April 2019
State Clearinghouse Number: 2018102008

ANCHOR QEA

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

DRAFT

Prepared for the Port of Stockton

1552089.1

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Final Environmental Impact Report

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Prepared for
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Project Number: 160377-01.06
1552089.1

Executive Summary

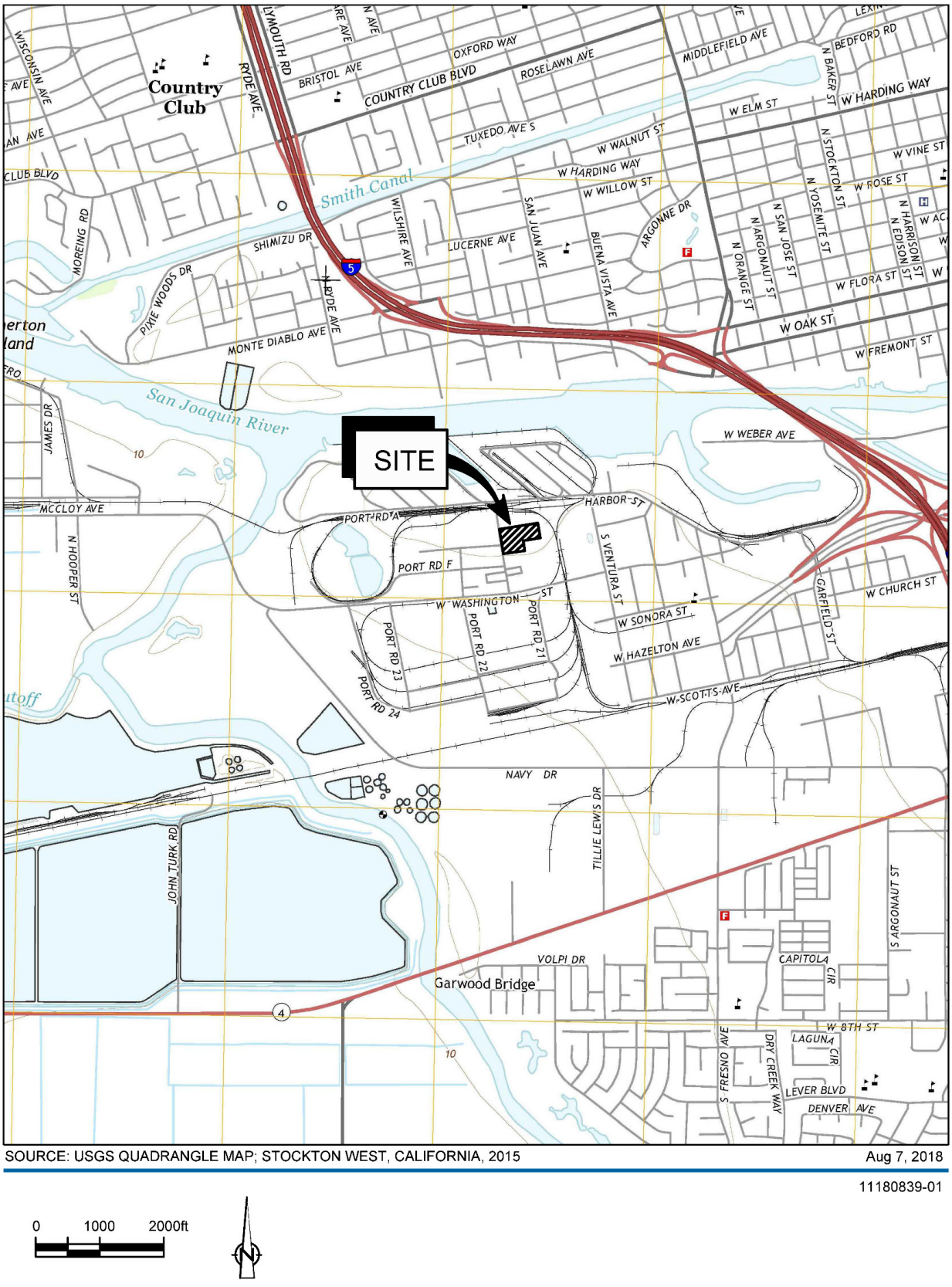
This Final Environmental Impact Report (FEIR) was prepared in compliance with the California Environmental Quality Act (CEQA; California Public Resources Code [PRC] Division 13, Section 21000, et seq.) and CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.) to assist the Port of Stockton (the 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 (Figure ES-1), in accordance with 22 CCR 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 (PRC Section 21151.1) and the CEQA Guidelines for Implementation (14 CCR 15081.5). Under Sections 15088 and 15132 of the CEQA Guidelines, an FEIR consists of the Draft Environmental Impact Report (DEIR); a list of commenters, as well as the verbal and written comments received on the DEIR; responses to comments on environmental issues received on the DEIR; and any information added to the document or any changes made to the text of the DEIR in response to comments. The FEIR contains an updated description of the proposed project in Chapter 1; a copy of responses to all comments on environmental issues received on the DEIR in Chapter 2; and a description of the CEQA Guideline updates that warrant revisions to the impact analyses, as well as a description of all changes made to the DEIR, in Chapter 3.

This FEIR will support the permitting process of all agencies whose discretionary approvals must be obtained for particular elements of the proposed project. The FEIR is intended to provide decision-makers and the public with the most up-to-date information available regarding the proposed project, required mitigation measures, and alternatives.

Proposed Project

The proposed project includes the development of 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

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0 1000 2000ft

Source: GHD 2018

ANCHOR QEA

Figure ES-1

Project Site and Vicinity

FinaLEnvironmental Impact Report

Contanda Renewable Diesel Bulk Liquid Terminal Development Project

The Port prepared this FEIR using available technical information and incorporating potential alternatives to the proposed project. As required by CEQA, the Port must evaluate the information in this FEIR, including the DEIR, all comments received during public review, 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 an EIR 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 the DEIR included the following:

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

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.

Comments Received

The DEIR was released and distributed on January 14, 2019, for a 45-day review period, which ended on February 27, 2019. Seventeen copies of the DEIR were distributed to various government agencies, organizations, and repositories. The DEIR includes a full analysis and an Executive Summary that summarizes the proposed project, alternatives, and findings. The DEIR is available at two publicly accessible repositories: the Port of Stockton (2201 West Washington Street, Stockton, California 95203); and the Cesar Chavez Central Library (605 North El Dorado Street, Stockton, California 95202).

The Port received one comment letter on the DEIR from Safe Fuel and Energy Resources California, Steven M. Dickinson, David Gracian, and Tim Knoeb (collectively "SAFER CA"). All comments and responses to comments are presented in Chapter 2 of the FEIR.

California Environmental Quality Act Guidelines 2018 Update

The State of California recently released revised the CEQA Guidelines and the Natural Resources Agency adopted final text, which was approved by the Office of Administrative Law and filed with the Secretary of State on December 28, 2018. The 2018 CEQA Guidelines Update provides direction on numerous issues, including streamlining, tiering, complex environmental document preparation, and climate change. Updated exemptions have been included for transit-centered residential and mixed-use development, along with clarifications to CEQA exemptions for existing facilities and emergencies. The revisions elaborate on the ideas of tiering, streamlining, and baseline conditions. Changes were also made to implement Senate Bill 743 traffic impact analysis, including guidance on Vehicle Miles Traveled screening thresholds, mitigation, and reduction. The new CEQA Guidelines also include some noteworthy changes to the Appendix G checklist, including two new sections on Energy and Wildfire, the consolidation of several checklist questions for clarity, and edits to other checklist questions to be consistent with recent case law. Appendix A of this FEIR includes a summary of how this EIR is consistent with the 2018 update.

Summary of Impacts and Mitigation Measures

Table ES-1 presents a summary of the environmental impacts of, proposed mitigation measures for, and residual impacts of the proposed project. Full descriptions of the mitigation measures noted in Table ES-1 are provided following the table.

The proposed project would result in significant and unavoidable air quality and greenhouse gas (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.

Summary of Cumulative Impacts

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

	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	MM-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	MM-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	MM-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	MM-GEO-1 MM-GEO-2	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	MM-GEO-1 MM-GEO-2	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

The following mitigation measures are included in the Mitigation Monitoring and Reporting Program (MMRP) that will be considered by the Port as part of the FEIR approval process:

- **MM-AQ-1: Truck Idling Reductions.** Contanda shall require bulk carrier trucks to minimize idling time to 2 minutes while on terminal. Idling restrictions would reduce on-terminal emissions by eliminating unnecessary combustion. Truckers would be required to shut down trucks while waiting over 2 minutes while on the terminal or Contanda would implement programs, such as appointment systems in periods of congestion, to ensure trucks move efficiently through the 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 with Contanda's customers.
- **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 San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (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.

- **MM-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 Code of Federal Regulations 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 the State Historic Preservation Officer Guidelines.
- **MM-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 or deep dynamic compaction, may be considered.

- **MM-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.

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ABBREVIATIONS

µg/m^3	micrograms per cubic meter
AB	Assembly Bill
ADF	Alternative Diesel Fuels
AQMP	Air Quality Management Plan
AST	aboveground storage tank
BAAQMD	Bay Area Air Quality Management District
BNSF	BNSF Railway
BPS	Best Performance Standard
CAA	Clean Air Act
CARB	California Air Resources Board
CCR	California Code of Regulations
CCT	Central California Traction Company
CEPC	California Environmental Policy Council
CEQA	California Environmental Quality Act
CI	carbon intensity
City	City of Stockton
Contanda	Contanda Terminals LLC
DEF	diesel exhaust fluid
DEIR	Draft Environmental Impact Report
DPM	diesel particulate matter
EIR	Environmental Impact Report
FEIR	Final Environmental Impact Report=
GHG	greenhouse gas
HI	hazard index
HRA	health risk assessment
IS/MND	Initial Study/Mitigated Negative Declaration
LCFS	Low Carbon Fuel Standard
MM	Mitigation Measure
mm Hg	millimeters of mercury
MSDS	Material Safety Data Sheet
NAAQS	national ambient air quality standard
NOP	Notice of Preparation
NO_x	nitrogen oxide
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
OGV	ocean-going vessel

PM	particulate matter
$PM_{2.5}$	PM less than 2.5 microns in diameter
PM_{10}	PM less than 10 microns in diameter
PMI	Point of Maximum Impact
Port	Port of Stockton
PRC	Public Resources Code
RAST	CARB Risk Assessment Standalone Tool
SIP	State Implementation Plan
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
UP	Union Pacific Railroad
USEPA	U.S. Environmental Protection Agency
VERA	Voluntary Emission Reduction Agreement
VOC	volatile organic compound

1 Introduction

1.1 Final Environmental Impact Report Purpose and Organization

This Final Environmental Impact Report (FEIR) was prepared in compliance with 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] 15000 et seq.) to assist the Port of Stockton (the Port) in considering the approval of the proposed Contanda Renewable Diesel Bulk Liquid Terminal Development Project (proposed project), located at Port Roads 11 and 13 and Port Roads G and H in Stockton, California, in accordance with 22 CCR 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.

1.1.1 FEIR Purpose

The purpose of an Environmental Impact Report (EIR) is to inform decision-makers and the general public of the potential environmental impacts resulting from a project, as well as the mitigation measures or alternatives that would avoid or minimize identified significant impacts. The Port has the principal responsibility for approving the proposed project and, as the CEQA lead agency, is responsible for the preparation and distribution of this FEIR pursuant to PRC Section 21067. The FEIR will be used will be used by the Port and other responsible agencies in conjunction with all approvals necessary for the implementation of the proposed project.

