(	647200.0,	4201550.0,	2.9,	2.9,	0.0);
(	647250.0,	4201550.0,	3.0,	3.0,	0.0);	(	647300.0,	4201550.0,	3.2,	3.2,	0.0);
(	647350.0,	4201550.0,	3.4,	3.4,	0.0);	(	647400.0,	4201550.0,	3.4,	3.4,	0.0);
(	647450.0,	4201550.0,	3.5,	3.5,	0.0);	(	647500.0,	4201550.0,	3.5,	3.5,	0.0);
(	647550.0,	4201550.0,	3.5,	3.5,	0.0);	(	647600.0,	4201550.0,	3.5,	3.5,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54,   3.09,   5.14,   8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: 23237_2017.SFC Met Version: 18081
Profile file: 23237_2017.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 23237 Upper air station no.: 23230
Name: UNKNOWN Name: UNKNOWN
Year: 2017 Year: 2017

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
17	01	01	1	01	-21.5	0.209	-9.000	-9.000	-999.	230.	48.2	0.02	0.81	1.00	3.36	111.	10.0	275.9	2.0
17	01	01	1	02	-20.7	0.201	-9.000	-9.000	-999.	216.	44.3	0.05	0.81	1.00	2.86	158.	10.0	274.9	2.0
17	01	01	1	03	-31.3	0.306	-9.000	-9.000	-999.	406.	103.0	0.05	0.81	1.00	4.28	154.	10.0	277.0	2.0
17	01	01	1	04	-36.5	0.356	-9.000	-9.000	-999.	511.	139.7	0.06	0.81	1.00	4.76	142.	10.0	277.0	2.0
17	01	01	1	05	-39.1	0.382	-9.000	-9.000	-999.	567.	160.7	0.06	0.81	1.00	5.09	137.	10.0	277.0	2.0
17	01	01	1	06	-38.5	0.374	-9.000	-9.000	-999.	550.	154.2	0.06	0.81	1.00	4.99	136.	10.0	275.9	2.0
17	01	01	1	07	-33.0	0.321	-9.000	-9.000	-999.	439.	113.6	0.06	0.81	1.00	4.31	146.	10.0	275.9	2.0
17	01	01	1	08	-16.7	0.174	-9.000	-9.000	-999.	189.	33.2	0.06	0.81	0.73	2.40	138.	10.0	275.9	2.0
17	01	01	1	09	-15.0	0.341	-9.000	-9.000	-999.	479.	239.5	0.06	0.81	0.39	4.49	129.	10.0	277.5	2.0
17	01	01	1	10	45.9	0.512	1.006	0.018	803.	879.	-264.5	0.06	0.81	0.27	6.41	148.	10.0	280.4	2.0
17	01	01	1	11	72.4	0.480	1.271	0.020	1025.	800.	-138.1	0.06	0.81	0.23	5.90	143.	10.0	282.5	2.0
17	01	01	1	12	92.0	0.348	1.403	0.019	1086.	506.	-41.4	0.05	0.81	0.22	4.20	164.	10.0	283.1	2.0
17	01	01	1	13	94.2	0.263	1.417	0.019	1090.	328.	-17.4	0.05	0.81	0.21	2.96	173.	10.0	284.2	2.0
17	01	01	1	14	81.9	0.276	1.354	0.018	1094.	348.	-23.2	0.05	0.81	0.22	3.19	178.	10.0	284.2	2.0
17	01	01	1	15	56.9	0.380	1.200	0.018	1097.	561.	-86.6	0.04	0.81	0.26	4.92	207.	10.0	285.4	2.0
17	01	01	1	16	13.3	0.373	0.740	0.018	1097.	548.	-352.6	0.04	0.81	0.35	5.04	214.	10.0	284.2	2.0
17	01	01	1	17	-23.7	0.255	-9.000	-9.000	-999.	317.	71.4	0.04	0.81	0.60	3.69	195.	10.0	283.1	2.0
17	01	01	1	18	-21.4	0.212	-9.000	-9.000	-999.	235.	49.5	0.04	0.81	1.00	3.10	230.	10.0	280.9	2.0
17	01	01	1	19	-26.8	0.266	-9.000	-9.000	-999.	329.	77.8	0.04	0.81	1.00	3.85	221.	10.0	280.9	2.0
17	01	01	1	20	-25.5	0.252	-9.000	-9.000	-999.	304.	70.0	0.04	0.81	1.00	3.66	211.	10.0	279.9	2.0
17	01	01	1	21	-24.3	0.239	-9.000	-9.000	-999.	280.	62.6	0.04	0.81	1.00	3.47	228.	10.0	278.1	2.0
17	01	01	1	22	-22.6	0.222	-9.000	-9.000	-999.	251.	54.2	0.04	0.81	1.00	3.24	200.	10.0	279.2	2.0
17	01	01	1	23	-21.7	0.214	-9.000	-9.000	-999.	238.	50.5	0.04	0.81	1.00	3.13	211.	10.0	280.4	2.0
17	01	01	1	24	-18.5	0.181	-9.000	-9.000	-999.	185.	36.0	0.04	0.81	1.00	2.67	190.	10.0	278.1	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
17	01	01	01	10.0	1	111.	3.36	276.0	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647283.30	4201227.60	0.12206	647278.80	4201250.90	0.15153
647274.40	4201274.10	0.19009	647270.00	4201297.30	0.20700
647265.60	4201320.50	0.20143	647261.20	4201343.70	0.19124
647283.50	4201347.90	0.22502	647305.90	4201352.10	0.25471
647328.20	4201356.20	0.26673	647350.60	4201360.40	0.26593
647372.90	4201364.60	0.25778	647395.20	4201368.70	0.24029
647417.60	4201372.90	0.20413	647439.90	4201377.10	0.15623
647443.70	4201357.40	0.28688	647447.50	4201337.70	0.43562
647451.20	4201318.10	0.51507	647455.00	4201298.40	0.52223
647458.80	4201278.80	0.41630	647456.80	4201261.30	0.34441
647435.10	4201257.10	0.39528	647413.40	4201252.90	0.48262
647391.70	4201248.70	0.58637	647370.00	4201244.50	0.58356
647348.30	4201240.20	0.53365	647326.60	4201236.00	0.43227
647304.90	4201231.80	0.26353	647229.30	4201468.60	0.05125
647227.50	4201487.60	0.04364	647225.80	4201506.50	0.03746
647224.00	4201525.50	0.03234	647247.20	4201527.30	0.03222
647270.30	4201529.10	0.03162	647293.40	4201530.90	0.03043
647316.50	4201532.70	0.02853	647339.70	4201534.60	0.02600
647362.80	4201536.40	0.02325	647379.00	4201524.10	0.02420
647395.20	4201511.80	0.02511	647411.30	4201499.50	0.02604
647427.50	4201487.20	0.02704	647402.80	4201484.90	0.03195
647378.00	4201482.60	0.03809	647353.20	4201480.20	0.04436
647328.40	4201477.90	0.04930	647303.60	4201475.60	0.05243
647278.90	4201473.30	0.05363	647254.10	4201470.90	0.05318
647700.00	4201100.00	0.03308	647750.00	4201100.00	0.02632
647800.00	4201100.00	0.02100	647850.00	4201100.00	0.01686
647700.00	4201150.00	0.03546	647750.00	4201150.00	0.02685
647850.00	4201150.00	0.01610	647700.00	4201200.00	0.03483
647750.00	4201250.00	0.02194	647750.00	4201300.00	0.01791
647800.00	4201300.00	0.01354	647850.00	4201300.00	0.01059
647750.00	4201350.00	0.01406	647800.00	4201350.00	0.01100
647750.00	4201400.00	0.01054	647800.00	4201400.00	0.00854
647850.00	4200900.00	0.01282	647900.00	4200900.00	0.01151
647750.00	4200950.00	0.01831	647800.00	4200950.00	0.01629
647850.00	4200950.00	0.01436	647900.00	4200950.00	0.01261
647750.00	4201000.00	0.02133	647800.00	4201000.00	0.01837
647850.00	4201000.00	0.01574	647900.00	4201000.00	0.01347
647700.00	4201050.00	0.02901	647750.00	4201050.00	0.02421
647800.00	4201050.00	0.02010	647850.00	4201050.00	0.01668
647900.00	4201050.00	0.01387	647100.00	4201100.00	0.00876

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647150.00	4201100.00	0.01119	647200.00	4201100.00	0.01445
647250.00	4201100.00	0.01945	647300.00	4201100.00	0.02591
647350.00	4201100.00	0.03654	647400.00	4201100.00	0.05176
647450.00	4201100.00	0.06268	647500.00	4201100.00	0.06445
647550.00	4201100.00	0.05939	647600.00	4201100.00	0.05076
647100.00	4201150.00	0.01069	647150.00	4201150.00	0.01408
647200.00	4201150.00	0.01962	647250.00	4201150.00	0.02944
647300.00	4201150.00	0.04631	647350.00	4201150.00	0.08003
647400.00	4201150.00	0.10967	647450.00	4201150.00	0.11368
647500.00	4201150.00	0.10035	647550.00	4201150.00	0.08180
647600.00	4201150.00	0.06298	647100.00	4201200.00	0.01315
647150.00	4201200.00	0.01809	647200.00	4201200.00	0.02727
647250.00	4201200.00	0.04832	647300.00	4201200.00	0.11931
647350.00	4201200.00	0.24539	647400.00	4201200.00	0.26396
647450.00	4201200.00	0.20304	647500.00	4201200.00	0.14899
647550.00	4201200.00	0.10515	647600.00	4201200.00	0.07180
647100.00	4201250.00	0.01705	647150.00	4201250.00	0.02474
647200.00	4201250.00	0.04057	647250.00	4201250.00	0.08686
647400.00	4201250.00	0.55528	647450.00	4201250.00	0.32520
647500.00	4201250.00	0.20793	647550.00	4201250.00	0.12033
647600.00	4201250.00	0.07175	647100.00	4201300.00	0.02251
647150.00	4201300.00	0.03384	647200.00	4201300.00	0.05964
647250.00	4201300.00	0.14632	647500.00	4201300.00	0.24587
647550.00	4201300.00	0.10772	647600.00	4201300.00	0.05869
647100.00	4201350.00	0.02687	647150.00	4201350.00	0.04117
647200.00	4201350.00	0.07412	647250.00	4201350.00	0.16714
647450.00	4201350.00	0.34552	647500.00	4201350.00	0.14351
647550.00	4201350.00	0.06681	647600.00	4201350.00	0.03926
647100.00	4201400.00	0.02671	647150.00	4201400.00	0.04045
647200.00	4201400.00	0.06758	647250.00	4201400.00	0.10898
647300.00	4201400.00	0.13594	647350.00	4201400.00	0.14786
647400.00	4201400.00	0.13713	647450.00	4201400.00	0.08534
647500.00	4201400.00	0.05673	647550.00	4201400.00	0.03677
647600.00	4201400.00	0.02473	647100.00	4201450.00	0.02499
647150.00	4201450.00	0.03605	647200.00	4201450.00	0.05156
647250.00	4201450.00	0.06448	647300.00	4201450.00	0.07024
647350.00	4201450.00	0.06690	647400.00	4201450.00	0.05197
647450.00	4201450.00	0.03674	647500.00	4201450.00	0.02869
647550.00	4201450.00	0.02306	647600.00	4201450.00	0.01766
647100.00	4201500.00	0.02263	647150.00	4201500.00	0.03009