This document, in conjunction with the Draft Environmental Impact Report (DEIR), collectively constitutes the FEIR. As described in CEQA Guidelines Sections 15089, 15090, and 15132, the lead agency must prepare and consider the information contained in an FEIR before approving a project. Pursuant to CEQA Guidelines Section 15132, an FEIR comprises the following materials:

- The DEIR or a revision of the DEIR
- Comments and recommendations received on the DEIR
- A list of persons, organizations, and public agencies commenting on the DEIR

1.1.2 FEIR Organization

Chapter 1 presents background and introductory information for the proposed approval and implementation of the proposed project. Chapter 2 presents information regarding the distribution of and comments received on the DEIR as well as the responses to all comments received during the public comment period. Chapter 3 presents a description of modifications to the DEIR.

1.2 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.

1.3 Environmental Setting

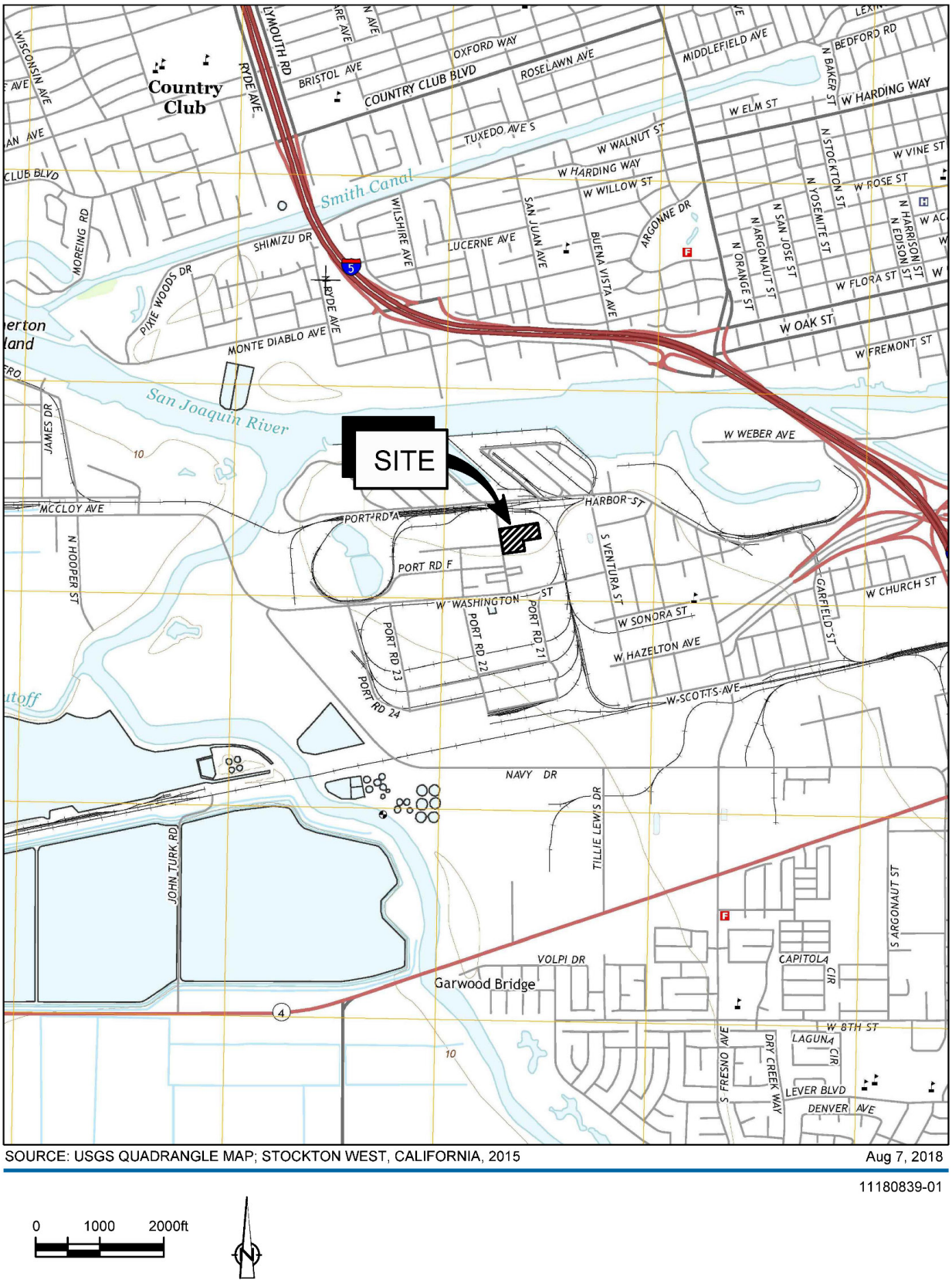
1.3.1 Regional Setting

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. 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[1] designates the project site for industrial use, and the zoning classification of the project site and surrounding parcels is Port District or Industrial, General.

1.3.2 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.

[1] City (City of Stockton), 2007. Stockton General Plan 2035 Background Report. December 2007. Available at: http://www.stocktongov.com/files/FinalBackgroundReport.pdf.



Source: GHD 2018

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Figure 1

Project Site and Vicinity

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

1.3.3 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 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 Initial Study/Mitigated Negative Declaration (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 were assessed in the DEIR.

1.3.4 Renewable Diesel and the Low Carbon Fuel Standard

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.

Renewable diesel imports to California are largely being driven by the state's climate change goals. 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, 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. 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.

Because renewable diesel burns more completely during the combustion process, tailpipe emissions are reduced. The California Environmental Protection Agency found that renewable diesel has about 30% less particulate matter (PM) emissions and 10% less nitrogen oxides (NO_X) than ultra-low sulfur diesel.[2] 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.[3]

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.

[2] CalEPA (California Environmental Protection Agency), 2015. *Staff Report: Multimedia Evaluation of Renewable Diesel*. May 2015. Available at: https://www.arb.ca.gov/fuels/diesel/altdiesel/20150521RD_StaffReport.pdf.
[3] CARB (California Air Resources Board), 2009. "Carbon Intensity Lookup Table for Gasoline and Fuels that Substitute for Gasoline." Available at: https://www.arb.ca.gov/fuels/lcfs/121409lcfs_lutables.pdf.

1.4 Project Overview

1.4.1 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

1.4.2 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 Notice of Preparation (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.

1.4.3 Proposed Project Construction

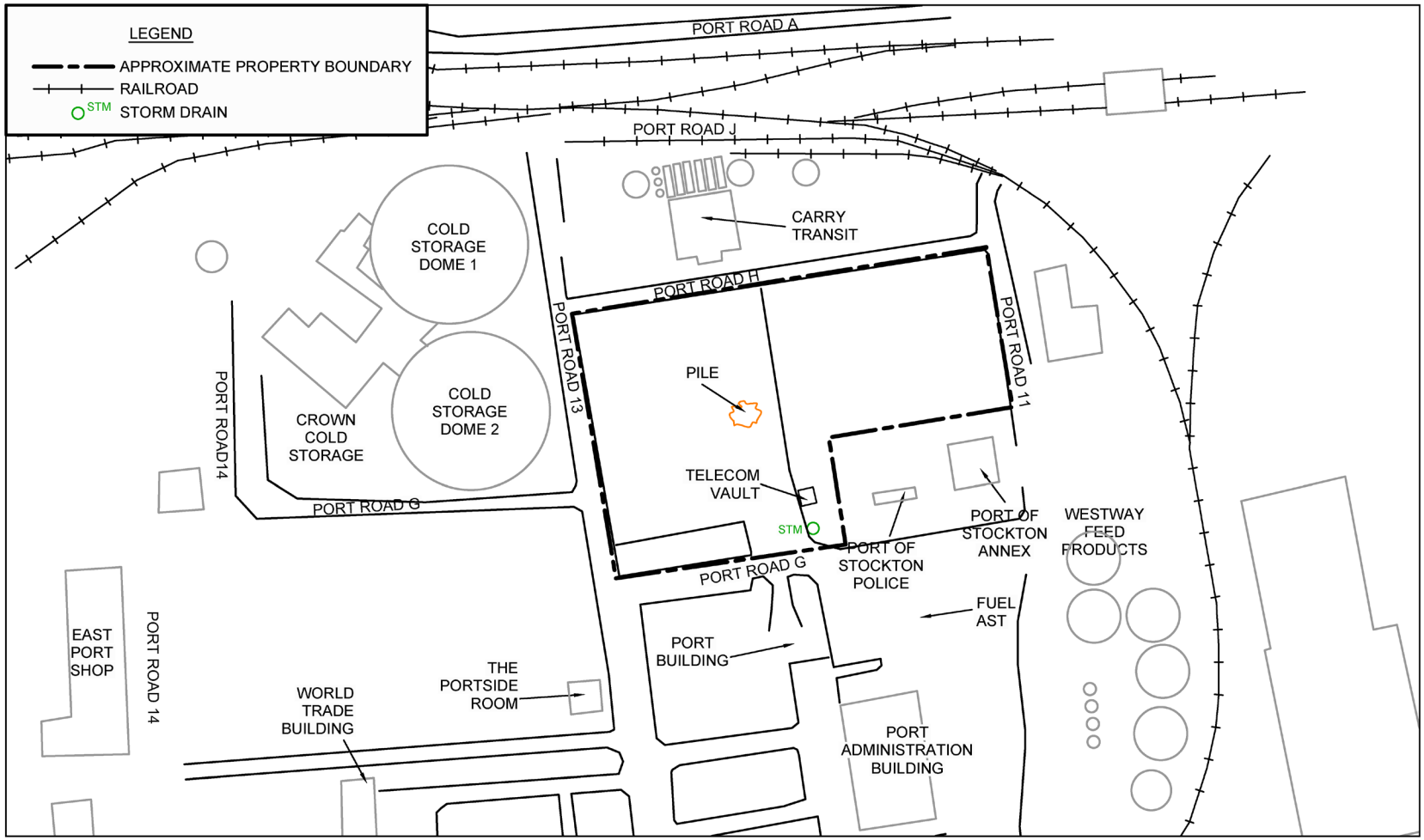
With the proposed project, Contanda would construct a total of 16 ASTs: 10 tanks with a maximum capacity of 20,000 barrels each and six tanks with a maximum capacity of 30,000 barrels each, all of which would require secondary containment. The 20,000-barrel tanks would be 60 feet in diameter by 50 feet 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 summarizes 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**

1.4.4 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[4] 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

[4] 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

1.4.4.1 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*.[5]

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.

1.5 Project Alternatives

TEQA's requirements for an EIR to evaluate alternatives 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. Therefore, alternatives generally have fewer environmental impacts than the proposed project by design. Pursuant to Section 15126.6(e)(2) of the CEQA Guidelines, an EIR must also include an analysis of a No Project Alternative. Sections 1.5.1 and 1.5.2 present brief descriptions of the alternatives to the proposed project that were carried forward for analysis in the DEIR.

[5] Port (Port of Stockton), 2009. *Port of Stockton Storm Water Development Standards Plan*. June 1, 2009.

1.5.1 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.

1.5.2 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
Vessel Calls	0

1.5.3 Comparison of Alternatives

Table 6 provides a summary comparison of the potential environmental impacts after implementation of mitigation measures resulting from the proposed project and alternatives relative to the topics analyzed in the DEIR. The No Project Alternative results in the least environmental impacts. However, the No Project Alternative does not meet any project objectives.

Table 7 presents a summary of the alternatives regarding their ability to meet the project objectives. As shown, only the proposed project meets all the project objectives, Because the Reduced Project would not support vessel calls, the Reduced Project Alternative does not meet the objective to provide a facility capable of accommodating domestically produced renewable diesel. The Reduced project meets the remaining two objectives, but to a lesser extent than the proposed project.

Table 6
Environmental Impacts of 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
Greenhouse Gas 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

Table 7
Ability of Alternatives to Meet Project Objectives

Objective	Proposed Project	Alternative 1: No Project	Alternative 2: Reduced Project
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	Meets objective	Does not meet objective	Does not meet objective.
• Receive and stage trucks for distribution of renewable diesel to the Northern California market	Meets objective	Does not meet objective	Meets objective to lesser extent than the proposed project
• 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	Meets objective	Does not meet objective	Meets objective to lesser extent than the proposed project

2 DEIR Comments and Responses

2.1 Draft Environmental Impact Report Distribution

The DEIR was released and distributed on January 14, 2019, for a 45-day review period, which ended on February 27, 2019. Seventeen copies of the DEIR were distributed to various government agencies, organizations, and repositories. The DEIR includes a full analysis and an Executive Summary that summarizes the proposed project, alternatives, and findings. The DEIR was available at the following two publicly accessible repositories (and is still available at these locations):

- The Port of Stockton (2201 West Washington Street, Stockton, California 95203)
- The Cesar Chavez Central Library (605 North El Dorado Street, Stockton, California 95202)

2.2 Comments on the Draft Environmental Impact Report

The Port received one comment letter on the DEIR from Adams Broadwell Joseph & Cardozo PC on behalf of Safe Fuel and Energy Resources California, Steven M. Dickinson, David Gracian, and Tim Knoeb (collectively "SAFER CA").

2.3 Response to Comments on the Draft Environmental Impact Report

In accordance with Section 15088 of the CEQA Guidelines, the Port has evaluated the comments on environmental issues received from interested parties and has prepared written responses to each comment pertinent to the adequacy of the environmental analyses contained in the DEIR. In addition, where appropriate, the basis for incorporating or not incorporating specific suggestions into the proposed project is provided. In each case, the Port has expended a good-faith effort, supported by reasoned analysis, to respond to comments

The comment letter from SAFER CA is provided in the following pages, followed by responses to each comment presented in Table 6.

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March 13, 2019

Via Email and Overnight Delivery

Jason Cashman, Port of Stockton Environmental and
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Via Email Only

Richard Aschieris, Port Director (raschieris@stocktonport.com)

Re: Preliminary Comments on the Draft Environmental Impact Report for Contanda Renewable Diesel Bulk Liquid Terminal Development Project (SCH No. 2018102008)

Dear Mr. Cashman, Mr. Aschieris:

On behalf of Safe Fuel and Energy Resources California, Steven M Dickinson, David Gracian, and Tim Knoeb (collectively, "SAFER CA"), we submit these preliminary comments regarding the Draft Environmental Impact Report ("DEIR") for the Contanda Renewable Diesel Bulk Liquid Terminal Development Project (SCH No. 2018102008) ("Project"), proposed by Contanda Terminals, LLC ("Contanda" or "Applicant"). Contanda proposes to develop a new bulk liquid terminal at the Port of Stockton ("Port") to receive, store, and transfer renewable diesel. The Project includes the construction of sixteen aboveground storage tanks ("ASTs") of varying capacity at a vacant parcel at the Port, along with construction of secondary containment, truck racks, and pumps and piping to transfer liquids between the new ASTs, berth, rail cars, and trucks.[1] Following construction, Contanda would receive renewable diesel by rail and vessels and

[1] DEIR, p. 9.

transfer it to ASTs for storage, then transfer the product from ASTs to trucks for deliveries to the local market.[2] The Project is proposed to operate for 20 years, and may operate longer of the Applicant's lease is further extended.[3]

AB-1

This letter contains the preliminary comments of SAFER CA and its technical consultant based on an initial review of the DEIR and a limited set of DEIR reference documents. As discussed below, the Port failed to provide SAFER CA with timely access to the DEIR reference documents, as required by the California Environmental Quality Act[4] ("CEQA"). The Port also refused SAFER CA's March 8, 2019 request to extend the public comment period to allow additional time to review DEIR reference documents that were provided just days before, including some documents as little as one day before, the end of the DEIR public comment period. The Port also withheld critical air pollution emissions data from disclosure, in violation of CEQA, the California Public Records Act, and the California Clean Air Act.[5] Due to the limited time provided for public comment and SAFER CA's limited access to documents underlying the DEIR's analysis, we have not had adequate time to fully review and comment on the DEIR. We reserve the right to supplement these comments at a later date, and at any and all later proceedings related to this Project.[6]

We have conducted our initial review of the DEIR and its technical appendices with the assistance of our technical consultant, air quality and hazardous resources expert Phyllis Fox, PhD, PE.[7] The attached expert comments require separate responses under CEQA.

---

[2] DEIR, p. 9.
[3] DEIR, p. 9 (as part of the proposed project, Contanda would enter into a 15-year lease with five 5-year extension options with the Port).
[4] Pub. Resources Code ("PRC") §§ 21000 et seq.; 14 Cal. Code Regs. ("CCR") §§ 15000 et seq.; PRC § 21092(b)(1); 14 CCR § 15087(c)(5).
[5] PRC § 21092(b)(1); 14 CCR § 15087(c)(5); Gov. Code §6254.7(a), (e) ("Nothwithstanding any other provision of law, all air pollution emission data, including those emission data which constitute trade secrets as defined in subdivision (d), are public records."); and Health and Safety Code §44346(h).
[6] Gov. Code § 65009(b); PRC § 21177(a); *Bakersfield Citizens for Local Control v. Bakersfield* ("*Bakersfield*") (2004) 124 Cal. App. 4th 1184, 1199-1203; see *Galante Vineyards v. Monterey Water Dist*. (1997) 60 Cal. App. 4th 1109, 1121.
[7] Dr. Fox's technical comments and curriculum vitae are attached hereto as Exhibit A.

AB-2

Based upon our initial review of the DEIR and reference documents, we conclude that the DEIR is substantially deficient and fails to fulfill its mandate under CEQA as an informational document in numerous ways. As explained more fully below, the DEIR fails to disclose the extent of the Project's potentially significant impacts on air quality and public health; fails to support its findings with substantial evidence; and fails to properly mitigate the Project's potentially significant air quality and public health impacts. The Port cannot approve the Project until the errors in the DEIR are remedied and a revised DEIR is circulated for public review and comment.

I. STATEMENT OF INTEREST

SAFER CA advocates for safe processes at California refineries and fuel transport and distribution facilities to protect the health, safety, standard of life and economic interests of its members. For this reason, SAFER CA has a strong interest in enforcing environmental laws, such as CEQA, which require the disclosure of potential environmental impacts of, and ensure safe operations and processes for, California's fuel production and transport projects. Failure to adequately address the environmental impacts of renewable or traditional fuel and other refinery product transport and refining processes poses a substantial threat to the environment, worker health, surrounding communities and the local economy.

Refineries and fuel transport and distribution facilities are uniquely dangerous and capable of generating significant fires and the emission of hazardous and toxic substances that adversely impact air quality, water quality, biological resources, and public health and safety. Absent adequate disclosure and mitigation of hazardous materials and processes, refinery and fuel terminal workers and surrounding communities may be subject to chronic health problems and the risk of bodily injury and death. Additionally, rail transport of fuel and other refinery products has been involved in major explosions, causing vast economic damage, significant emissions of air contaminants and carcinogens and, in some cases, severe injuries and fatalities.

SAFER CA supports the sustainable development of alternative fuel resources in California. However, poorly planned refinery and fuel distribution facility projects can adversely impact the economic wellbeing of people who perform construction and maintenance work in refineries, port terminals, fuel distribution

facilities, and the surrounding communities. Plant and terminal shutdowns caused by accidental toxic releases and infrastructure breakdowns have caused prolonged work stoppages. Such nuisance conditions and catastrophic events impact local communities and the natural environment, and can jeopardize future jobs by making it more difficult and more expensive for businesses to locate and people to live in the area. The participants in SAFER CA are also concerned about projects that carry serious environmental risks and public service infrastructure demands without providing countervailing employment and economic benefits to local workers and communities.

The members represented by the participants in SAFER CA live, work, recreate and raise their families in San Joaquin County, including the city of Stockton. Accordingly, these people would be directly affected by the Project's adverse environmental impacts. The members of SAFER CA's participating unions may also work on the Project itself. They will, therefore, be first in line to be exposed to any hazardous materials, air contaminants, and other health and safety hazards, that exist onsite.

These comments are also submitted on behalf of Stockton, California residents Steven M Dickinson, David Gracian, and Tim Knoeb, who live and works in the vicinity of the Project.

AB-3

II. LEGAL STANDARD

CEQA requires public agencies to analyze the potential environmental impacts of their proposed actions in an environmental impact report ("EIR") (except in certain limited circumstances).[8] The EIR is a critical informational document, the very heart of CEQA.[9] "The foremost principle in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language."[10]

CEQA has two primary purposes. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a

[8] See, e.g., PRC § 21100.
[9] *Dunn-Edwards v. BAAQMD* (1992) 9 Cal.App.4th 644, 652.
[10] *Comtys. for a Better Env' v. Cal. Res. Agency* (2002) 103 Cal. App.4th 98, 109 ("*CBE v. CRA*").

AB-3 cont.

project.[11] "Its purpose is to inform the public and its responsible officials of the environmental consequences of their decisions before they are made. Thus, the EIR 'protects not only the environment but also informed self-government.'"[12] The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return."[13] As the CEQA Guidelines explain, "[t]he EIR serves not only to protect the environment but also to demonstrate to the public that it is being protected."[14]

Second, CEQA requires public agencies to avoid or reduce environmental damage when "feasible" by requiring "environmentally superior" alternatives and all feasible mitigation measures.[15] The EIR serves to provide agencies and the public with information about the environmental impacts of a proposed project and to "identify ways that environmental damage can be avoided or significantly reduced."[16] If the project will have a significant effect on the environment, the agency may approve the project only if it finds that it has "eliminated or substantially lessened all significant effects on the environment where feasible" and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns."[17]

While the courts review an EIR using an "abuse of discretion" standard, "the reviewing court is not to 'uncritically rely on every study or analysis presented by a project proponent in support of its position. *A clearly inadequate or unsupported study is entitled to no judicial deference*."[18] As the courts have explained, "a

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[11] PRC § 21061; 14 CCR §§ 15002(a)(1); 15003(b)-(e); *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 517 ("the basic purpose of an EIR is to provide public agencies and the public in general with detailed information about the effect [that] a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project.").
[12] *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 564.
[13] *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs.* (2001) 91 Cal. App. 4th 1344, 1354 ("*Berkeley Jets*"); *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.
[14] 14 CCR § 15003(b).
[15] 14 CCR§ 15002(a)(2) and (3); *see also Berkeley Jets*, 91 Cal.App.4th at 1354; *Citizens of Goleta Valley*, 52 Cal.3d at 564.
[16] 14 CCR §15002(a)(2).
[17] PRC § 21081; 14 CCR § 15092(b)(2)(A) & (B).
[18] *Berkeley Jets*, 91 Cal. App. 4th 1344, 1355 (emphasis added), *quoting, Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 391 409, fn. 12.