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (8760 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): CONST ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647200.00	4201500.00	0.03715	647450.00	4201500.00	0.02117
647500.00	4201500.00	0.01708	647550.00	4201500.00	0.01485
647600.00	4201500.00	0.01303	647100.00	4201550.00	0.01985
647150.00	4201550.00	0.02413	647200.00	4201550.00	0.02668
647250.00	4201550.00	0.02681	647300.00	4201550.00	0.02533
647350.00	4201550.00	0.02172	647400.00	4201550.00	0.01768
647450.00	4201550.00	0.01427	647500.00	4201550.00	0.01158
647550.00	4201550.00	0.01003	647600.00	4201550.00	0.00917

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (8760 HRS) RESULTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.58637 AT (647391.70, 4201248.70, 3.40, 3.40, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.58356 AT (647370.00, 4201244.50, 3.37, 3.37, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.55528 AT (647400.00, 4201250.00, 3.40, 3.40, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.53365 AT (647348.30, 4201240.20, 3.35, 3.35, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.52223 AT (647455.00, 4201298.40, 3.56, 3.56, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.51507 AT (647451.20, 4201318.10, 3.66, 3.66, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.48262 AT (647413.40, 4201252.90, 3.41, 3.41, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.43562 AT (647447.50, 4201337.70, 3.65, 3.65, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.43227 AT (647326.60, 4201236.00, 3.33, 3.33, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.41630 AT (647458.80, 4201278.80, 3.43, 3.43, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   6 Warning Message(s)
A Total of   228 Informational Message(s)

A Total of   8760 Hours Were Processed

A Total of   36 Calm Hours Identified

A Total of   192 Missing Hours Identified (2.19 Percent)

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
ME W186   216   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used   0.50
ME W187   216   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
MX W420   5704   METQA: Wind Speed Out-of-Range.   KURDAT =   17082616
MX W420   5728   METQA: Wind Speed Out-of-Range.   KURDAT =   17082716
MX W420   5734   METQA: Wind Speed Out-of-Range.   KURDAT =   17082722
MX W420   5740   METQA: Wind Speed Out-of-Range.   KURDAT =   17082804

   ****
   *** AERMOD Finishes Successfully ***
   ****

Appendix D2. AERMOD Output File for Operation

- **Fine Grid Receptors; 5 Years Meteorological Data**

 *** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

                                          ***   MODEL SETUP OPTIONS SUMMARY   ***
 -

 **Model Is Setup For Calculation of Average CONCentration Values.

   -- DEPOSITION LOGIC --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION. DRYDPLT = F
 **Model Uses NO WET DEPLETION. WETDPLT = F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        ADJ_U*   - Use ADJ_U* option for SBL in AERMET
        CCVR_Sub - Meteorological data includes CCVR substitutions
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of: DPM_ANN

 **Model Calculates PERIOD Averages Only

 **This Run Includes: 132 Source(s);   8 Source Group(s); and   144 Receptor(s)
                with: 9 POINT(s), including
                           0 POINTCAP(s) and   0 POINTHOR(s)
                 and: 1 VOLUME source(s)
                 and: 0 AREA type source(s)
                 and: 122 LINE source(s)
                 and: 0 OPENPIT source(s)
                 and: 0 BUOYANT LINE source(s) with   0 line(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date: 18081

 **Output Options Selected:
         Model Outputs Tables of PERIOD Averages by Receptor
         Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
         Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

```
 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     8.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.8 MB of RAM.

 **Input Runstream File:  ContandaRocket_Ops_Fine_5yrs_DPM_ANN_01.DTA through ..._20.DTA
 **Output Print File:     ContandaRocket_Ops_Fine_5yrs_DPM_ANN_01.LST through ..._20.LST

Recombined as C:\Aermod\Workspace\313904\Recombiner\ContandaRocket_Ops_Fine_5yrs_DPM_ANN.LST

 **File for Summary of Results:   ContandaRocket_Ops_Fine_5yrs_DPM_ANN_01.SUM through ..._20.SUM

Recombined as C:\Aermod\Workspace\313904\Recombiner\ContandaRocket_Ops_Fine_5yrs_DPM_ANN.SUM
```

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BLDG EXISTS	URBAN SOURCE	CAP/ HOR	EMIS RATE SCALAR VARY BY
OGV_BRTH	0	0.45330E-02	647048.9	4201694.4	3.0	43.00	618.00	16.00	0.50	NO	NO	NO	
TRK_IDL1	0	0.30770E-05	647289.4	4201307.4	3.6	3.84	366.00	0.00	0.10	YES	NO	NO	
TRK_IDL2	0	0.30770E-05	647295.8	4201308.7	3.6	3.84	366.00	0.00	0.10	YES	NO	NO	
TRK_IDL3	0	0.30770E-05	647302.2	4201310.0	3.6	3.84	366.00	0.00	0.10	YES	NO	NO	
TRK_IDL4	0	0.30770E-05	647308.6	4201311.3	3.6	3.84	366.00	0.00	0.10	YES	NO	NO	
TRK_IDL5	0	0.30770E-05	647293.8	4201285.7	3.6	3.84	366.00	0.00	0.10	YES	NO	NO	
TRK_IDL6	0	0.30770E-05	647300.2	4201287.1	3.6	3.84	366.00	0.00	0.10	YES	NO	NO	
TRK_IDL7	0	0.30770E-05	647306.6	4201288.4	3.6	3.84	366.00	0.00	0.10	YES	NO	NO	
TRK_IDL8	0	0.30770E-05	647313.0	4201289.7	3.6	3.84	366.00	0.00	0.10	YES	NO	NO	

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
TUG_BRTH	0	0.19240E-03	647048.9	4201694.4	3.0	15.20	4.65	3.54	NO	

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** LINE SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	FIRST COORD X (METERS)	FIRST COORD Y (METERS)	SECOND COORD X (METERS)	SECOND COORD Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF LINE (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
LHD003	0	0.56174E-08	649017.1	4200737.5	648932.2	4200718.2	3.5	5.58	9.14	2.60	NO	HROFDY
LHD004	0	0.56173E-08	648932.2	4200718.2	648861.9	4200704.3	3.5	5.58	9.14	2.60	NO	HROFDY
LHD005	0	0.56165E-08	648861.9	4200704.3	648113.7	4200537.3	3.4	5.58	9.14	2.60	NO	HROFDY
LHD006	0	0.56176E-08	648113.7	4200537.3	648047.3	4200525.5	2.6	5.58	9.14	2.60	NO	HROFDY
LHD007	0	0.56162E-08	648047.3	4200525.5	647977.1	4200518.8	2.6	5.58	9.14	2.60	NO	HROFDY
LHD008	0	0.56167E-08	647977.1	4200518.8	647901.6	4200506.1	2.6	5.58	9.14	2.60	NO	HROFDY
LHD009	0	0.56167E-08	647901.6	4200506.1	647810.2	4200496.1	2.6	5.58	9.14	2.60	NO	HROFDY
LHD010	0	0.56174E-08	647810.2	4200496.1	647747.8	4200518.7	2.8	5.58	9.14	2.60	NO	HROFDY
LHD011	0	0.56177E-08	647747.8	4200518.7	647710.5	4200559.8	2.9	5.58	9.14	2.60	NO	HROFDY
LHD012	0	0.56173E-08	647710.5	4200559.8	647692.6	4200602.8	3.0	5.58	9.14	2.60	NO	HROFDY
LHD013	0	0.56173E-08	647692.6	4200602.8	647671.0	4200673.0	2.9	5.58	9.14	2.60	NO	HROFDY
LHD014	0	0.56163E-08	647671.0	4200673.0	647527.1	4201316.7	2.8	5.58	9.14	2.60	NO	HROFDY
LHD015	0	0.56168E-08	647527.1	4201316.7	647509.5	4201353.5	3.4	5.58	9.14	2.60	NO	HROFDY
LHD016	0	0.56170E-08	647509.5	4201353.5	647485.5	4201382.6	3.6	5.58	9.14	2.60	NO	HROFDY
SWD001	0	0.23675E-06	647485.5	4201382.6	647442.5	4201413.6	3.6	4.68	9.14	2.18	NO	HROFDY
SWD002	0	0.23681E-06	647442.5	4201413.6	647387.5	4201431.8	3.5	4.68	9.14	2.18	NO	HROFDY
SWD003	0	0.23689E-06	647387.5	4201431.8	647276.3	4201438.0	3.5	4.68	9.14	2.18	NO	HROFDY
SWD004	0	0.23690E-06	647276.3	4201438.0	647186.9	4201429.0	3.4	4.68	9.14	2.18	NO	HROFDY
SWD005	0	0.23679E-06	647186.9	4201429.0	647115.8	4201417.7	3.3	4.68	9.14	2.18	NO	HROFDY
SWD006	0	0.23689E-06	647115.8	4201417.7	647009.3	4201405.1	3.3	4.68	9.14	2.18	NO	HROFDY
SWD007	0	0.23681E-06	647009.3	4201405.1	646910.8	4201396.5	3.4	4.68	9.14	2.18	NO	HROFDY
SWD008	0	0.23688E-06	646910.8	4201396.5	646838.0	4201380.5	3.6	4.68	9.14	2.18	NO	HROFDY
SWD009	0	0.23678E-06	646838.0	4201380.5	646787.2	4201341.1	3.6	4.68	9.14	2.18	NO	HROFDY
SWD010	0	0.23689E-06	646787.2	4201341.1	646761.5	4201290.3	3.5	4.68	9.14	2.18	NO	HROFDY
SWD011	0	0.23681E-06	646761.5	4201290.3	646756.7	4201231.2	3.2	4.68	9.14	2.18	NO	HROFDY
SWD012	0	0.23681E-06	646756.7	4201231.2	646763.9	4201147.5	2.7	4.68	9.14	2.18	NO	HROFDY
SWD013	0	0.23687E-06	646763.9	4201147.5	646756.7	4201092.6	2.6	4.68	9.14	2.18	NO	HROFDY
SWD014	0	0.23681E-06	646756.7	4201092.6	646725.7	4201033.8	2.6	4.68	9.14	2.18	NO	HROFDY
SWD015	0	0.23688E-06	646725.7	4201033.8	646673.7	4200997.6	2.6	4.68	9.14	2.18	NO	HROFDY
SWD016	0	0.23692E-06	646673.7	4200997.6	646615.1	4200984.5	2.6	4.68	9.14	2.18	NO	HROFDY
SWD017	0	0.23684E-06	646615.1	4200984.5	646547.0	4200980.3	2.8	4.68	9.14	2.18	NO	HROFDY
SWD018	0	0.23687E-06	646547.0	4200980.3	646486.1	4200987.5	2.9	4.68	9.14	2.18	NO	HROFDY
SWD019	0	0.23681E-06	646486.1	4200987.5	646433.5	4201012.0	2.9	4.68	9.14	2.18	NO	HROFDY
SWD020	0	0.23691E-06	646433.5	4201012.0	646395.9	4201053.8	2.9	4.68	9.14	2.18	NO	HROFDY
SWD021	0	0.23676E-06	646395.9	4201053.8	646377.3	4201102.2	2.8	4.68	9.14	2.18	NO	HROFDY
SWD022	0	0.23680E-06	646377.3	4201102.2	646374.9	4201151.8	2.6	4.68	9.14	2.18	NO	HROFDY
SWD023	0	0.23688E-06	646374.9	4201151.8	646389.9	4201203.2	2.6	4.68	9.14	2.18	NO	HROFDY
SWD024	0	0.23683E-06	646389.9	4201203.2	646441.9	4201288.6	2.6	4.68	9.14	2.18	NO	HROFDY
SWD025	0	0.23694E-06	646441.9	4201288.6	646472.9	4201329.2	2.6	4.68	9.14	2.18	NO	HROFDY
SWD026	0	0.23682E-06	646472.9	4201329.2	646515.4	4201356.5	3.5	4.68	9.14	2.18	NO	HROFDY