AB-3 cont.

prejudicial abuse of discretion occurs "if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process."[19]

III. LACK OF TIMELY ACCESS TO DEIR REFERENCE DOCUMENTS AND POTENTIAL NEED TO SUBMIT FURTHER COMMENTS

AB-4

The Port violated CEQA and improperly truncated the DEIR public comment period by failing to make all documents referenced or relied on in the DEIR available for public review during the public comment period.[20] As a result, SAFER CA was unable to complete its review and analysis of the DEIR and its supporting evidence during the current public comment period. Our request for a further extension was denied. We therefore provide these initial comments on the DEIR and reserve our right to submit supplemental comments on the DEIR at a future date.

CEQA requires that "all documents referenced in the draft environmental impact report" be available for review and "readily accessible" during the entire comment period.[21] The courts have held that the failure to provide even a few pages of a an EIR for a portion of the CEQA public review period invalidates the entire CEQA process, and that such a failure must be remedied by permitting additional public comment.[22]

On February 6, 2019, we submitted a letter to the Port, pursuant to CEQA Section 21092(b)(1), requesting "***immediate access to any and all documents referenced or relied upon***" in the DEIR (emphasis added).[23] On February 8, 2019, the Port provided a partial response which included a handful of electronic

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[19] *Berkeley Jets*, 91 Cal.App.4th at 1355; *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 722; *Galante Vineyards v. Monterey Peninsula Water Management Dist*. (1997) 60 Cal.App.4th 1109, 1117; *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 946.
[20] *See* PRC § 21092(b)(1); 14 CCR § 15087(c)(5).
[21] PRC §§ 21092(b)(1) (emphasis added); 14 Cal. Code Regs. ("CCR") § 15072(g)(4).
[22] *Ultramar v. South Coast Air Quality Man. Dist*. (1993) 17 Cal.App.4th 689, 699.
[23] Letter from Adams, Broadwell, Joseph & Cardozo ("ABJC") re Request for Immediate Access to Documents Referenced in the Draft Environmental Impact Report and Public Records – Contanda Renewable Diesel Bulk Liquid Terminal Development Project (SCH No. 2018102008) (February 6, 2019).

AB-4 cont.

reference documents and files. However, the Port's response omitted dozens of documents and files that are referenced in the DEIR, including the air pollution emissions modeling files used in the DEIR's air quality analysis, and the entire set of reference documents identified in DEIR Chapter 7, "*References*," that were not accompanied by weblinks.

On February 22, 2019, we submitted a second letter to the Port requesting access to the outstanding DEIR reference documents. Our letter included a list of over 54 missing documents that had not been provided in response to our original request, and requested a 45-day extension of the DEIR public review and comment period once the outstanding reference documents were produced, as required by CEQA.[24] On February 26, 2019, the Port provided a further response which included electronic attachments, a few emails, a weblink to an FTP site containing additional DEIR reference documents, and extended the DEIR public comment period from February 27, 2019 to March 13, 2019 (14-day extension).[25] However, the Port's second document production remained incomplete. The short 14-day extension failed to provide SAFER CA with the requisite 45-day public comment period required by CEQA, or even a meaningful amount of time to review and comment on the DEIR prior to the comment deadline.

On March 6, 2019, just one week before the close of the comment period, the Port provided a third set of DEIR reference documents in response to our February 22, 2019 letter. The Port's third response included a few of the missing files that the Port had failed to include in its February 26, 2019 production, but still remained incomplete. In particular, the Port's response continued to omit the electronic air pollution emissions modeling files that SAFER CA had requested on February 6, 2019, a month earlier.

On March 8, 2019, we sent a third letter to the Port requesting immediate access to the outstanding DEIR reference documents that had not been provided.

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[24] See *Ultramar,* 17 Cal.App.4th at 699; Letter from ABJC re Request to Extend the Public Review and Comment Period for the Draft Environmental Impact Report and Public Records – Contanda Renewable Diesel Bulk Liquid Terminal Development Project (SCH No. 2018102008) (February 22, 2019).

[25] February 26, 2019 emails from Jason Cashman and Melissa Whitener re Request to Extend the Public Review and Comment Period for the Draft Environmental Impact Report and Public Records – Contanda Renewable Diesel Bulk Liquid Terminal Development Project (SCH No. 2018102008).

AB-4 cont.

Our letter requested, for a third time, the Port's electronic air pollution emissions modeling files that were used to calculate the Project's construction and operational emissions in the DEIR. On March 12, 2019, one day before the close of the public comment period, Port planner Mr. Cashman sent an email providing two additional missing documents, and, for the first time, asserting that the air pollution emissions modeling files were subject to trade secret privileges, and would not be provided. Mr. Cashman's March 12, 2019 email also advised SAFER CA that the Port refused to further extend the public comment period, despite its delayed and piecemealed production of DEIR reference documents that left SAFER CA with less than one day to consider the full set of reference materials received from the Port.

CEQA affords the public a right of access to the reference documents and supporting evidence that the lead agency is relying on to support the conclusions and findings in an EIR.[26] It is also well settled that an EIR may not rely on hidden studies or documents that are not provided to the public.[27] Access to the Project's DEIR reference materials is essential to SAFER CA and other members of the public's review and evaluation of the DEIR. Despite our month-long efforts to obtain "immediate access" to all materials referenced in the DEIR, the Port only granted us access to a portion of these materials, and in an untimely manner. The Port's responses were provided in a piecemealed fashion, in which responsive documents trickled in over a period of 34 days, at the end of which the Port denied SAFER CA's right to access some of the DEIR's most critical supporting materials for its air quality analysis. The Port's actions flout CEQA's disclosure requirements, and have resulted in a violation of SAFER CA's due process rights.[28]

[26] PRC § 21092(b)(1); 14 CCR § 15087(c)(5).
[27] *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3rd 818, 831 ("Whatever is required to be considered in an EIR must be in that formal report; what any official might have known from other writings or oral presentations cannot supply what is lacking in the report.").
[28] *Id.*; Gov. Code § 6253(a) (requires public records to be "open to inspection at all times during the office hours of the state or local agency" and provides that "every person has a right to inspect any public record.").

A. Emissions Modeling Files Used to Support the DEIR's Air Quality Analysis are Not "Confidential Business Information" or Trade Secrets.

AB-5

The Port's refusal to provide access to the DEIR's air pollution emissions modeling files is also a violation of the Public Records Act and California Clean Air Act. The Port's March 12, 2019 email to the undersigned asserted that the electronic emissions modeling files that are referenced in DEIR's Air Quality section and Appendix E, Air Quality and Greenhouse Gas Report, "constitute confidential business information and trade secrets, as defined in Civil Code section 3426.1, subd. (d), and are therefore not subject to disclosure under the CPRA [California Public Records Act]."[29] The Port's email also stated that emissions modeling files "are not in the actual or constructive possession of the Port."[30] As discussed below, the Port's first assertion is legally incorrect. And if the Port's second assertion is true, then it constitutes an admission that the Port lacks substantial evidence to support the DEIR's conclusions regarding the Project's air quality and related public health impact impacts.

The requested emissions data is not exempt from disclosure under the California Public Records Act or any other state law.[31] The Public Records Act states that "all information, analyses, plans, or specifications that disclose the nature, extent, ***quantity or degree of air contaminants*** or other pollution which any article, machine, equipment or other contrivance will produce, which any . . . air pollution management district [. . .] requires any applicant to provide before the applicant [. . .] operates, sells, rents or uses the article, machine, equipment, or other contrivance, ***are public records***."[32] The Public Records Act further states, "Nothwithstanding any other provision of law, all ***air pollution emission data***, including those emission data which constitute trade secrets as defined in

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[29] See **Exhibit B,** March 12, 2019 email from J. Cashman to C. Caro re Contanda Third Request for DEIR reference documents and extension.
[30] *Id*.
[31] See Gov. Code § 6254 (enumerated PRA exemptions – emissions data not listed); *Marken v. Santa Monica-Malibu Unified School Dist.* (2012) 202 Cal. App. 4th 1250 (statutory exemptions from mandatory disclosure under PRA must be narrowly construed where they limit the public's right to access); *Center Citizens for Ceres v. Super. Ct.*, 2013 Cal. App. LEXIS 532 (Cal. Ct. App. 5th, July 8, 2013) (agency cannot claim work-product or atty-client privileges for any communications with an applicant made before project approval).
[32] Gov. Code §6254.7(a).

subdivision (d), ***are public records***."[33] The Health and Safety Code further states that "all information collected pursuant to this chapter . . . shall be considered 'air pollution emission data,' for the purposes of this section."[34]

AB-6

Here, the Project would occur in the northern portion of the San Joaquin Valley Air Basin ("SJVAB"), within the jurisdiction of the San Joaquin Valley Air Pollution Control District ("SJVAPCD").[35] 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. Specific to project construction emissions, CEQA requires mitigation of air quality impacts that exceed certain significance thresholds set by the local air district. The DEIR explains that SJVAPCD's CEQA significance thresholds are applicable to the Project, along with SJVAPCD Rules 4624 and 4632.[36] The DEIR's emissions data is thus being used to assert that the Project complies with SJVAPCD emissions limits, SJVAPCD's CEQA thresholds, and SJVAPCD rules related to localized emissions sources.[37] The emissions data sought by SAFER CA clearly would "disclose the nature, extent, quantity or degree of air contaminants or other pollution which [the facility] will produce" within the meaning of the California Public Records Act and California Clean Air Act.[38] Therefore, it is clear under state law that the requested emissions records are not subject to trade secret protection, and are subject to disclosure under the Public Records Act pursuant to Gov. Code sections 6254.7(a) and (e), regardless of whether the files do, or do not, constitute "trade secrets."

AB-7

SAFER CA again requests that the Port comply with CEQA, the Public Records Act, and the California Clean Air Act and produce the DEIR emissions modeling files requested by SAFER CA for public review. SAFER CA reserves the right to file supplemental DEIR comments upon receipt of those files.

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[33] Gov. Code §6254.7(e).
[34] Health and Safety Code § 44346(h).
[35] DEIR, p. 21.
[36] DEIR, p. 30.
[37] DEIR, pp. 23-26,
[38] Gov. Code §6254.7(a).

IV. THE DEIR FAILS TO ADEQUATELY DISCLOSE, ANALYZE, AND MITIGATE POTENTIALLY SIGNIFICANT AIR QUALITY AND PUBLIC HEALTH IMPACTS

AB-8

An EIR must fully disclose all potentially significant impacts of a Project, and implement all feasible mitigation to reduce those impacts to less than significant levels. The lead agency's significance determination with regard to each impact must be supported by accurate scientific and factual data.[39] An agency cannot conclude that an impact is less than significant unless it produces rigorous analysis and concrete substantial evidence justifying the finding.[40]

These standards apply to an EIR's analysis of air quality and public health impacts of a Project. The California Supreme Court recently affirmed CEQA's mandate to protect public health and safety by holding that an EIR fails as an informational document when it fails to disclose the public health impacts from air pollutants that would be generated by a development project.[41] In *Sierra Club*, the Supreme Court held that the EIR for the Friant Ranch Project - a 942-acre master-planned, mixed-use development with 2,500 senior residential units, 250,000 square feet of commercial space, and open space on former agricultural land in north central Fresno County - was deficient as a matter of law in its informational discussion of air quality impacts as they connect to adverse human health effects.[42] As the Court explained, "a sufficient discussion of significant impacts requires not merely a determination of whether an impact is significant, but some effort to explain the nature and magnitude of the impact."[43] The Court concluded that the County's EIR was inadequate for failing to disclose the nature and extent of public health impacts caused by the Project's air pollution. As the Court explained, the EIR failed to comply with CEQA because, "after reading the EIR[], the public would have no idea of the health consequences that result when more pollutants are added to a nonattainment basin."[44]

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[39] 14 CCR § 15064(b).
[40] *Kings Cty. Farm Bur. v. Hanford* (1990) 221 Cal.App.3d 692, 732.
[41] *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502.
[42] *Sierra Club*, 6 Cal.5th at 516.
[43] 6 Cal.5th at 523, citing *Cleveland National Forest*, 3 Cal.5th at 514–515.
[44] 6 Cal.5th at 523-524. CEQA's statutory scheme and legislative intent also include an express mandate that agencies consider and analyze human health impacts, acknowledges that human beings are an integral part of the "environment", and mandates that public agencies determine whether a the "***environmental effects of a project will cause substantial <u>adverse effects on</u>***

AB-8 cont.

In *Berkeley Jets*, the Court of Appeal held that an EIR must analyze the impacts from human exposure to toxic substances.[45] In *Berkeley Jets*, the Port of Oakland approved a development plan for the Oakland International Airport. The EIR admitted that the Project would result in an increase in the release of toxic air contaminants ("TACs"), and adopted mitigation measures to reduce TAC emissions, but failed to quantify the severity of the Project's impacts on human health.[46] The Court held that mitigation alone was insufficient, and that the Port had a duty to analyze the health risks associated with exposure to TACs.[47] As the CEQA Guidelines explain, "[t]he EIR serves not only to protect the environment but also to demonstrate to the public that it is being protected."[48]

AB-9

The failure to provide information required by CEQA is a failure to proceed in the manner required by CEQA.[49] Challenges to an agency's failure to proceed in the manner required by CEQA, such as the failure to address a subject required to be covered in an EIR or to disclose information about a project's environmental effects or alternatives, are subject to a less deferential standard than challenges to an agency's factual conclusions.[50] In reviewing challenges to an agency's approval of an EIR based on a lack of substantial evidence, the court will 'determine de novo whether the agency has employed the correct procedures, scrupulously enforcing all legislatively mandated CEQA requirements.'[51]

Even when the substantial evidence standard is applicable to agency decisions to certify an EIR and approve a project, reviewing courts will not 'uncritically rely on every study or analysis presented by a project proponent in

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human beings, either directly or indirectly," PRC § 21083(b)(3), (d) (emphasis added), and to "take immediate steps to identify any critical thresholds for the ***health and safety of the people*** of the state and take all coordinated actions necessary to prevent such thresholds being reached." See PRC §21000 et seq. (emphasis added).

[45] 91 Cal.App.4th 1344, 1369.

[46] *Id*. at 1364.

[47] *Id.*

[48] 14 CCR § 15003(b).

[49] *Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236.

[50] *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435.

[51] *Id., Madera Oversight Coal., Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102.

support of its position. A clearly inadequate or unsupported study is entitled to no judicial deference.'"[52]

A. The DEIR's Emissions Calculations are Unsupported.

AB-10

The DEIR's air quality and health risk assessment analyses depend on criteria pollutant and hazardous air pollutant ("HAP") emissions from a variety of sources, including truck transit, onsite truck idling, line haul locomotives, switcher locomotives, oceangoing vessels ("OGVs") at berth, OGVs in transit, tugboats in transit, and tugboats at berth.[53] As explained above, and in Dr. Fox's comments, the DEIR's conclusions regarding emissions generated by these emissions sources are wholly unsupported because the DEIR fails to include (and the Port either fails to possess or refuses to disclose) the underlying modeling files and calculations used to prepare the DEIR's air quality analysis.

As Dr. Fox explains, Project emissions must be estimated from activity data (e.g., number of trips), engine model (e.g., Tier 1, 2), and emission factors (e.g., grams per gallon of fuel). These emission estimates involve complex Excel spreadsheet calculations, which are required to be provided to the public upon request so that reviewers can evaluate the accuracy of the estimates.[54] The Port failed to provide these calculations to SAFER CA or other members of the public.

AB-11

Dr. Fox's review of the DEIR's air quality and health risk modeling discloses that the DEIR incorporates numerous emissions assumptions that do not apply to the Project or that require additional mitigation measures and enforceable conditions to assure implementation. These errors and omissions, discussed below and in Dr. Fox's comments, disclose significant air quality and health impacts that were not identified in the DEIR, and which require recirculation. As a result, the DEIR's air quality analysis and conclusions remain unsupported by any substantial evidence.

AB-12

B. The Project's Emissions Are Underestimated.

The DEIR substantially underestimated the Project's emissions by omitting numerous emissions onsite emissions sources and offsite emissions sources that

[52] *Berkeley Jets*, 91 Cal.App.4th at 1355.
[53] See DEIR, p. 32; Appendix B: Emission Calculation Tables; Appendix E: Air Quality and Greenhouse Gas Report.
[54] Fox Comments, p. 4.

AB-12 cont.

occur outside of the SJVAPCD. As Dr. Fox explains, these omissions result in significant underestimations of air quality, greenhouse gases, and health impacts beyond those disclosed in the DEIR.[55] The Port's failure to include all emission sources in the DEIR's air quality and health risk assessment requires that a revised DEIR be prepared and recirculated for public review

1. <u>The DEIR Omits Onsite Emissions Sources.</u>

AB-13

The DEIR omits potentially significant emissions from the transport of the Project's renewable diesel fuel, including emissions from both rail car unloading and truck loading.

The Project includes 3,600 rail car visits per year.[56] Dr. Fox explains that the DEIR omitted ROG emissions from unloading of railcars, including from fugitive components (PRVs, pressure relief vents, manways, bottom and top fittings), connecting and disconnecting railcars to the loading rack, and sumps that collect spills and predictable drips during railcar unloading.[57] The DEIR states that the imported renewable diesel received at the Project site would be loaded into trucks and transported to markets in Northern California.[58] Dr. Fox further explains that the DEIR omitted ROG emissions that are commonly released during truck loading, including from drips, hose disconnects, and sumps that collect fuel spills. As a result of these omissions, Dr. Fox concludes that the DEIR substantially underestimated emissions associated with the Project's inbound rail car shipments of renewable diesel and subsequent outbound truck trips.

2. <u>The DEIR Omits Offsite Project Emissions Occurring Outside the SJVAPCD</u>.

AB-14

The DEIR explains that the Project would receive shipments of renewable diesel via inbound trains from Union Pacific and BNSF Railway, and from vessels

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[55] Fox Comments, pp. 4-9. Due to inadequate review time and lack of supporting documents, we were unable to provide estimates for the missing emission sources. SAFER CA reserves the right to submit supplemental comments and perform independent emissions estimates to further analyze the Project's emissions.
[56] DEIR, Table 4, pdf 35.
[57] Fox Comments, p. 4.
[58] DEIR, p. 12.
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AB-14 cont.

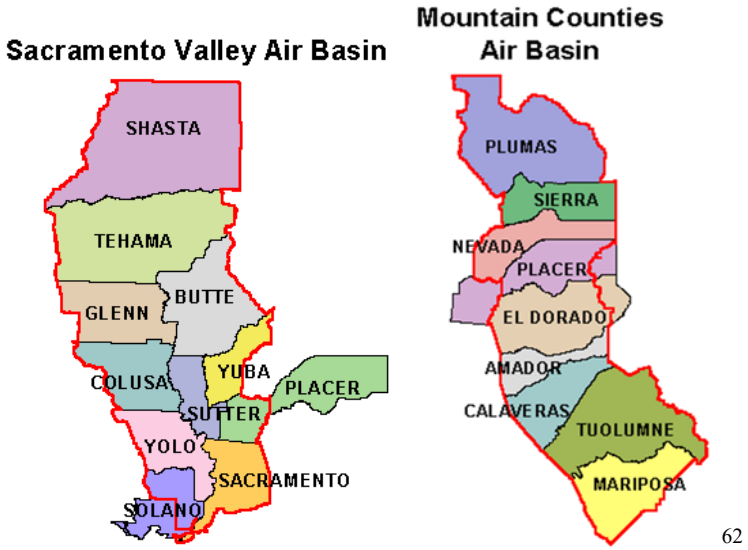
berthed at the Port's Wharf 8. The trains would originate from various production facilities located throughout the United States, would be offloaded at the Contanda Port Road A site, and then transferred to the Project site via a new pipeline.[59] The imported renewable diesel would then be loaded onto trucks and transported to customers in various locations in Northern California.[60]

The DEIR estimated emissions that occur within the boundary of the SJVAPCD, where the Project site is located, but failed to estimate any rail, truck, or vessel emissions that will occur outside the SJVAPCD during the Project's fuel transit operations. Dr. Fox identifies six key emissions factors that will occur outside of the SJVAPCD's jurisdiction, but which were completely excluded from the DEIR's analysis, including: (1) emissions from trucks in transit, (2) emissions from oceangoing vessels, (3) emissions from trains in transit, (4) locomotive emissions, (5) rail car evaporative emissions, (6) ambient air quality impacts.[61] As a result, the DEIR's air quality analysis is significantly flawed and incomplete.

As Dr. Fox explains, the majority of the Project's emissions will be from truck, rail, and ship transport, all of which will pass through up to 20 other air basins, each under the jurisdiction of a different air district, as illustrated below:

[59] DEIR, p. 32, pdf 51 and Appendix E, Sec. 3.1.3.3, pdf 51.
[60] *Id.*; DEIR, p. 12.
[61] Fox Comments, pp. 5-9.

Air Basins Affected by the Project



62

AB-14 cont

Because the DEIR only evaluated emissions from the Project site to the SJVAPCD boundary, or 15 miles for OGVs and 88 miles, one way, for trucks,[63] Dr. Fox concludes that the DEIR fails entirely to disclose or mitigate the emissions resulting from the Project that will occur outside the San Joaquin Air Basin. The DEIR also fails to identify key facts contributing to the nature and extent of emissions, including the source(s) and destination(s) of the product, the route(s) that the trains would take to the Terminal, the destination of the renewable diesel, or the miles traveled in any location other than the hosting air district.[64] These are serious omissions.[65]

Emissions resulting from the Project that occur anywhere in California must be similarly quantified and evaluated, including emissions generated by the transport of materials used during Project construction and operation, and by the outgoing transport of renewable diesel fuel from the Project site outside the hosting air district. The DEIR must be revised and recirculated to disclose Project emissions from all sources within the State.

[62] Fox Comments, p. 8.
[63] DEIR, Table 4, pdf 243.
[64] Fox Comments, p. 5.
[65] *Id.*

C. The DEIR Fails to Require All Feasible Mitigation Measures to Reduce Air Quality Impacts to the Greatest Extent Feasible.