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** LINE SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	FIRST COORD X (METERS)	FIRST COORD Y (METERS)	SECOND COORD X (METERS)	SECOND COORD Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF LINE (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
SWD027	0	0.23680E-06	646515.4	4201356.5	646574.5	4201371.4	3.6	4.68	9.14	2.18	NO	HROFDY
SWD028	0	0.23684E-06	646574.5	4201371.4	646839.8	4201393.0	3.6	4.68	9.14	2.18	NO	HROFDY
SWD029	0	0.23685E-06	646839.8	4201393.0	647187.0	4201429.2	3.6	4.68	9.14	2.18	NO	HROFDY
SWD030	0	0.23680E-06	647187.0	4201429.2	647276.3	4201438.1	3.3	4.68	9.14	2.18	NO	HROFDY
SWD031	0	0.23680E-06	647276.3	4201438.1	647388.8	4201461.8	3.4	4.68	9.14	2.18	NO	HROFDY
SWD032	0	0.23680E-06	647388.8	4201461.8	647508.4	4201476.9	3.5	4.68	9.14	2.18	NO	HROFDY
SWD033	0	0.23685E-06	647508.4	4201476.9	647468.0	4201476.2	3.6	4.68	9.14	2.18	NO	HROFDY
SWD034	0	0.23686E-06	647468.0	4201476.2	647436.2	4201488.6	3.5	4.68	9.14	2.18	NO	HROFDY
SWD035	0	0.23685E-06	647436.2	4201488.6	647145.4	4201707.1	3.5	4.68	9.14	2.18	NO	HROFDY
TK001	0	0.12041E-08	647277.3	4201229.4	647263.9	4201301.2	3.3	1.83	9.75	1.42	NO	
TK002	0	0.12039E-08	647263.9	4201301.2	647268.2	4201316.0	3.6	1.83	9.75	1.42	NO	
TK003	0	0.12043E-08	647268.2	4201316.0	647282.6	4201322.5	3.6	1.83	9.75	1.42	NO	
TK004	0	0.56667E-09	647282.6	4201322.5	647298.7	4201313.5	3.6	1.83	20.73	1.42	NO	
TK005	0	0.56664E-09	647298.7	4201313.5	647306.8	4201274.0	3.6	1.83	20.73	1.42	NO	
TK006	0	0.56666E-09	647306.8	4201274.0	647304.5	4201247.0	3.6	1.83	20.73	1.42	NO	
TK007	0	0.12040E-08	647304.5	4201247.0	647279.7	4201229.6	3.4	1.83	9.75	1.42	NO	
TK008	0	0.17516E-08	647279.7	4201229.6	647319.1	4201030.1	3.3	1.83	13.41	1.42	NO	
TK009	0	0.17517E-08	647319.1	4201030.1	646249.8	4200930.8	2.6	1.83	13.41	1.42	NO	
TK010	0	0.17509E-08	646249.8	4200930.8	646191.3	4200939.9	2.6	1.83	13.41	1.42	NO	
TK011	0	0.17515E-08	646191.3	4200939.9	646171.1	4200934.7	2.6	1.83	13.41	1.42	NO	
TK012	0	0.17515E-08	646171.1	4200934.7	646165.3	4200918.5	2.6	1.83	13.41	1.42	NO	
TK013	0	0.17516E-08	646165.3	4200918.5	646168.5	4200897.0	2.6	1.83	13.41	1.42	NO	
TK014	0	0.17523E-08	646168.5	4200897.0	646465.0	4200564.4	2.6	1.83	13.41	1.42	NO	
TK015	0	0.17514E-08	646465.0	4200564.4	646706.6	4200297.3	4.2	1.83	13.41	1.42	NO	
TK016	0	0.17512E-08	646706.6	4200297.3	646768.4	4200249.8	4.6	1.83	13.41	1.42	NO	
TK017	0	0.17516E-08	646768.4	4200249.8	646852.0	4200206.5	4.6	1.83	13.41	1.42	NO	
TK018	0	0.17515E-08	646852.0	4200206.5	646916.2	4200199.3	4.5	1.83	13.41	1.42	NO	
TK019	0	0.17510E-08	646916.2	4200199.3	647378.0	4200214.6	4.5	1.83	13.41	1.42	NO	
TK020	0	0.87576E-09	647363.4	4200214.2	647377.0	4200230.4	3.8	1.83	13.41	1.42	NO	
TK021	0	0.87560E-09	647377.0	4200230.4	647386.4	4200254.2	3.7	1.83	13.41	1.42	NO	
TK022	0	0.87565E-09	647386.4	4200254.2	647398.3	4200289.1	3.6	1.83	13.41	1.42	NO	
TK023	0	0.87573E-09	647398.3	4200289.1	647428.1	4200319.7	3.5	1.83	13.41	1.42	NO	
TK024	0	0.87570E-09	647428.1	4200319.7	647473.2	4200335.1	3.4	1.83	13.41	1.42	NO	
TK025	0	0.87546E-09	647473.2	4200335.1	647600.7	4200360.9	3.3	1.83	13.41	1.42	NO	
TK026	0	0.87579E-09	647600.7	4200360.9	647663.4	4200381.3	3.1	1.83	13.41	1.42	NO	
TK027	0	0.87586E-09	647663.4	4200381.3	647740.4	4200419.0	3.0	7.92	13.41	1.42	NO	
TK028	0	0.87548E-09	647740.4	4200419.0	647831.8	4200483.1	2.9	7.92	13.41	1.42	NO	
TK029	0	0.87580E-09	647831.8	4200483.1	648326.2	4200882.3	2.8	7.92	13.41	1.42	NO	
TK030	0	0.87585E-09	648326.2	4200882.3	648528.5	4201047.5	2.6	1.83	13.41	1.42	NO	
TK031	0	0.87585E-09	648528.5	4201047.5	648766.7	4201236.3	2.9	1.83	13.41	1.42	NO	

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** LINE SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	FIRST COORD X (METERS)	FIRST COORD Y (METERS)	SECOND COORD X (METERS)	SECOND COORD Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF LINE (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
TK032	0	0.87582E-09	648766.7	4201236.3	648887.5	4201316.6	3.3	1.83	13.41	1.42	NO	
TK033	0	0.87584E-09	648887.5	4201316.6	648987.4	4201364.4	3.3	1.83	13.41	1.42	NO	
TK039	0	0.87549E-09	647392.6	4200215.1	647397.0	4200229.0	3.7	1.83	13.41	1.42	NO	
TK040	0	0.87565E-09	647397.0	4200229.0	647402.2	4200261.8	3.7	1.83	13.41	1.42	NO	
TK041	0	0.87582E-09	647402.2	4200261.8	647412.5	4200286.7	3.6	1.83	13.41	1.42	NO	
TK042	0	0.87574E-09	647412.5	4200286.7	647440.0	4200310.6	3.5	1.83	13.41	1.42	NO	
TK043	0	0.87579E-09	647440.0	4200310.6	647486.8	4200324.2	3.4	1.83	13.41	1.42	NO	
TK044	0	0.87564E-09	647486.8	4200324.2	647616.3	4200351.8	3.3	1.83	13.41	1.42	NO	
TK045	0	0.87571E-09	647616.3	4200351.8	647669.3	4200366.6	3.1	1.83	13.41	1.42	NO	
TK046	0	0.87581E-09	647669.3	4200366.6	647751.0	4200401.8	3.0	7.92	13.41	1.42	NO	
TK047	0	0.87576E-09	647751.0	4200401.8	647810.4	4200443.3	3.0	7.92	13.41	1.42	NO	
TK048	0	0.87565E-09	647810.4	4200443.3	648065.2	4200644.1	2.8	7.92	13.41	1.42	NO	
TK049	0	0.87586E-09	648065.2	4200644.1	648232.3	4200775.4	2.6	7.92	13.41	1.42	NO	
TK050	0	0.87579E-09	648232.3	4200775.4	648333.0	4200850.3	2.6	7.92	13.41	1.42	NO	
TK051	0	0.87597E-09	648333.0	4200850.3	648460.0	4200945.0	2.6	1.83	13.41	1.42	NO	
TK052	0	0.87569E-09	648460.0	4200945.0	648802.0	4201224.7	2.6	1.83	13.41	1.42	NO	
TK053	0	0.87588E-09	648802.0	4201224.7	648900.9	4201292.7	3.3	1.83	13.41	1.42	NO	
TK054	0	0.87600E-09	648900.9	4201292.7	648997.9	4201341.9	3.3	1.83	13.41	1.42	NO	
OGV04	0	0.67648E-09	641912.6	4204793.1	642784.3	4203888.2	0.0	50.00	38.00	23.26	NO	
OGV05	0	0.67663E-09	642784.3	4203888.2	643237.3	4203386.0	2.6	50.00	38.00	23.26	NO	
OGV06	0	0.67660E-09	643237.3	4203386.0	643719.0	4202914.0	3.6	50.00	38.00	23.26	NO	
OGV07	0	0.26779E-08	643719.0	4202914.0	644069.9	4202555.2	4.5	50.00	38.00	23.26	NO	
OGV08	0	0.26772E-08	644069.9	4202555.2	644354.2	4202409.7	4.7	50.00	38.00	23.26	NO	
OGV09	0	0.26785E-08	644354.2	4202409.7	645620.3	4201900.6	4.6	50.00	38.00	23.26	NO	
OGV10	0	0.26779E-08	645620.3	4201900.6	646058.1	4201796.1	4.6	50.00	38.00	23.26	NO	
OGV11	0	0.26773E-08	646058.1	4201796.1	646310.1	4201786.1	5.6	50.00	38.00	23.26	NO	
OGV12	0	0.26776E-08	646310.1	4201786.1	646865.2	4201833.2	5.0	50.00	38.00	23.26	NO	
OGV13	0	0.26781E-08	646865.2	4201833.2	647026.5	4201673.2	4.8	50.00	38.00	23.26	NO	
OGV14	0	0.26772E-08	647026.5	4201673.2	647048.9	4201694.4	2.9	50.00	38.00	23.26	NO	
OGV15	0	0.26776E-08	646865.2	4201833.2	647566.0	4201906.1	4.8	50.00	38.00	23.26	NO	
OGV16	0	0.26773E-08	647566.0	4201906.1	647823.9	4201868.3	4.6	50.00	38.00	23.26	NO	
TUG01	0	0.58727E-08	643719.0	4202914.0	644069.9	4202555.2	4.5	15.20	38.00	3.54	NO	
TUG02	0	0.58736E-08	644069.9	4202555.2	644354.2	4202409.7	4.7	15.20	38.00	3.54	NO	
TUG03	0	0.58738E-08	644354.2	4202409.7	645620.3	4201900.6	4.6	15.20	38.00	3.54	NO	
TUG04	0	0.58762E-08	645620.3	4201900.6	646058.1	4201796.1	4.6	15.20	38.00	3.54	NO	
TUG05	0	0.58731E-08	646058.1	4201796.1	646310.1	4201786.1	5.6	15.20	38.00	3.54	NO	
TUG06	0	0.58720E-08	646310.1	4201786.1	646865.2	4201833.2	5.0	15.20	38.00	3.54	NO	
TUG07	0	0.58739E-08	646865.2	4201833.2	647026.5	4201673.2	4.8	15.20	38.00	3.54	NO	
TUG08	0	0.58725E-08	647026.5	4201673.2	647128.7	4201585.5	2.9	15.20	38.00	3.54	NO	
TUG09	0	0.58752E-08	646865.2	4201833.2	647566.0	4201906.1	4.8	15.20	38.00	3.54	NO	

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** LINE SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	FIRST COORD X (METERS)	FIRST COORD Y (METERS)	SECOND COORD X (METERS)	SECOND COORD Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	WIDTH OF LINE (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
TUG10	0	0.58734E-08	647566.0	4201906.1	647823.9	4201868.3	4.6	15.20	38.00	3.54	NO	
TUG11	0	0.58737E-08	647823.9	4201868.3	647926.1	4201879.2	4.4	15.20	38.00	3.54	NO	

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 , TRK_IDL5 , TRK_IDL6 , TRK_IDL7 ,
	TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 , LHD006 , LHD007 , LHD008 ,
	LHD009 , LHD010 , LHD011 , LHD012 , LHD013 , LHD014 , LHD015 , LHD016 ,
	SWD001 , SWD002 , SWD003 , SWD004 , SWD005 , SWD006 , SWD007 , SWD008 ,
	SWD009 , SWD010 , SWD011 , SWD012 , SWD013 , SWD014 , SWD015 , SWD016 ,
	SWD017 , SWD018 , SWD019 , SWD020 , SWD021 , SWD022 , SWD023 , SWD024 ,
	SWD025 , SWD026 , SWD027 , SWD028 , SWD029 , SWD030 , SWD031 , SWD032 ,
	SWD033 , SWD034 , SWD035 , TK001 , TK002 , TK003 , TK004 , TK005 ,
	TK006 , TK007 , TK008 , TK009 , TK010 , TK011 , TK012 , TK013 ,
	TK014 , TK015 , TK016 , TK017 , TK018 , TK019 , TK020 , TK021 ,
	TK022 , TK023 , TK024 , TK025 , TK026 , TK027 , TK028 , TK029 ,
	TK030 , TK031 , TK032 , TK033 , TK039 , TK040 , TK041 , TK042 ,
	TK043 , TK044 , TK045 , TK046 , TK047 , TK048 , TK049 , TK050 ,
	TK051 , TK052 , TK053 , TK054 , OGV04 , OGV05 , OGV06 , OGV07 ,
	OGV08 , OGV09 , OGV10 , OGV11 , OGV12 , OGV13 , OGV14 , OGV15 ,
	OGV16 , TUG01 , TUG02 , TUG03 , TUG04 , TUG05 , TUG06 , TUG07 ,
	TUG08 , TUG09 , TUG10 , TUG11 ,
OGV_BRTH	OGV_BRTH ,
TRK_IDL	TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 , TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 ,
LINEHAUL	LHD003 , LHD004 , LHD005 , LHD006 , LHD007 , LHD008 , LHD009 , LHD010 ,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
	LHD011 , LHD012 , LHD013 , LHD014 , LHD015 , LHD016 ,
SWITCH	SWD001 , SWD002 , SWD003 , SWD004 , SWD005 , SWD006 , SWD007 , SWD008 ,
	SWD009 , SWD010 , SWD011 , SWD012 , SWD013 , SWD014 , SWD015 , SWD016 ,
	SWD017 , SWD018 , SWD019 , SWD020 , SWD021 , SWD022 , SWD023 , SWD024 ,
	SWD025 , SWD026 , SWD027 , SWD028 , SWD029 , SWD030 , SWD031 , SWD032 ,
	SWD033 , SWD034 , SWD035 ,
TRK_MVNG	TK001 , TK002 , TK003 , TK004 , TK005 , TK006 , TK007 , TK008 ,
	TK009 , TK010 , TK011 , TK012 , TK013 , TK014 , TK015 , TK016 ,
	TK017 , TK018 , TK019 , TK020 , TK021 , TK022 , TK023 , TK024 ,
	TK025 , TK026 , TK027 , TK028 , TK029 , TK030 , TK031 , TK032 ,
	TK033 , TK039 , TK040 , TK041 , TK042 , TK043 , TK044 , TK045 ,
	TK046 , TK047 , TK048 , TK049 , TK050 , TK051 , TK052 , TK053 ,
	TK054 ,
OGV_TRNS	OGV04 , OGV05 , OGV06 , OGV07 , OGV08 , OGV09 , OGV10 , OGV11 ,
	OGV12 , OGV13 , OGV14 , OGV15 , OGV16 ,
TUGS	TUG_BRTH , TUG01 , TUG02 , TUG03 , TUG04 , TUG05 , TUG06 , TUG07 ,
	TUG08 , TUG09 , TUG10 , TUG11 ,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: TRK_IDL1

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	0.0,	0.0,	0.0,	0.0,	0.0,	2	0.0,	0.0,	0.0,	0.0,	0.0,
3	0.0,	0.0,	0.0,	0.0,	0.0,	4	17.4,	60.8,	57.3,	16.2,	-31.0,
5	24.4,	69.8,	69.8,	-94.4,	39.8,	6	24.4,	69.9,	69.9,	-100.4,	28.8,
7	24.4,	70.0,	70.0,	-104.5,	17.0,	8	24.4,	70.1,	70.1,	-106.4,	4.7,
9	24.4,	70.1,	70.1,	-106.1,	-7.8,	10	24.4,	70.1,	70.1,	-103.7,	-20.0,
11	24.4,	70.0,	70.0,	-99.2,	-31.6,	12	24.4,	69.9,	69.9,	-92.7,	-42.3,
13	24.4,	117.3,	125.6,	-140.2,	-27.9,	14	24.4,	106.9,	133.0,	-137.8,	-40.9,
15	24.4,	95.5,	138.6,	-132.4,	-52.7,	16	0.0,	0.0,	0.0,	0.0,	0.0,
17	0.0,	0.0,	0.0,	0.0,	0.0,	18	0.0,	0.0,	0.0,	0.0,	0.0,
19	0.0,	0.0,	0.0,	0.0,	0.0,	20	0.0,	0.0,	0.0,	0.0,	0.0,
21	0.0,	0.0,	0.0,	0.0,	0.0,	22	17.4,	60.8,	57.3,	-73.5,	31.0,
23	24.4,	69.8,	69.8,	24.5,	-39.8,	24	24.4,	69.9,	69.9,	30.5,	-28.8,
25	24.4,	70.0,	70.0,	34.4,	-17.0,	26	24.4,	70.1,	70.1,	36.3,	-4.7,
27	24.4,	70.1,	70.1,	36.0,	7.8,	28	24.4,	70.1,	70.1,	33.6,	20.0,
29	24.4,	70.0,	70.0,	29.1,	31.6,	30	24.4,	69.9,	69.9,	22.7,	42.3,
31	24.4,	117.3,	125.6,	14.6,	27.9,	32	24.4,	106.9,	133.0,	4.8,	40.9,
33	24.4,	95.5,	138.6,	-6.1,	52.7,	34	0.0,	0.0,	0.0,	0.0,	0.0,
35	0.0,	0.0,	0.0,	0.0,	0.0,	36	0.0,	0.0,	0.0,	0.0,	0.0,

SOURCE ID: TRK_IDL2

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	0.0,	0.0,	0.0,	0.0,	0.0,	2	0.0,	0.0,	0.0,	0.0,	0.0,
3	17.4,	58.5,	60.0,	4.4,	-33.4,	4	17.4,	60.8,	57.3,	11.0,	-26.9,
5	24.4,	69.8,	69.8,	-100.1,	42.9,	6	24.4,	69.9,	69.9,	-106.6,	30.9,
7	24.4,	70.0,	70.0,	-111.0,	18.0,	8	24.4,	70.1,	70.1,	-112.9,	4.5,
9	24.4,	70.1,	70.1,	-112.5,	-9.1,	10	24.4,	70.1,	70.1,	-109.8,	-22.4,
11	24.4,	70.0,	70.0,	-104.7,	-35.0,	12	24.4,	69.9,	69.9,	-97.5,	-46.6,
13	24.4,	117.3,	125.6,	-144.2,	-33.0,	14	24.4,	106.9,	133.0,	-140.9,	-46.7,
15	24.4,	95.5,	138.6,	-134.5,	-58.9,	16	0.0,	0.0,	0.0,	0.0,	0.0,
17	0.0,	0.0,	0.0,	0.0,	0.0,	18	0.0,	0.0,	0.0,	0.0,	0.0,
19	0.0,	0.0,	0.0,	0.0,	0.0,	20	0.0,	0.0,	0.0,	0.0,	0.0,
21	17.4,	58.5,	60.0,	-64.4,	33.4,	22	17.4,	60.8,	57.3,	-68.3,	26.9,
23	24.4,	69.8,	69.8,	30.3,	-42.9,	24	24.4,	69.9,	69.9,	36.7,	-30.9,
25	24.4,	70.0,	70.0,	40.9,	-18.0,	26	24.4,	70.1,	70.1,	42.8,	-4.5,
27	24.4,	70.1,	70.1,	42.4,	9.1,	28	24.4,	70.1,	70.1,	39.7,	22.4,
29	24.4,	70.0,	70.0,	34.7,	35.0,	30	24.4,	69.9,	69.9,	27.6,	46.6,
31	24.4,	117.3,	125.6,	18.6,	33.0,	32	24.4,	106.9,	133.0,	7.9,	46.7,
33	24.4,	95.5,	138.6,	-4.1,	58.9,	34	0.0,	0.0,	0.0,	0.0,	0.0,
35	0.0,	0.0,	0.0,	0.0,	0.0,	36	0.0,	0.0,	0.0,	0.0,	0.0,