AB-15

The DEIR concluded that Project operation within the SJVAPCD would result in significant air quality impacts, including: (1) conflicting with and/or obstructing implementation of air quality control plans (AQ-1);[66] (2) annual operational emissions of NOx exceeding 19 ton/yr (AQ-2);[67] and (3) a cumulatively considerable net increase in NOx.[68] To mitigate these significant impacts, the DEIR proposes only two mitigation measures—truck idling reductions (MM-AQ-1) and the use of clean trucks (MM-AQ-2)—concluding that emissions would remain significant after mitigation because NOx emissions largely originate from locomotives and trucks that are not within Contanda's power to mitigate.[69] No mitigation is proposed for the significant cumulative NOx impacts. The DEIR concludes that these impacts remain significant after this mitigation. Therefore the DEIR must implement additional mitigation to reduce the Project's air quality impacts to less than significant levels.[70]

Dr. Fox explains that there is additional, feasible mitigation available to reduce the Project's air quality impacts to less than significant levels. Dr. Fox explains that the Project's significant NOx emissions could be fully mitigated using Voluntary Emission Reduction Agreements ("VERAs").[71] The SJVAPCD uses VERAs to address mitigation requirements under CEQA. Under a VERA, the developer (in this case Contanda) would be required to fully mitigate project emission impacts by providing funds to the SJVAPCD. The funds are then used by SJVAPCD to administer emission reduction projects on behalf of the developer. These agreements are incorporated into the SJVAPCD's CEQA Guidelines.[72]

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[66] DEIR, pp. 32-33, pdf 51-52.
[67] DEIR, Table 13, pdf 53-54.
[68] DEIR, p. 37, pdf 56.
[69] DEIR, p. 33-37, pdf 52-56.
[70] PRC §§ 21002.1(a), 21100(b)(3).
[71] Fox Comments, p. 13.
[72] See SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts, March 19, 2015, available at https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwjrvLG3hIDhAhWFMH0KHV8nBFcQFjAAegQIChAC&url=http%3A%2F%2Fwww.valleyair.org%2Ftransportation%2FGAMAQI_3-19-15.pdf&usg=AOvVaw3oG7uHuccUqo4EC-ZrXiK_.

AB-15 cont.

In this case, because the Project will cause excess NOx emissions in numerous air districts, Dr. Fox explains that implementation of a VERA by SJVAPCD would likely require Contanda to make a one-time payment for its ROG and NOx emissions in excess of significance thresholds to each affected air district.[73] The SJVUAPCD has found that the cost for NOx reductions is $8,123 per ton.[74] Thus, Dr. Fox concludes that the cost of a feasible VERA could be easily calculated based on the Project's (accurately calculated) projected NOx emissions.[75]

The Port should require use a VERA as binding mitigation to reduce the Project's significant and unavoidable air quality impacts.

D. The Project is Likely to Cause Significant Health Risks from Human Exposure to Toxic Air Contaminants Released During Project Construction and Operation that the DEIR Fails to Disclose and Mitigate.

AB-16

The DEIR includes a health risk assessment ("HRA") that was used to estimate potential cancer and chronic non-cancer health impacts from exposure to toxic air contaminants ("TACs") during Project construction and operation.[76] Dr. Fox reviewed the HRA, and concludes that it failed to follow accepted regulatory protocol for estimating health risks, and relies on inaccurate and underreported Project emissions to calculate the Project's related TAC emissions. As a result, the HRA fails to accurately disclose or mitigate potentially significant health impacts at critical sensitive receptors. The DEIR's conclusion that health risks are less than significant is therefore inaccurate and unsupported.

First, the DEIR asserts that the HRA was conducted in accordance with SJVAPCD HRA guidance (SJVAPCD 2018) and the Office of Environmental Health

[73] Fox Comments, p. 13.
[74] SJVAPCD 2017, Table 3, pdf 11.
[75] Fox Comments, p. 13.
[76] DEIR, Appendix E, Air Quality and Greenhouse Gas Report, Section 3. Health Risk Assessment, pdf 244-296.

AB-16

Hazard Assessment ("OEHHA") Guidance,[77] using US EPA's AERMOD dispersion model and CARB's Hotspots Analysis Reporting Program ("HARP"), and the Risk Assessment Standalone Tool ("RAST").[78] Dr. Fox reviewed the DEIR's HRA, and concludes that it did not follow OEHHA guidance and did not properly use HARP or RAST. For example, as Dr. Fox explains, the Port produced selected modeling files[79] which stated that AERMOD was run using a grid with over 1,000 receptors. However, Dr. Fox's review of the risk calculations reported in the DEIR's modeling files and the DEIR do not match this statement. Instead, the DEIR discloses that the health risk calculations were performed for just a single reference point. As Dr. Fox explains, this error resulted in the HRA's omission of many of the locations and sensitive receptors that are likely to be impacted by the Project's TAC emissions.[80]

AB-17

Second, as discussed above, the Project's overall air emissions were underestimated. This resulted in a corresponding underestimation of TAC emissions. Dr. Fox identified additional inaccuracies in the HRA's emissions factors, including unsupported assumptions that included restricted hours of Project operation to avoid periods when ambient concentrations of TACs are the highest, and unsubstantiated modifications to emissions source locations that were inconsistent with information included in the DEIR.[81] Dr. Fox opines that these unexplained changes in the HRA's emissions factors may have been made to avoid disclosing health impacts in residential areas.[82] These, and other factual assumptions made in the HRA, are not supported by any substantial evidence in the DEIR. The HRA's conclusion that the Project's health risk is less than significant is therefore similarly unsupported.

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[77] Office of Environmental Health Hazard Assessment (OEHHA), Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments, February 2015; available at https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
[78] DEIR, Appendix E, pdf 244.
[79] The modeling files produced by the Port included only a limited subset of the air pollution emissions modeling data requested by SAFER CA.
[80] Fox Comments, p. 16.
[81] Fox Comments, pp. 13-17.
[82] *Id*. at p. 16.

1. **Updated Health Risk Analysis Discloses Significant Residential Cancer Risk.**

AB-18

Dr. Fox prepared a revised health risk analysis using recommended agency protocols, corrected emissions factors, and updated modeling assumptions using the Project description contained in the DEIR. Dr. Fox's revised analysis assumes switcher DPM emissions of 208.7 lb/yr (instead of 54.7 lb/yr, modeled in the DEIR) that occur around the clock, and switcher and truck routes adjacent to residential areas, but otherwise retained the DEIR's assumptions.[83]

When modeled correctly, Dr. Fox concludes that the Project's TAC emissions are likely to result in significant health risks from increased residential cancer risk that are not disclosed or mitigated in the DEIR, as follows:

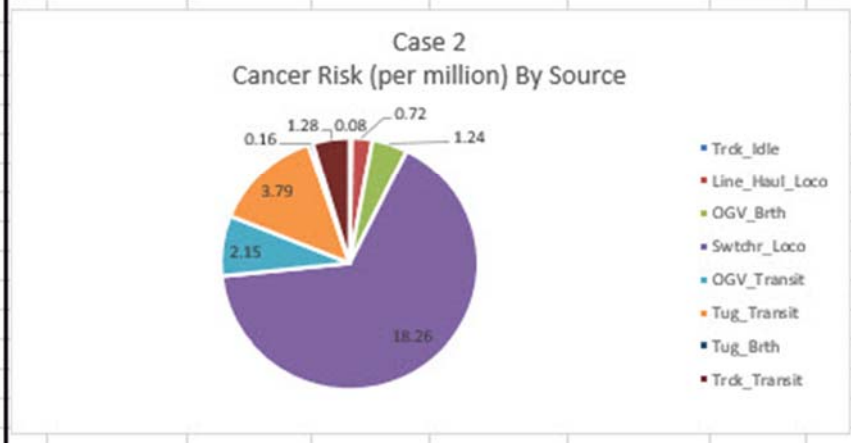
[83] Fox Comments, p. 33.

Revised Health Risk Assessment

AB-18 cont

Case 2

Source	lbs/yr DPM	Risk	Risk/Million	Plotted
Trck_Idle	1.7	7.5502E-08	0.0755	0.08
Line_Haul_Loc	8.5	7.1551E-07	0.7155	0.72
OGV_Brth	348.8	1.2389E-06	1.2389	1.24
Swtchr_Loco	208.7	1.8257E-05	18.2570	18.26
OGV_Transit	76.4	2.1478E-06	2.1478	2.15
Tug_Transit	75.6	3.7876E-06	3.7876	3.79
Tug_Brth	13.4	1.5694E-07	0.1569	0.16
Trck_Transit	10.5	1.2835E-06	1.2835	1.28
	743.6	2.766E-05		27.66



Dr. Fox's health risk analysis demonstrates that the 30-year cancer risk at the nearest home (receptor #269) is 27.7 per million, compared to the DEIR's cancer significance threshold of 20 per million.[84] Thus, residential cancer risks are significant.

[84] Fox Comments, p. 34; DEIR, p. 37 (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 is significant impact).

2. <u>Acute Health Risks Are Significant.</u>

AB-19

The HRA asserts that the proposed Project would not result in significant "acute health hazards," relying on DEIR, Appendix E, Table 15, for this conclusion. However, a review of Table 15 demonstrates that it does not report the results of an acute health impact analysis at all.[85] The DEIR elsewhere claims that the Port could not analyze acute health hazards because an acute Hazard Index, which evaluates the probability of TACs to cause adverse health effects due to short-term exposure, was not quantified for the Project because the chief pollutant of concern is DPM, for which OEHHA has not established an acute reference exposure level ("REL").[86]

Dr. Fox explains that the absence of an OEHHA acute risk exposure level does not excuse the Applicant from evaluating acute health risks. Dr. Fox explains that the significance of acute exposures *is* generally assessed using the Hazard Index approach. A Hazard Index is calculated as sum of the ratio of the calculated 1-hour concentrations for each HAP, divided by their respective reference exposure level, in this case 10 g/m3.[87] The SJVAPCD significance threshold for acute exposures is a hazard index of 1 for the maximally exposed individual.[88]

Using this approach, Dr. Fox conducted an acute risk assessment for Project construction, using the DEIR's DPM emission rate (366 lb/yr) and assuming construction between 8 AM and 4 PM.[89] Dr. Fox's analysis found that significant acute health impacts (HI=/>1; DPM concentration =/> 10 μg/m^3) occur within 35 meters to the south and 80 meters to the west of the Project site boundary, in locations where workers would be found, including at the adjacent Contanda Terminal.[90] Dr. Fox conducted a similar acute risk assessment for Project operation using the Project's highest 25 1-hour DPM concentrations, which range from 232 to 344 μg/m^3. Dr. Fox found that all concentrations exceeded the acute REL of 10 μg/m_3 and a hazard index of 1 in both cases by a significant amount.[91] Thus, Dr,

[85] DEIR, Appendix E, Table 15; Fox Comments, p. 36.
[86] DEIR, Appendix E, pdf 245.
[87] Fox Comments, p. 36.
[88] *Id.*
[89] Dr. Fox Comments, p. 37.
[90] *Id.*
[91] Fox Comments, p. 37.

Fox concludes that the Project's acute health impacts to construction workers, Project users and residents, and adjacent receptors in the vicinity of the Project remain significant and unmitigated.[92]

The DEIR must be revised and recirculated to accurately disclose and mitigate these significant health risks.