SOURCE ID: TRK_IDL3

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ

1	0.0,	0.0,	0.0,	0.0,	0.0,	2	17.4,	54.9,	61.4,	-6.0,	-33.3,
3	17.4,	58.5,	60.0,	0.0,	-28.5,	4	17.4,	60.8,	57.3,	5.9,	-22.9,
5	24.4,	69.8,	69.8,	-105.9,	46.0,	6	24.4,	69.9,	69.9,	-112.8,	32.9,
7	24.4,	70.0,	70.0,	-117.4,	18.9,	8	24.4,	70.1,	70.1,	-119.5,	4.3,
9	24.4,	70.1,	70.1,	-119.0,	-10.4,	10	24.4,	70.1,	70.1,	-115.9,	-24.8,
11	24.4,	70.0,	70.0,	-110.3,	-38.5,	12	24.4,	126.4,	116.6,	-149.1,	-22.8,
13	24.4,	117.3,	125.6,	-148.3,	-38.2,	14	24.4,	106.9,	133.0,	-144.0,	-52.4,
15	17.4,	47.9,	60.0,	18.3,	27.3,	16	0.0,	0.0,	0.0,	0.0,	0.0,
17	0.0,	0.0,	0.0,	0.0,	0.0,	18	0.0,	0.0,	0.0,	0.0,	0.0,
19	0.0,	0.0,	0.0,	0.0,	0.0,	20	17.4,	54.9,	61.4,	-55.4,	33.3,
21	17.4,	58.5,	60.0,	-60.1,	28.5,	22	17.4,	60.8,	57.3,	-63.2,	22.9,
23	24.4,	69.8,	69.8,	36.0,	-46.0,	24	24.4,	69.9,	69.9,	42.9,	-32.9,
25	24.4,	70.0,	70.0,	47.4,	-18.9,	26	18.3,	45.8,	44.0,	-118.5,	-12.4,
27	18.3,	45.3,	48.3,	-117.0,	-26.9,	28	24.4,	70.1,	70.1,	45.8,	24.8,
29	24.4,	70.0,	70.0,	40.3,	38.5,	30	24.4,	126.4,	116.6,	32.5,	22.8,
31	24.4,	117.3,	125.6,	22.7,	38.2,	32	24.4,	106.9,	133.0,	11.0,	52.4,
33	17.4,	47.9,	60.0,	-78.2,	-27.3,	34	0.0,	0.0,	0.0,	0.0,	0.0,
35	0.0,	0.0,	0.0,	0.0,	0.0,	36	0.0,	0.0,	0.0,	0.0,	0.0,

SOURCE ID: TRK_IDL4

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	17.4,	50.0,	61.3,	-14.6,	-31.0,	2	17.4,	54.9,	61.4,	-9.5,	-27.7,
3	17.4,	57.7,	59.1,	-19.1,	-37.1,	4	17.4,	59.8,	56.5,	-11.6,	-34.8,
5	17.4,	60.6,	52.7,	-3.9,	-31.4,	6	24.4,	69.9,	69.9,	-119.0,	35.0,
7	24.4,	70.0,	70.0,	-123.9,	19.9,	8	24.4,	70.1,	70.1,	-126.0,	4.1,
9	24.4,	70.1,	70.1,	-125.3,	-11.7,	10	24.4,	70.1,	70.1,	-121.9,	-27.2,
11	24.4,	70.0,	70.0,	-115.9,	-41.9,	12	24.4,	126.4,	116.6,	-154.0,	-27.1,
13	24.4,	117.3,	125.6,	-152.3,	-43.3,	14	24.4,	106.9,	133.0,	-147.1,	-58.2,
15	17.4,	47.8,	60.1,	-3.1,	27.6,	16	17.4,	42.0,	58.1,	12.8,	28.9,
17	0.0,	0.0,	0.0,	0.0,	0.0,	18	0.0,	0.0,	0.0,	0.0,	0.0,
19	17.4,	50.0,	61.3,	-46.8,	31.0,	20	17.4,	54.9,	61.4,	-51.9,	27.7,
21	17.4,	57.7,	59.1,	-40.0,	37.1,	22	17.4,	59.8,	56.5,	-45.0,	34.8,
23	18.3,	54.6,	39.9,	-97.6,	34.2,	24	24.4,	138.6,	95.5,	23.6,	-69.3,
25	24.4,	142.0,	83.2,	40.6,	-55.9,	26	18.3,	45.8,	44.0,	-112.0,	-12.2,
27	18.3,	45.3,	48.3,	-110.7,	-25.6,	28	17.4,	60.2,	49.6,	-63.2,	2.9,
29	24.4,	70.0,	70.0,	45.8,	41.9,	30	24.4,	126.4,	116.6,	37.4,	27.1,
31	24.4,	117.3,	125.6,	26.7,	43.3,	32	24.4,	106.9,	133.0,	14.2,	58.2,
33	17.4,	47.8,	60.1,	-57.0,	-27.6,	34	17.4,	42.0,	58.1,	-70.8,	-28.9,
35	0.0,	0.0,	0.0,	0.0,	0.0,	36	0.0,	0.0,	0.0,	0.0,	0.0,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: TRK_IDL5

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	0.0,	0.0,	0.0,	0.0,	0.0,	2	17.4,	54.9,	61.4,	19.7,	-32.8,
3	17.4,	57.7,	59.1,	10.4,	-37.1,	4	17.4,	59.8,	56.5,	17.5,	-29.6,
5	17.4,	60.6,	52.7,	23.9,	-21.2,	6	17.4,	60.1,	47.8,	29.2,	-12.2,
7	24.4,	70.0,	70.0,	-101.3,	38.9,	8	24.4,	70.1,	70.1,	-107.0,	26.8,
9	24.4,	70.1,	70.1,	-110.6,	13.9,	10	24.4,	70.1,	70.1,	-111.9,	0.6,
11	24.4,	70.0,	70.0,	-110.8,	-12.8,	12	24.4,	69.9,	69.9,	-107.4,	-25.8,
13	24.4,	69.8,	69.8,	-101.7,	-37.9,	14	24.4,	106.9,	133.0,	-157.3,	-30.4,
15	24.4,	95.5,	138.6,	-153.4,	-45.7,	16	0.0,	0.0,	0.0,	0.0,	0.0,
17	0.0,	0.0,	0.0,	0.0,	0.0,	18	0.0,	0.0,	0.0,	0.0,	0.0,
19	0.0,	0.0,	0.0,	0.0,	0.0,	20	17.4,	54.9,	61.4,	-81.0,	32.8,
21	17.4,	57.7,	59.1,	-69.5,	37.1,	22	17.4,	59.8,	56.5,	-74.1,	29.6,
23	18.3,	54.6,	39.9,	-125.4,	24.1,	24	18.3,	52.6,	41.7,	-131.0,	4.3,
25	24.4,	70.0,	70.0,	31.2,	-38.9,	26	24.4,	70.1,	70.1,	37.0,	-26.8,
27	24.4,	70.1,	70.1,	40.5,	-13.9,	28	24.4,	70.1,	70.1,	41.8,	-0.6,
29	24.4,	70.0,	70.0,	40.8,	12.8,	30	24.4,	69.9,	69.9,	37.4,	25.8,
31	24.4,	69.8,	69.8,	31.9,	37.9,	32	24.4,	106.9,	133.0,	24.3,	30.4,
33	24.4,	95.5,	138.6,	14.8,	45.7,	34	0.0,	0.0,	0.0,	0.0,	0.0,
35	0.0,	0.0,	0.0,	0.0,	0.0,	36	0.0,	0.0,	0.0,	0.0,	0.0,

SOURCE ID: TRK_IDL6

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	0.0,	0.0,	0.0,	0.0,	0.0,	2	17.4,	54.9,	61.4,	16.2,	-27.3,
3	17.4,	57.7,	59.1,	6.1,	-32.2,	4	17.4,	59.8,	56.5,	12.4,	-25.6,
5	17.4,	60.6,	52.7,	18.1,	-18.1,	6	17.4,	60.1,	47.8,	23.0,	-10.1,
7	24.4,	70.0,	70.0,	-107.7,	39.8,	8	24.4,	70.1,	70.1,	-113.6,	26.6,
9	24.4,	70.1,	70.1,	-117.0,	12.6,	10	24.4,	70.1,	70.1,	-117.9,	-1.9,
11	24.4,	70.0,	70.0,	-116.3,	-16.2,	12	24.4,	69.9,	69.9,	-112.2,	-30.1,
13	24.4,	69.8,	69.8,	-105.8,	-43.1,	14	24.4,	106.9,	133.0,	-160.4,	-36.2,
15	24.4,	95.5,	138.6,	-155.5,	-51.9,	16	0.0,	0.0,	0.0,	0.0,	0.0,
17	0.0,	0.0,	0.0,	0.0,	0.0,	18	0.0,	0.0,	0.0,	0.0,	0.0,
19	0.0,	0.0,	0.0,	0.0,	0.0,	20	17.4,	54.9,	61.4,	-77.6,	27.3,
21	17.4,	57.7,	59.1,	-65.2,	32.2,	22	17.4,	59.8,	56.5,	-68.9,	25.6,
23	18.3,	54.6,	39.9,	-119.6,	21.0,	24	18.3,	52.6,	41.7,	-124.8,	2.3,
25	24.4,	70.0,	70.0,	37.7,	-39.8,	26	24.4,	70.1,	70.1,	43.5,	-26.6,
27	24.4,	70.1,	70.1,	46.9,	-12.6,	28	24.4,	70.1,	70.1,	47.8,	1.9,
29	24.4,	70.0,	70.0,	46.3,	16.2,	30	24.4,	69.9,	69.9,	42.3,	30.1,
31	24.4,	69.8,	69.8,	35.9,	43.1,	32	24.4,	106.9,	133.0,	27.4,	36.2,
33	24.4,	95.5,	138.6,	16.9,	51.9,	34	0.0,	0.0,	0.0,	0.0,	0.0,
35	0.0,	0.0,	0.0,	0.0,	0.0,	36	0.0,	0.0,	0.0,	0.0,	0.0,

SOURCE ID: TRK_IDL7

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ

1	17.4,	50.0,	61.3,	8.4,	-28.9,	2	17.4,	54.2,	60.3,	-4.1,	-32.3,
3	17.4,	57.7,	59.1,	1.7,	-27.3,	4	17.4,	59.8,	56.5,	7.3,	-21.5,
5	17.4,	60.6,	52.7,	12.4,	-15.0,	6	17.4,	60.1,	47.8,	16.8,	-8.1,
7	24.4,	70.0,	70.0,	-114.2,	40.8,	8	24.4,	70.1,	70.1,	-120.1,	26.4,
9	24.4,	70.1,	70.1,	-123.4,	11.2,	10	24.4,	70.1,	70.1,	-124.0,	-4.3,
11	24.4,	70.0,	70.0,	-121.9,	-19.7,	12	24.4,	69.9,	69.9,	-117.1,	-34.5,
13	24.4,	117.3,	125.6,	-165.6,	-24.5,	14	24.4,	106.9,	133.0,	-163.5,	-42.0,
15	24.4,	95.5,	138.6,	-157.5,	-58.2,	16	0.0,	0.0,	0.0,	0.0,	0.0,
17	0.0,	0.0,	0.0,	0.0,	0.0,	18	0.0,	0.0,	0.0,	0.0,	0.0,
19	17.4,	50.0,	61.3,	-69.7,	28.9,	20	17.4,	54.2,	60.3,	-56.2,	32.3,
21	17.4,	57.7,	59.1,	-60.8,	27.3,	22	18.3,	55.5,	37.5,	-106.0,	35.1,
23	18.3,	54.6,	39.9,	-113.9,	17.9,	24	18.3,	52.6,	41.7,	-118.5,	0.2,
25	24.4,	70.0,	70.0,	44.2,	-40.8,	26	17.4,	55.8,	37.3,	-59.7,	-6.4,
27	17.4,	58.6,	43.9,	-61.2,	-13.4,	28	17.4,	60.2,	49.6,	-61.2,	-20.0,
29	17.4,	60.3,	54.2,	-59.5,	-26.0,	30	24.4,	69.9,	69.9,	47.2,	34.5,
31	24.4,	117.3,	125.6,	40.0,	24.5,	32	24.4,	106.9,	133.0,	30.5,	42.0,
33	24.4,	95.5,	138.6,	18.9,	58.2,	34	0.0,	0.0,	0.0,	0.0,	0.0,
35	0.0,	0.0,	0.0,	0.0,	0.0,	36	0.0,	0.0,	0.0,	0.0,	0.0,

SOURCE ID: TRK_IDL8

IFV	BH	BW	BL	XADJ	YADJ	IFV	BH	BW	BL	XADJ	YADJ
1	17.4,	49.6,	60.2,	-12.5,	-30.3,	2	17.4,	54.2,	60.3,	-7.6,	-26.8,
3	17.4,	57.7,	59.1,	-2.6,	-22.5,	4	17.4,	59.8,	56.5,	2.1,	-17.5,
5	17.4,	60.6,	52.7,	6.6,	-11.9,	6	17.4,	60.1,	47.8,	10.6,	-6.0,
7	24.4,	70.0,	70.0,	-120.7,	41.7,	8	24.4,	70.1,	70.1,	-126.6,	26.2,
9	24.4,	70.1,	70.1,	-129.8,	9.9,	10	24.4,	70.1,	70.1,	-130.1,	-6.7,
11	24.4,	70.0,	70.0,	-127.4,	-23.1,	12	24.4,	69.9,	69.9,	-122.0,	-38.8,
13	24.4,	117.3,	125.6,	-169.6,	-29.6,	14	24.4,	106.9,	133.0,	-166.6,	-47.7,
15	17.4,	47.9,	60.0,	-4.8,	28.1,	16	0.0,	0.0,	0.0,	0.0,	0.0,
17	0.0,	0.0,	0.0,	0.0,	0.0,	18	17.4,	44.2,	59.9,	-62.0,	28.9,
19	17.4,	49.6,	60.2,	-47.7,	30.3,	20	17.4,	54.2,	60.3,	-52.8,	26.8,
21	17.4,	57.7,	59.1,	-56.5,	22.5,	22	18.3,	55.5,	37.5,	-100.9,	31.1,
23	18.3,	54.6,	39.9,	-108.1,	14.8,	24	18.3,	52.6,	41.7,	-112.4,	-1.8,
25	24.4,	142.0,	83.2,	37.4,	-77.7,	26	17.4,	55.8,	37.3,	-53.2,	-6.2,
27	17.4,	58.6,	43.9,	-54.9,	-12.1,	28	17.4,	60.2,	49.6,	-55.1,	-17.6,
29	17.4,	60.3,	54.2,	-53.9,	-22.6,	30	17.4,	59.1,	57.7,	-51.3,	-26.9,
31	24.4,	117.3,	125.6,	44.0,	29.6,	32	24.4,	106.9,	133.0,	33.6,	47.7,
33	17.4,	47.9,	60.0,	-55.2,	-28.1,	34	0.0,	0.0,	0.0,	0.0,	0.0,
35	0.0,	0.0,	0.0,	0.0,	0.0,	36	17.4,	44.2,	59.9,	2.2,	-28.9,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = LHD003 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = LHD004 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = LHD005 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = LHD006 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = LHD007 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

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* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = LHD008 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = LHD009 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = LHD010 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = LHD011 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = LHD012 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

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* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = LHD013 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = LHD014 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = LHD015 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = LHD016 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.10000E+01	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.10000E+01	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD001 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

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* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = SWD002 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD003 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD004 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD005 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD006 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = SWD007 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD008 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD009 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD010 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD011 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = SWD012 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD013 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD014 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD015 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD016 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = SWD017 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD018 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD019 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD020 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD021 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = SWD022 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD023 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD024 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD025 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD026 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = SWD027 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD028 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD029 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD030 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD031 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

SOURCE ID = SWD032 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD033 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD034 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

SOURCE ID = SWD035 ; SOURCE TYPE = LINE :

1	.00000E+00	2	.00000E+00	3	.00000E+00	4	.00000E+00	5	.00000E+00	6	.00000E+00
7	.00000E+00	8	.10000E+01	9	.10000E+01	10	.10000E+01	11	.10000E+01	12	.10000E+01
13	.10000E+01	14	.10000E+01	15	.10000E+01	16	.00000E+00	17	.00000E+00	18	.00000E+00
19	.00000E+00	20	.00000E+00	21	.00000E+00	22	.00000E+00	23	.00000E+00	24	.00000E+00

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647283.3, 4201227.6,	3.3,	3.3,	0.0);	(647278.8, 4201250.9,	3.4,	3.4,	0.0);
(647274.4, 4201274.1,	3.6,	3.6,	0.0);	(647270.0, 4201297.3,	3.6,	3.6,	0.0);
(647265.6, 4201320.5,	3.6,	3.6,	0.0);	(647261.2, 4201343.7,	3.6,	3.6,	0.0);
(647283.5, 4201347.9,	3.6,	3.6,	0.0);	(647305.9, 4201352.1,	3.6,	3.6,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	647328.2,	4201356.2,	3.6,	3.6,	0.0);	(	647350.6,	4201360.4,	3.6,	3.6,	0.0);
(	647372.9,	4201364.6,	3.6,	3.6,	0.0);	(	647395.2,	4201368.7,	3.6,	3.6,	0.0);
(	647417.6,	4201372.9,	3.6,	3.6,	0.0);	(	647439.9,	4201377.1,	3.6,	3.6,	0.0);
(	647443.7,	4201357.4,	3.6,	3.6,	0.0);	(	647447.5,	4201337.7,	3.6,	3.6,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647451.2,	4201318.1,	3.7,	3.7,	0.0);	(647455.0,	4201298.4,	3.6,	3.6,	0.0);
(647458.8,	4201278.8,	3.4,	3.4,	0.0);	(647456.8,	4201261.3,	3.3,	3.3,	0.0);
(647435.1,	4201257.1,	3.4,	3.4,	0.0);	(647413.4,	4201252.9,	3.4,	3.4,	0.0);
(647391.7,	4201248.7,	3.4,	3.4,	0.0);	(647370.0,	4201244.5,	3.4,	3.4,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	647348.3,	4201240.2,	3.3,	3.3,	0.0);	(	647326.6,	4201236.0,	3.3,	3.3,	0.0);
(	647304.9,	4201231.8,	3.3,	3.3,	0.0);	(	647229.3,	4201468.6,	3.2,	3.2,	0.0);
(	647227.5,	4201487.6,	3.1,	3.1,	0.0);	(	647225.8,	4201506.5,	3.0,	3.0,	0.0);
(	647224.0,	4201525.5,	2.9,	2.9,	0.0);	(	647247.2,	4201527.3,	3.0,	3.0,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647270.3, 4201529.1, 3.2, 3.2, 0.0); (647293.4, 4201530.9, 3.2, 3.2, 0.0);
(647316.5, 4201532.7, 3.3, 3.3, 0.0); (647339.7, 4201534.6, 3.4, 3.4, 0.0);
(647362.8, 4201536.4, 3.4, 3.4, 0.0); (647379.0, 4201524.1, 3.4, 3.4, 0.0);
(647395.2, 4201511.8, 3.5, 3.5, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647411.3, 4201499.5, 3.5, 3.5, 0.0); (647427.5, 4201487.2, 3.5, 3.5, 0.0);
(647402.8, 4201484.9, 3.5, 3.5, 0.0); (647378.0, 4201482.6, 3.5, 3.5, 0.0);
(647353.2, 4201480.2, 3.4, 3.4, 0.0); (647328.4, 4201477.9, 3.4, 3.4, 0.0);
(647303.6, 4201475.6, 3.4, 3.4, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	647278.9,	4201473.3,	3.3,	3.3,	0.0);	(	647254.1,	4201470.9,	3.2,	3.2,	0.0);
(	646800.0,	4201250.0,	2.9,	2.9,	0.0);	(	646850.0,	4201250.0,	3.0,	3.0,	0.0);
(	646800.0,	4201300.0,	3.3,	3.3,	0.0);	(	646850.0,	4201300.0,	3.3,	3.3,	0.0);
(	646900.0,	4201300.0,	3.3,	3.3,	0.0);						

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(646950.0, 4201300.0, 3.4, 3.4, 0.0); (647000.0, 4201300.0, 3.5, 3.5, 0.0);
(647050.0, 4201300.0, 3.5, 3.5, 0.0); (647100.0, 4201300.0, 3.6, 3.6, 0.0);
(647150.0, 4201300.0, 3.6, 3.6, 0.0); (647200.0, 4201300.0, 3.6, 3.6, 0.0);
(647250.0, 4201300.0, 3.6, 3.6, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	647500.0,	4201300.0,	3.4,	3.4,	0.0);	(	647550.0,	4201300.0,	2.6,	2.6,	0.0);
(	646850.0,	4201350.0,	3.5,	3.5,	0.0);	(	646900.0,	4201350.0,	3.5,	3.5,	0.0);
(	646950.0,	4201350.0,	3.6,	3.6,	0.0);	(	647000.0,	4201350.0,	3.6,	3.6,	0.0);
(	647050.0,	4201350.0,	3.6,	3.6,	0.0);						

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	647100.0,	4201350.0,	3.5,	3.5,	0.0);	(	647150.0,	4201350.0,	3.5,	3.5,	0.0);
(	647200.0,	4201350.0,	3.5,	3.5,	0.0);	(	647250.0,	4201350.0,	3.5,	3.5,	0.0);
(	647450.0,	4201350.0,	3.6,	3.6,	0.0);	(	647500.0,	4201350.0,	3.6,	3.6,	0.0);
(	647550.0,	4201350.0,	2.8,	2.8,	0.0);						

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	646800.0,	4201400.0,	3.5,	3.5,	0.0);	(	646850.0,	4201400.0,	3.5,	3.5,	0.0);
(	647050.0,	4201400.0,	3.4,	3.4,	0.0);	(	647100.0,	4201400.0,	3.4,	3.4,	0.0);
(	647150.0,	4201400.0,	3.4,	3.4,	0.0);	(	647200.0,	4201400.0,	3.4,	3.4,	0.0);
(	647250.0,	4201400.0,	3.4,	3.4,	0.0);						

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	647300.0,	4201400.0,	3.5,	3.5,	0.0);	(	647350.0,	4201400.0,	3.5,	3.5,	0.0);
(	647400.0,	4201400.0,	3.6,	3.6,	0.0);	(	647450.0,	4201400.0,	3.6,	3.6,	0.0);
(	647500.0,	4201400.0,	3.6,	3.6,	0.0);	(	647550.0,	4201400.0,	3.5,	3.5,	0.0);
(	646800.0,	4201450.0,	3.4,	3.4,	0.0);						