V. CONCLUSION

AB-20

For all of the reasons discussed above, the DEIR for the Project remains wholly inadequate under CEQA. It must be thoroughly revised to provide analysis of, and mitigation for, all of the Project's significant impacts. These revisions will necessarily require that the DEIR be recirculated for public review. Until the DEIR has been revised and recirculated, as described herein, the Port may not lawfully approve the Project.

Thank you for your consideration of these comments. Please include them in the record of proceedings for the Project.

Sincerely,

Christina M. Caro

CMC:acp

Attachments

[92] *Id.* at pp. 37-38.

EXHIBIT A

Comments

on the

Draft Environmental Impact Report

for the

Contanda Renewable Diesel Bulk Liquid Terminal Development Project

Stockton, California

March 13, 2019

Phyllis Fox, PhD, PE

and

Environmental Permitting Specialists

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1. INTRODUCTION

AB-21

Contanda Terminals LLC (Contanda or the Applicant) proposes to develop a new bulk liquid terminal at the Port of Stockton, located within the San Joaquin Valley Air Pollution Control District (SJVAPCD or District). This terminal will receive, store, and transfer renewable diesel. Renewable diesel would be imported by rail and ship, transferred to aboveground storage tanks (ASTs), and transferred from the ASTs to trucks for deliveries to the local Northern California market. The Project also includes construction of secondary containment, truck racks, and pumps and piping to transfer the fuel between the new ASTs, vessels, rail cars, and trucks.

We reviewed the Draft Environmental Impact Report (DEIR) for this Project prepared by the Port of Stockton (Port),[1] the CEQA lead agency. The public review period granted by the Port is not adequate to review a document as technically complex as this DEIR. The Contanda DEIR consists of 471 pages of inadequately supported technical analysis plus many thousands of pages of supporting documents. The allotted review period, January 14, 2019 to March 13, 2019, contains 59 days, of which 14 are weekend days. Assuming a reviewer worked every workday of the review period, she/he would have to read 10 pages of dense technical material plus supporting references every single day to finish just the DEIR, leaving little time to critically evaluate and reverse engineer the many unsupported calculations in the appendices and then write comments. Few people could devote entire days to doing nothing but reading and analyzing this DEIR and even fewer are speed readers with the training to figure out how emissions were calculated without inputs, live electronic spreadsheets, supporting references, and equations to review.

The air quality, greenhouse gas, and health risk assessment analyses in the appendices supporting the conclusions in the DEIR attempt to address highly technical issues yet are poorly supported. Moreover, the Port refused to disclose the key emissions modeling data on which the DEIR relies for its air impact analyses and significance conclusions. The DEIR appendices also contain many inconsistencies, requiring the reviewer to sort through hundreds of pages of complex calculations and pdf versions of model inputs and outputs, using reverse engineering to deduce the DEIR's key impact assumptions which should have been clearly laid out for readers to understand. This is beyond the ability of average members of the public and even technical experts, especially without supporting electronic files and cited sources that were withheld by the Port and are not otherwise publicly available during the allotted 59 days.

We filed three document requests pursuant to the California Environmental Quality Act (CEQA) and California Public Record Act (PRA) for "immediate access to any and all documents referenced or relied upon" in the DEIR. We specifically requested the Port's electronic files relied upon in the DEIR to support the health risk, air quality, and GHG sections, in order to facilitate our review of these sections. However, the Port's responses repeatedly

[1] Anchor QEA, Contanda Renewable Diesel Bulk Liquid Terminal Development Project Draft Environmental Impact Report, State Clearinghouse Number: 2018102008, Prepared for the Port of Stockton, January 2019. No weblink.

AB-21 cont

omitted most of the key information, not otherwise publicly available, required to verify calculations in these sections. The Port specifically declined to provide electronic files,[2] a routine matter in hundreds of similar cases that we have worked on, thus further complicating the review of this DEIR.

Based on the available material and limited review time, in our opinion the DEIR is substantially deficient and does not fulfill its mandate as an informational document under CEQA to inform the public of potential impacts. It has omitted sources of emissions and underestimated others, thus underestimating air quality and public health impacts. It has further failed to require adequate mitigation for significant impacts that it did identify. Our analysis indicates that:

- Significant operational NOx emissions are not adequately mitigated.
- Air quality and public health impacts in adjacent air districts were not evaluated and are significant.
- Construction emissions are not adequately supported, are significantly underestimated, and are potentially significant.
- Operational cancer health risks are significant and unmitigated.
- Operational acute health impacts were not evaluated in the DEIR. They are highly significant at numerous work places, residences in the Seaport Neighborhood, and at the Washington Elementary School. These significant health impacts are unmitigated.
- Construction acute health risks were not evaluated in the DEIR and are significant at nearby commercial properties.
- Cumulative cancer and acute health impacts of Project construction and operation were not evaluated, are highly significant and unmitigated.
- The DEIR concluded that cumulative operational NOx emissions are significant but failed to require any mitigation.

In sum, in our opinion the DEIR is substantially deficient. My analysis below indicates that the Project will result in significant air quality and health impacts that have not been identified and/or mitigated. We recommend that the Port recirculate a revised DEIR that addresses the issues discussed below.

These comments were prepared by Dr. Fox, with modelling assistance from Environmental Permitting Specialists.[3] Dr. Fox's resume is included in Exhibit 1A to these Comments. The modeling analyses were prepared by Ray Kapahi at Environmental Permitting Specialists. Mr. Kapahi's resume is included in Exhibit 1B to these comments.

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[2] March 12, 2019, Email from J. Cashman, Port of Stockton, to C. Caro, Adams Broadwell, Joseph & Cardozo, re *Third Request for Access to Documents Referenced in the Draft Environmental Impact Report for Contanda Renewable Diesel Bulk Liquid Terminal Development Project (SCH No. 2018102008) and Second Request to Extend the Public Review and Comment Period.*

[3] epsconsulting.org.

AB-21 cont.

Dr. Fox has over 40 years of experience in the field of environmental engineering, including air emissions and air pollution control; greenhouse gas (GHG) emission inventory and control; water quality and water supply investigations; hazardous waste investigations; risk of upset modeling; environmental permitting; nuisance investigations (odor, noise); environmental impact reports (EIRs), including CEQA/NEPA documentation; risk assessments; and litigation support. She has MS and PhD degrees in environmental engineering from the University of California at Berkeley and is a licensed professional engineer in California.

She has prepared comments, responses to comments and sections of CEQA and NEPA documents on air quality, greenhouse gas emissions, water supply, water quality, hazardous waste, public health, risk assessment, worker health and safety, odor, risk of upset, noise, land use, traffic, and other areas for well over 500 CEQA and NEPA documents. This work includes EIRs, EISs, Initial Studies (ISs), Negative Declarations (NDs), and Mitigated Negative Declarations (MNDs). My work has been specifically cited in two published CEQA opinions: *Berkeley Keep Jets Over the Bay Committee, City of San Leandro, and City of Alameda et al. v. Board of Port Commissioners* (2001) 111 Cal. Rptr. 2d 598, and *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal. 4th 310; and has supported the record in many other CEQA and NEPA cases.

AB-22

2. THE DEIR FAILED TO SUPPORT EMISSION CALCULATIONS

The air quality and health risk assessment (HRA) analyses depend directly on criteria pollutant and hazardous air pollutant (HAP) emissions from truck transit, onsite truck idling, line haul locomotives, switcher locomotives, oceangoing vessels (OGVs) at berth, OGVs in transit, tugboats in transit, and tugboats at berth. The emission calculations in Appendix B: Emission Calculation Tables,[4] of Appendix E: Air Quality and Greenhouse Gas Report, are wholly unsupported.

Emissions are estimated from activity data (e.g., number of trips), engine model (e.g., Tier 1, 2), and emission factors (e.g., grams per gallon of fuel). The emission estimates involve complex Excel spreadsheet calculations. It is standard practice to supply the unlocked Excel spreadsheets and citations for all assumptions used in the calculations (e.g., emission factors, trip length, engine type) so that reviewers can evaluate the accuracy of the estimates. This DEIR failed to support the emission calculations that the air quality and health risk assessment relied upon. Further, in cases where we were able to reverse engineer the DEIR's calculations, we discovered many assumptions that do not apply to this Project or that require mitigation measures and enforceable conditions to assure implementation.

We filed three CEQA/PRA requests seeking this documentation.[5] In each case, the responsive information was not supplied. Ultimately, the Port refused to supply support for

[4] DEIR, Appendix B of Appendix E, pdf 255.

[5] See February 6, 2019, Letter from Adams, Broadwell, Joseph & Cardozo ("ABJC") re *Request for Immediate Access to Documents Referenced in the Draft Environmental Impact Report and Public Records – Contanda Renewable Diesel Bulk Liquid Terminal Development Project (SCH No. 2018102008)*; February 22, 2019, Letter from ABJC re *Request to Extend the Public Review and Comment Period for the Draft*

AB-22 cont.

the DEIR's emission calculations and health risk assessment. Thus, we calculated some of the emissions from scratch, using the few scanty hints provided in the DEIR, reverse engineered the DEIR's HRA, and prepared a new HRA from scratch, correcting the numerous errors, omissions, and deceptions we discovered in the emission calculations and HRA included in the DEIR. As discussed below, the errors and omissions that we discovered disclose significant air quality and health impacts that were not identified in the DEIR.

AB-23

3. THE DEIR OMITTED MANY EMISSION SOURCES

In this comment, we focus on the major sources of emissions that were entirely omitted from the DEIR. These omissions result in significant underestimates of air quality, greenhouse gases, and health impacts beyond those discussed elsewhere in these comments. Due to inadequate review time and lack of supporting documents, we were unable to provide estimates for the missing emission sources. The Port's failure to include all emission sources in the DEIR's air quality and health risk assessment requires that a revised DEIR be prepared and recirculated for public review.

3.1. The DEIR Omits Onsite Emission Sources

AB-24

3.1.1. Rail Car Unloading

The Project includes 3,600 rail car visits per year.[6] The DEIR omitted ROG emissions from unloading of railcars, including from fugitive components (PRVs, pressure relief vents, manways, bottom and top fittings), connecting and disconnecting railcars to the loading rack, and sumps that collect spills and predictable drips during railcar unloading.

The unloading rack is individually connected to each railcar, typically with drybreak connectors. When the loading rack is attached and disconnected from the rail cars, some of the product within the connector spills to the ground and evaporates, releasing ROG. The ROG emission drips from hooking up each railcar with the loading rack and disconnecting it can be calculated from the number of railcars per day, the average volume of spilled oil per disconnect (typically 3.2 mL), and the density of product, all of which are known.[7] The DEIR failed to estimate these emissions.

Environmental Impact Report and Public Records – Contanda Renewable Diesel Bulk Liquid Terminal Development Project (SCH No. 2018102008); March 8, 2019, *Third Request for Access to Documents Referenced in the Draft Environmental Impact Report for Contanda Renewable Diesel Bulk Liquid Terminal Development Project (SCH No. 2018102008) and Second Request to Extend the Public Review and Comment Period.*

[6] DEIR, Table 4, pdf 35.

[7] See, *e.g.*, typical calculation in: San Joaquin Valley Air Pollution Control District, Authority to Construct Application Review for the Bakersfield Crude Terminal, LLC, p. 4, July 25, 2012 (Exhibit 2).