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(646850.0, 4201450.0, 3.4, 3.4, 0.0); (646900.0, 4201450.0, 3.4, 3.4, 0.0);
(646950.0, 4201450.0, 3.3, 3.3, 0.0); (647000.0, 4201450.0, 3.3, 3.3, 0.0);
(647050.0, 4201450.0, 3.2, 3.2, 0.0); (647100.0, 4201450.0, 3.2, 3.2, 0.0);
(647150.0, 4201450.0, 3.2, 3.2, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647200.0, 4201450.0, 3.2, 3.2, 0.0); (647250.0, 4201450.0, 3.3, 3.3, 0.0);
(647300.0, 4201450.0, 3.4, 3.4, 0.0); (647400.0, 4201450.0, 3.5, 3.5, 0.0);
(647450.0, 4201450.0, 3.5, 3.5, 0.0); (647500.0, 4201450.0, 3.6, 3.6, 0.0);
(647550.0, 4201450.0, 3.6, 3.6, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(646950.0, 4201500.0, 3.1, 3.1, 0.0); (647000.0, 4201500.0, 3.1, 3.1, 0.0);
(647050.0, 4201500.0, 3.0, 3.0, 0.0); (647100.0, 4201500.0, 2.9, 2.9, 0.0);
(647150.0, 4201500.0, 3.0, 3.0, 0.0); (647200.0, 4201500.0, 3.0, 3.0, 0.0);
(647450.0, 4201500.0, 3.5, 3.5, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647500.0, 4201500.0, 3.5, 3.5, 0.0); (647550.0, 4201500.0, 3.6, 3.6, 0.0);
(647250.0, 4201550.0, 3.0, 3.0, 0.0); (647300.0, 4201550.0, 3.2, 3.2, 0.0);
(647400.0, 4201550.0, 3.4, 3.4, 0.0); (647450.0, 4201550.0, 3.5, 3.5, 0.0);
(647500.0, 4201550.0, 3.5, 3.5, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647200.0, 4201600.0, 2.9, 2.9, 0.0); (647250.0, 4201600.0, 3.0, 3.0, 0.0);
(647300.0, 4201600.0, 3.2, 3.2, 0.0); (647350.0, 4201600.0, 3.4, 3.4, 0.0);
(647400.0, 4201600.0, 3.4, 3.4, 0.0); (647450.0, 4201600.0, 3.4, 3.4, 0.0);
(647150.0, 4201650.0, 3.0, 3.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647200.0, 4201650.0, 3.0, 3.0, 0.0); (647250.0, 4201650.0, 3.1, 3.1, 0.0);
(647300.0, 4201650.0, 3.2, 3.2, 0.0); (647350.0, 4201650.0, 3.3, 3.3, 0.0);
(647400.0, 4201650.0, 3.4, 3.4, 0.0); (647700.0, 4201100.0, 2.6, 2.6, 0.0);
(647750.0, 4201100.0, 2.6, 2.6, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647800.0, 4201100.0, 2.6, 2.6, 0.0); (647850.0, 4201100.0, 2.6, 2.6, 0.0);
(647700.0, 4201150.0, 2.6, 2.6, 0.0); (647750.0, 4201150.0, 2.6, 2.6, 0.0);
(647850.0, 4201150.0, 2.6, 2.6, 0.0); (647700.0, 4201200.0, 2.6, 2.6, 0.0);
(647750.0, 4201250.0, 2.6, 2.6, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(647750.0, 4201300.0, 2.6, 2.6, 0.0); (647800.0, 4201300.0, 2.6, 2.6, 0.0);
(647850.0, 4201300.0, 2.6, 2.6, 0.0); (647750.0, 4201350.0, 2.6, 2.6, 0.0);
(647800.0, 4201350.0, 2.6, 2.6, 0.0); (647750.0, 4201400.0, 2.6, 2.6, 0.0);
(647800.0, 4201400.0, 2.6, 2.6, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

```
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1  1 1 1 1 1
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NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: Stockton_2013-2017.SFC Met Version: 18081
Profile file: Stockton_2013-2017.PFL
Surface format: FREE
Profile format: FREE
Surface station no.: 23237 Upper air station no.: 23230
Name: UNKNOWN Name: UNKNOWN
Year: 2013 Year: 2013

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
13	01	01	1	01	-22.0	0.211	-9.000	-9.000	-999.	232.	48.8	0.07	2.20	1.00	2.78	149.	10.0	273.8	2.0
13	01	01	1	02	-14.6	0.158	-9.000	-9.000	-999.	152.	27.6	0.04	2.20	1.00	2.37	77.	10.0	273.8	2.0
13	01	01	1	03	-18.4	0.181	-9.000	-9.000	-999.	185.	36.0	0.06	2.20	1.00	2.52	97.	10.0	273.1	2.0
13	01	01	1	04	-6.7	0.105	-9.000	-9.000	-999.	84.	16.0	0.04	2.20	1.00	1.63	349.	10.0	272.5	2.0
13	01	01	1	05	-20.1	0.193	-9.000	-9.000	-999.	203.	40.9	0.04	2.20	1.00	2.86	356.	10.0	274.2	2.0
13	01	01	1	06	-3.9	0.081	-9.000	-9.000	-999.	64.	12.6	0.04	2.20	1.00	1.23	77.	10.0	273.8	2.0
13	01	01	1	07	-18.3	0.180	-9.000	-9.000	-999.	184.	35.8	0.06	2.20	1.00	2.52	255.	10.0	273.1	2.0
13	01	01	1	08	-26.9	0.259	-9.000	-9.000	-999.	316.	73.8	0.08	2.20	0.73	3.29	287.	10.0	274.2	2.0
13	01	01	1	09	-1.9	0.212	-9.000	-9.000	-999.	236.	461.6	0.05	2.20	0.39	2.81	315.	10.0	275.9	2.0
13	01	01	1	10	61.1	0.155	0.630	0.005	150.	147.	-5.5	0.04	2.20	0.27	1.60	336.	10.0	277.5	2.0
13	01	01	1	11	110.2	0.238	1.137	0.005	488.	279.	-11.2	0.06	2.20	0.23	2.45	228.	10.0	279.9	2.0
13	01	01	1	12	137.1	0.276	1.492	0.008	886.	347.	-14.0	0.08	2.20	0.22	2.69	286.	10.0	280.4	2.0
13	01	01	1	13	141.1	0.271	1.531	0.007	929.	339.	-12.9	0.05	2.20	0.21	2.88	325.	10.0	282.5	2.0
13	01	01	1	14	121.3	0.232	1.475	0.006	965.	269.	-9.4	0.04	2.20	0.22	2.57	356.	10.0	283.8	2.0
13	01	01	1	15	78.7	0.218	1.287	0.005	988.	244.	-12.0	0.04	2.20	0.26	2.47	357.	10.0	284.2	2.0
13	01	01	1	16	17.6	0.265	0.783	0.005	993.	327.	-96.0	0.03	2.20	0.35	3.59	2.	10.0	284.2	2.0
13	01	01	1	17	-11.2	0.143	-9.000	-9.000	-999.	139.	24.1	0.04	2.20	0.60	2.16	346.	10.0	282.5	2.0
13	01	01	1	18	-8.7	0.125	-9.000	-9.000	-999.	107.	20.6	0.08	2.20	1.00	1.67	273.	10.0	279.2	2.0
13	01	01	1	19	-13.3	0.154	-9.000	-9.000	-999.	145.	26.0	0.06	2.20	1.00	2.15	238.	10.0	278.1	2.0
13	01	01	1	20	-10.2	0.134	-9.000	-9.000	-999.	117.	21.4	0.06	2.20	1.00	1.89	230.	10.0	275.9	2.0
13	01	01	1	21	-12.5	0.148	-9.000	-9.000	-999.	137.	24.2	0.05	2.20	1.00	2.11	300.	10.0	276.4	2.0
13	01	01	1	22	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.05	2.20	1.00	0.00	0.	10.0	275.9	2.0
13	01	01	1	23	-24.0	0.230	-9.000	-9.000	-999.	264.	57.9	0.04	2.20	1.00	3.36	80.	10.0	274.2	2.0
13	01	01	1	24	-16.1	0.169	-9.000	-9.000	-999.	167.	31.3	0.06	2.20	1.00	2.36	100.	10.0	274.2	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
13	01	01	01	10.0	1	149.	2.78	273.8	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647283.30	4201227.60	0.02063	647278.80	4201250.90	0.02282
647274.40	4201274.10	0.02677	647270.00	4201297.30	0.03010
647265.60	4201320.50	0.03030	647261.20	4201343.70	0.03231
647283.50	4201347.90	0.03448	647305.90	4201352.10	0.03473

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647328.20	4201356.20	0.03428	647350.60	4201360.40	0.03522
647372.90	4201364.60	0.03656	647395.20	4201368.70	0.03805
647417.60	4201372.90	0.04059	647439.90	4201377.10	0.04522
647443.70	4201357.40	0.03484	647447.50	4201337.70	0.02857

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647451.20	4201318.10	0.02441	647455.00	4201298.40	0.02142
647458.80	4201278.80	0.01916	647456.80	4201261.30	0.01761
647435.10	4201257.10	0.01765	647413.40	4201252.90	0.01785
647391.70	4201248.70	0.01828	647370.00	4201244.50	0.01883

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647348.30	4201240.20	0.01932	647326.60	4201236.00	0.02032
647304.90	4201231.80	0.02055	647229.30	4201468.60	0.03924
647227.50	4201487.60	0.03210	647225.80	4201506.50	0.02823
647224.00	4201525.50	0.02617	647247.20	4201527.30	0.02766

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647270.30	4201529.10	0.02959	647293.40	4201530.90	0.03245
647316.50	4201532.70	0.03730	647339.70	4201534.60	0.04655
647362.80	4201536.40	0.06602	647379.00	4201524.10	0.06737
647395.20	4201511.80	0.06918			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647411.30	4201499.50	0.07131	647427.50	4201487.20	0.07400
647402.80	4201484.90	0.05660	647378.00	4201482.60	0.04915
647353.20	4201480.20	0.04557	647328.40	4201477.90	0.04353
647303.60	4201475.60	0.04221			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647278.90	4201473.30	0.04116	647254.10	4201470.90	0.04026
646800.00	4201250.00	0.03539	646850.00	4201250.00	0.02368
646800.00	4201300.00	0.04503	646850.00	4201300.00	0.03217
646900.00	4201300.00	0.02708			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
646950.00	4201300.00	0.02485	647000.00	4201300.00	0.02364
647050.00	4201300.00	0.02291	647100.00	4201300.00	0.02250
647150.00	4201300.00	0.02262	647200.00	4201300.00	0.02315
647250.00	4201300.00	0.02531			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647500.00	4201300.00	0.02156	647550.00	4201300.00	0.02045
646850.00	4201350.00	0.05798	646900.00	4201350.00	0.04945
646950.00	4201350.00	0.04459	647000.00	4201350.00	0.04158
647050.00	4201350.00	0.03910			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647100.00	4201350.00	0.03696	647150.00	4201350.00	0.03544
647200.00	4201350.00	0.03433	647250.00	4201350.00	0.03390
647450.00	4201350.00	0.03237	647500.00	4201350.00	0.03629
647550.00	4201350.00	0.02684			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
646800.00	4201400.00	0.03914	646850.00	4201400.00	0.04724
647050.00	4201400.00	0.08611	647100.00	4201400.00	0.08233
647150.00	4201400.00	0.07664	647200.00	4201400.00	0.07010
647250.00	4201400.00	0.06532			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647300.00	4201400.00	0.06128	647350.00	4201400.00	0.05890
647400.00	4201400.00	0.05946	647450.00	4201400.00	0.07283
647500.00	4201400.00	0.04911	647550.00	4201400.00	0.03162
646800.00	4201450.00	0.01983			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
646850.00	4201450.00	0.02206	646900.00	4201450.00	0.02443
646950.00	4201450.00	0.02686	647000.00	4201450.00	0.02943
647050.00	4201450.00	0.03242	647100.00	4201450.00	0.03627
647150.00	4201450.00	0.04140			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647200.00	4201450.00	0.04726	647250.00	4201450.00	0.05349
647300.00	4201450.00	0.05995	647400.00	4201450.00	0.07688
647450.00	4201450.00	0.07510	647500.00	4201450.00	0.07212
647550.00	4201450.00	0.03713			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
646950.00	4201500.00	0.01647	647000.00	4201500.00	0.01761
647050.00	4201500.00	0.01903	647100.00	4201500.00	0.02129
647150.00	4201500.00	0.02435	647200.00	4201500.00	0.02762
647450.00	4201500.00	0.06012			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647500.00	4201500.00	0.03470	647550.00	4201500.00	0.02181
647250.00	4201550.00	0.02782	647300.00	4201550.00	0.03723
647400.00	4201550.00	0.04253	647450.00	4201550.00	0.02639
647500.00	4201550.00	0.01828			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647200.00	4201600.00	0.02505	647250.00	4201600.00	0.03908
647300.00	4201600.00	0.06314	647350.00	4201600.00	0.03363
647400.00	4201600.00	0.02237	647450.00	4201600.00	0.01672
647150.00	4201650.00	0.02146			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647200.00	4201650.00	0.04185	647250.00	4201650.00	0.04544
647300.00	4201650.00	0.02659	647350.00	4201650.00	0.01919
647400.00	4201650.00	0.01519	647700.00	4201100.00	0.00847
647750.00	4201100.00	0.00794			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647800.00	4201100.00	0.00742	647850.00	4201100.00	0.00692
647700.00	4201150.00	0.00930	647750.00	4201150.00	0.00856
647850.00	4201150.00	0.00725	647700.00	4201200.00	0.01018
647750.00	4201250.00	0.00972			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE PERIOD (43824 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): OGV_BRTH , TRK_IDL1 , TRK_IDL2 , TRK_IDL3 , TRK_IDL4 ,
TRK_IDL5 , TRK_IDL6 , TRK_IDL7 , TRK_IDL8 , TUG_BRTH , LHD003 , LHD004 , LHD005 ,
LHD006 , LHD007 , LHD008 , LHD009 , LHD010 , LHD011 , LHD012 , LHD013 ,
LHD014 , LHD015 , LHD016 , SWD001 , SWD002 , SWD003 , SWD004 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM_ANN IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
647750.00	4201300.00	0.01006	647800.00	4201300.00	0.00873
647850.00	4201300.00	0.00772	647750.00	4201350.00	0.01009
647800.00	4201350.00	0.00865	647750.00	4201400.00	0.00972
647800.00	4201400.00	0.00832			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   11 Warning Message(s)
A Total of   971 Informational Message(s)

A Total of   43824 Hours Were Processed

A Total of   442 Calm Hours Identified

A Total of   529 Missing Hours Identified (1.21 Percent)

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
ME W186   780   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used   0.50
ME W187   780   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET
MX W420   34276   METQA: Wind Speed Out-of-Range.   KURDAT =   16112904
MX W420   34282   METQA: Wind Speed Out-of-Range.   KURDAT =   16112910
MX W420   34288   METQA: Wind Speed Out-of-Range.   KURDAT =   16112916
MX W420   34294   METQA: Wind Speed Out-of-Range.   KURDAT =   16112922
MX W420   34300   METQA: Wind Speed Out-of-Range.   KURDAT =   16113004
MX W420   40768   METQA: Wind Speed Out-of-Range.   KURDAT =   17082616
MX W420   40792   METQA: Wind Speed Out-of-Range.   KURDAT =   17082716
MX W420   40798   METQA: Wind Speed Out-of-Range.   KURDAT =   17082722
MX W420   40804   METQA: Wind Speed Out-of-Range.   KURDAT =   17082804

   ****
   *** AERMOD Finishes Successfully ***
   ****

Appendix E

HARP Output

HARP2 - HRACalc (dated 17023) 1/8/2019 10:30:49 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: Cancer
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: 1
Total Exposure Duration: 30

Exposure Duration Bin Distribution
3rd Trimester Bin: 0
0<2 Years Bin: 1
2<9 Years Bin: 0
2<16 Years Bin: 14
16<30 Years Bin: 0
16 to 70 Years Bin: 15

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home

3rd Trimester to 16 years: OFF
16 years to 70 years: ON

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk saved to: C:\Users\Lora\Documents\ILANCO\CLIENTS\Anchor Env\Contanda_Stockton\Contanda Rocket\Full Calculations\HRA\HARP\ResOpCancer2CancerRisk.csv
HRA ran successfully

HARP2 - HRACalc (dated 17023) 1/8/2019 10:31:54 AM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: NCChronic
Calculation Method: HighEnd

****
EXPOSURE DURATION PARAMETERS FOR CANCER
Exposure duration are only adjusted for cancer assessments

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
NOTE: Exposure duration (i.e., start age, end age, ED, & FAH) are only adjusted for cancer assessments.

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating chronic risk
Chronic risk saved to: C:\Users\Lora\Documents\ILANCO\CLIENTS\Anchor Env\Contanda_Stockton\Contanda Rocket\Full Calculations\HRA\HARP\ResOpChronic2NCChronicRisk.csv

HRA ran successfully

Appendix F
Special-Status Species Potentially Present in the Project Area

Table F-1
Special Status Species Potentially Present in the Project Area

Species	Federal	State	Habitat Association	Potential to Occur
Invertebrates				
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	T	-	Riparian scrub in association with blue elderberry (*Sambucus mexicana*)	No potential to occur. Habitat not present.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	E	-	Valley and foothill grassland; vernal pool; wetland	No potential to occur. Habitat not present.
Amphibians				
California tiger salamander (*Ambystoma californiense*)	T	T	Cismontane woodland; meadow and seep; riparian woodland; valley and foothill grassland	No potential to occur. Habitat not present.
Western pond turtle (*Emys marmorata*)	-	SSC	Aquatic; flowing waters; standing waters; wetland	No potential to occur. Habitat not present.
Birds				
Tricolored blackbird (*Agelaius tricolor*)	-	CE; SSC	Freshwater marsh; marsh and swamp; swamp; wetland	No potential to occur. Habitat not present.
Burrowing owl (*Athene cunicularia*)	-	SSC	Prairie; scrub; grassland	No potential to occur. Habitat not present.
White-tailed kite (*Elanus leucurus*)	-	FP	Open grasslands; savanna; open woodlands; marshes; desert grassland; partially cleared lands; cultivated fields	Low potential to occur in trees surrounding the project site.
Swainson's hawk (*Buteo swainsoni*)	-	T	Great basin grassland; riparian forest; riparian woodland; valley and foothill grassland	Low potential to occur in trees surrounding the project site.
Least Bell's vireo (*Vireo bellii pusillus*)	E	E	Riparian forest; riparian scrub; riparian woodland	No potential to occur. Habitat not present.
California black rail (*Laterallus jamaicensis coturniculus*)	-	T; FP	Brackish marsh; freshwater marsh; marsh and swamp; salt marsh; wetland	No potential to occur. Habitat not present.
Song sparrow ("Modesto" population) (*Melospiza melodia*)	-	SSC	Riparian shrub-scrub	No potential to occur. Habitat not present.

Species	Federal	State	Habitat Association	Potential to Occur
Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)	-	SSC	Marsh and swamp; wetland	No potential to occur. Habitat not present.
Loggerhead shrike (*Lanius ludovicianus*)	-	SSC	Broadleaved upland forest, Desert wash, Joshua tree woodland, Mojavean desert scrub, Pinon and juniper woodlands, Riparian woodland, Sonoran desert scrub	No potential to occur. Habitat not present.
Mammals				
Riparian brush rabbit (*Sylvilagus bachmani riparius*)	E	E	Riparian forest	No potential to occur. Habitat not present.
American badger (*Taxidea taxus*)	-	SSC	Variety of terrestrial habitats	No potential to occur. Habitat not present.
Fish				
Delta smelt (*Hypomesus transpacificus*)	T	E	Aquatic; estuary	No potential to occur. Habitat not present.
Steelhead - Central Valley DPS (*Oncorhynchus mykiss irideus*)	T	-	Aquatic; Sacramento/San Joaquin flowing waters	No potential to occur. Habitat not present.
Longfin smelt (*Spirinchus thaleichthys*)	C	T; SSC	Aquatic; estuary	No potential to occur. Habitat not present.
Reptiles				
Giant garter snake (*Thamnophis gigas*)	T	T	Marsh and swamp; riparian scrub; wetland	No potential to occur. Habitat not present.
Plants				
Palmate-bracted salty bird's-beak (*Chloropyron palmatum*)	E	E; 1B.1	Chenopod scrub; meadow and seep; valley and foothill grassland; wetland	No potential to occur. Habitat not present.
Delta button-celery (*Eryngium racemosum*)	-	E; 1B.1	Riparian scrub; wetland	No potential to occur. Habitat not present.

Notes:
Source: California Natural Diversity Database 2018 search of project area and surrounding quadrangles (Stockton West, Terminous, Lodi South, Waterloo, Stockton East, Manteca, Lathrop, Union Island, and Holt).
C: candidate
E: endangered
FP: California Department of Fish and Wildlife fully protected
Rare Plant Rank 1B.1: rare, threatened, or endangered in California and elsewhere; seriously threatened in California (more than 80% of occurrences threatened/high degree and immediacy of threat)
SSC: state species of special concern
T: threatened

Table F-2
CNPS List Plant Species with the Potential to Occur in the Study Area

Common Name	Scientific Name	California Rare Plant Rank
Alkali milk-vetch	*Astragalus tener var. tener*	1B.2
Heartscale	*Atriplex cordulata var. cordulata*	1B.2
Big tarplant	*Blepharizonia plumosa*	1B.1
Watershield	*Brasenia schreberi*	2B.3
Bristly sedge	*Carex comosa*	2B.1
Palmate-bracted salty bird's-beak	*Chloropyron palmatum*	1B.1 (Federal Endangered; State Endangered)
Slough thistle	*Cirsium crassicaule*	1B.1
Recurved larkspur	*Delphinium recurvatum*	1B.2
Delta button-celery	*Eryngium racemosum*	1B.1 (State Endangered)
San Joaquin spearscale	*Extriplex joaquinana*	1B.2
Woolly rose-mallow	*Hibiscus lasiocarpos var. occidentalis*	1B.2
Delta tule pea	*Lathyrus jepsonii var. jepsonii*	1B.2
Mason's lilaeopsis	*Lilaeopsis masonii*	1B.1
Delta mudwort	*Limosella australis*	2B.1
Sanford's arrowhead	*Sagittaria sanfordii*	1B.2
Side-flowering skullcap	*Scutellaria lateriflora*	2B.2
Suisun Marsh aster	*Symphyotrichum lentum*	1B.2
Wright's trichocoronis	*Trichocoronis wrightii var. wrightii*	2B.1
Saline clover	*Trifolium hydrophilum*	1B.2
Caper-fruited tropidocarpum	*Tropidocarpum capparideum*	1B.1

Notes:
Source: California Department of Fish and Wildlife, 2018. California Native Diversity Database Rarefind 5 Program Search of Stockton West Terminous, Lodi South, Waterloo, Stockton East, Manteca, Lathrop, Union Island, and Holt quadrangles.
Rare Plant Rank 1B.1: rare, threatened, or endangered in California and elsewhere; seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
Rare Plant Rank 1B.2: rare, threatened, or endangered in California and elsewhere; fairly threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)
Rare Plant Rank 2B.1: rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
Rare Plant Rank 2B.2: rare, threatened, or endangered in California, but more common elsewhere; moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)
Rare Plant Rank 2B.3: rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)