AB-25

3.1.2. Truck Loading

The imported renewable diesel would be loaded into trucks and transported to markets in Northern California. The Project includes 17,456 truck visits per year.[8] ROG emissions are released during loading, including from drips, hose disconnects, and sumps that collect spills.

AB-26

3.2. The DEIR Omits Emissions Outside of the SJVAPCD

The DEIR only estimated emissions that occur within the boundary of the SJVAPCD, where the Project site is located.[9] However, CEQA applies to the entire state. Other EIRs that involve train and truck transport through multiple air districts analyze the impacts in each district.[10] Emissions resulting from the Project that occur anywhere in California must be similarly quantified and evaluated, including emissions generated by the transport of materials used during Project construction and operation, and the outgoing transport of renewable diesel fuel from the Project site, not just within the hosting air district.

The Project would receive shipments of renewable diesel 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, offloaded at the Contanda Port Road A site, and transferred to the Project site via a new pipeline.[11] The imported renewable diesel would be loaded onto trucks and transported to customers in Northern California.

The DEIR does not identify the source(s) and destination(s) of the product, the route(s) that the trains would take to the Terminal, the destination of the renewable diesel, or the miles traveled in any location other than the hosting air district. These are serious omissions.

The majority of the emissions are from truck, rail, and ship transport, all of which will pass through other air districts. The DEIR only evaluated emissions from the Project site to the SJVAPCD boundary, or 15 miles for OGVs and 88 miles, one way, for trucks.[12] The 88-mile estimate is the average of the distance north (30 mi), south (266 mi), east (26 miles), and west (30 miles) along major freeways.[13] Similarly, for line-haul fuel usage emissions, the major source of rail emissions, the DEIR only evaluated the average of the northern (126 mi) and southern (13

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[8] DEIR, Table 4, pdf 35.

[9] See, *e.g.*, DEIR, Table B-22, pdf 286 ("Distance within San Joaquin Valley (northern route)").

[10] See, *e.g.*, Marine Research Specialists, Phillips 66 Company Rail Spur Extension and Crude Unloading Project Final Environmental Impact Report and Vertical Coastal Access Project Assessment, Prepared for San Luis Obispo County, December 2015, Exhibit 3; and City of Benicia, Valero Benicia Crude by Rail Project, Revised Draft Environmental Impact Report, SCH # 2013052074, Use Permit Application 12PLN-00063, August 2015; available at https://www.ci.benicia.ca.us/vertical/sites/%7BF991A639-AAED-4E1A-9735-86EA195E2C8D%7D/uploads/RDEIR-NoAppendics.pdf.

[11] DEIR, p. 32, pdf 51 and Appendix E, Sec. 3.1.3.3, pdf 51.

[12] DEIR, Table 4, pdf 243.

[13] DEIR, Appendix A, pdf 277.

mi) routes, or 69.5 miles,[14] within the SJVAPCD, thus significantly underestimating statewide rail emissions.

This is not a reasonable approach to estimating worst-case impacts, either within the SJVAPCD or elsewhere in California. Trucks and trains would emit significant amounts of pollution along their entire route, not just within the SJVAPCD. CEQA is a statewide statute. CEQA documents must evaluate impacts in all affected areas, including along transport routes.

The DEIR notes that "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 agreement."[15] The Contanda facility would receive tanker car shipments via inbound manifest trains from UP and BNSF.

AB-27

3.2.1. Emissions from Trucks in Transit

The renewable diesel would be transported to unidentified locations in Northern California. The DEIR indicates that 17,456 truck trips per year[16] would be required to transport the imported diesel to local markets. These tanker trucks would emit combustion emissions from their engines within the Bay Area Air Quality Management District (BAAQMD), including NOx, ROG, PM10, PM2.5, CO, and SOx and ROG emissions from various fittings and drips during transit and unloading. The DEIR does not include any of these emissions. The emissions from these sources within the BAAQMD must be quantified, summed with other Project sources within the BAAQMD, and compared with BAAQMD CEQA significance thresholds.

AB-28

3.2.2. Emissions from Oceangoing Vessels

The Project includes 12 OGV calls per year.[17] These OGVs and supporting tug boats would operate within the BAAQMD. The emissions from these sources within the BAAQMD must be quantified, summed with other Project sources within the BAAQMD, and compared with BAAQMD CEQA significance thresholds.

AB-29

3.2.3. Emissions from Trains in Transit

The Project will import renewable diesel by rail using the Union Pacific Railroad (UPRR) and the BNSF Railway (BNSF).[18] These carriers use routes that pass through many other air

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[14] DEIR, Appendix A, pdf 286.

[15] DEIR, p. 109, pdf 128. See also p. 111, pdf 130.

[16] DEIR, Table 3, pdf 242 and Table 4, pdf 35.

[17] DEIR, Table 3, pdf 242 and Table 4, pdf 35.

[18] DEIR, pdf 47.

AB-29 cont

districts. See Figure 1.[19] The emissions from trains within all affected air districts must be quantified and compared with each district's CEQA significance thresholds.

Figure 1: Union Pacific and BNSF Railroad Lines

3.2.4. Locomotive Emissions

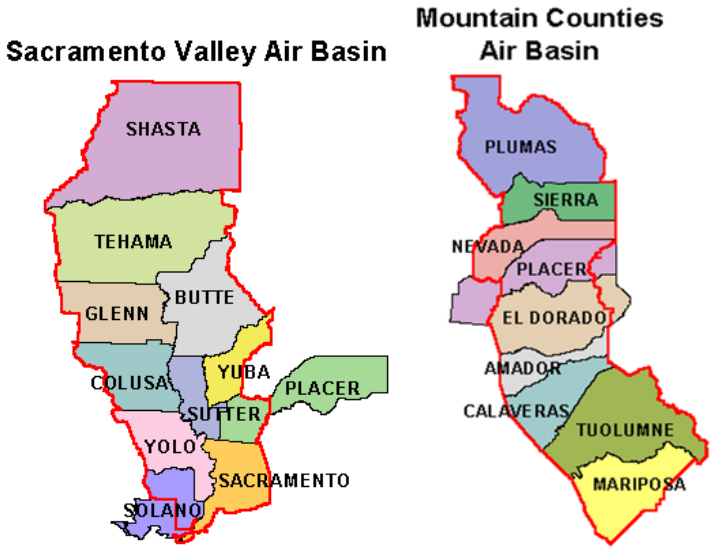
Locomotives emit significant amounts of criteria pollutants and DPM. The DEIR only estimated emissions within the SJVAPCD. The length of rail lines in the SJVAPCD comprises a very tiny fraction of the total distance the trains would travel through other air districts to

[19] From https://www.up.com/cs/groups/public/@stddocs/@customers/documents/up_pdf_nativedocs/pdf_up_i5_region_map.pdf.

AB-29 cont

transport Project-related materials and renewable diesel fuel to the Project site. Some of the air districts that would be affected are shown in Figure 2.[20]

Figure 2: Air Districts Affected by the Project



Routes that pass through these other air districts would have much higher emissions than the short segments within the SJVAPCD considered in the Project DEIR. For example, routes that pass over the Sierra Nevada (the Modoc Line route over Donner Pass in eastern Placer County past the City of Truckee to Reno and via the Feather River Corridor via Winnemucca to Reno) are subject to the highest emissions in California due to the locomotives operating at maximum load while navigating the switch-backs up and down the steep slopes of the Sierra Nevada. These emissions could result in significant air quality impacts in these other air districts, as well as significant public health impacts to communities along the rail lines.

The DEIR should be revised to estimate criteria pollutant and DPM emissions in all air districts through which the Project trains travel and compare them to significance thresholds of each affected air district. Further, the DEIR should be revised to include a health risk analysis for communities along any of these potential routes. When preparing such a health risk analysis, care must be taken to use emission factors appropriate to mountainous areas rather than the generic annual average factors used in the DEIR.[21]

AB-30

3.2.5. Rail Car Evaporative Emissions

In addition to emissions from locomotive engines, the rail cars transporting renewable diesel will emit ROG. The DEIR argues that renewable diesel has a very low vapor pressure

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[20] From https://www.arb.ca.gov/ei/maps/basins/abmcmap.htm and https://www.arb.ca.gov/ei/maps/basins/absvmap.htm. Maps not to scale.

[21] CARB, 2016 Line Haul Locomotive Model & Update, October 2017; available at www.arb.ca.gov/msei/ordiesel/locolinehaul2017ei.docx.

AB-30 cont

and therefore did not include any ROG emissions from any source at the Project site (e.g., storage tanks, loading and unloading). However, during periods of high temperature, ROG would be emitted from onsite storage tanks, fugitive components, and tanker cars during transport to the site as well as during railcar unloading and tanker truck loading at the site.

In summer, it can be over 100 degrees Fahrenheit in areas that the trains would pass through (Figure 1), including the Port itself and the entire Central Valley. This leads to fugitive losses from the rail cars through pressure relief valves while in transit or parked at the Port. The DEIR makes no mention of fugitive emissions from railcars or tanks. Fugitive HAP emissions from these sources should be estimated and included in the air quality and health risk assessments for the Project.

Further, when trains travel in mountainous terrain, which occurs along the routes Project trains will use, the contents of the railcars are sloshed about, outgassing ROG and creating pressure surges which can push headspace gases out of tiny openings in connectors, valves, vents, and PRVs. These high-pressure surges created by sloshing are often great enough to exceed the pressure relief vent disc burst pressure, leaving the vent open for the remainder of the trip. This is a well-known problem in rail transportation that has been studied but not eliminated.[22] Further, as the transported fuel warms up, it expands, and the internal pressure of the tank car increases. Pressure relief valves are used to periodically relieve this pressure to ensure the internal pressure does not increase to dangerous levels, damaging the car shell. Both of these events result in direct releases of ROG to the environment. These emissions were not included in the DEIR.

Industry literature identifies many more sources of railcar fugitive leaks, including the fill hole cover, manway cover, stuffing box for bottom outlet valve, bottom outlet, loading/unloading valves, air inlet valve, vacuum release valve, liquid line flange, gauging devices, sample lines, thermometer wells, heater coils, washout nozzle/plate, leaks in liquid lines, and leaks at welds. Pressure relief devices—e.g., rupture discs or safety vents—may also be present.[23] These remain open for the duration of the trip if triggered by pressure surges. In contrast, a pressure relief valve or PRV is spring-loaded and recloses after excessive pressure in the tank. Each of these components may release ROG into the atmosphere even if the

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[22] M. R. Saat, C. P. L. Barkan, and T. T. Treichel, Statistical Approach to Estimating Surge Pressure Reduction Devices' Performance, Railway Supply Institute Report R-974, November 2005; available at https://www.aar.org/wp-content/uploads/2018/02/AAR-RA-05-01-SPRD-Peformance-Saa-2005-NAR.pdf.

[23] See, *e.g.*, Charles J. Wright, Assessing Tank Car Damage, Union Pacific Railroad, Participant's Manual: Tank Car Safety Course, July 2007; available at http://www.chagrinsehazmat.com/PDF%20Documents/RestrictedFiles/PDF%20Files/Tank_Car_Damage_Assessment.pdf; Association of American Railroads, Field Guide to Tank Cars, 2017; available at https://www.ethanolresponse.com/wp-content/uploads/2017/02/2017-Field-Guide-for-Tank-Cars.pdf ; Tank Car Loading and Unloading, May 8, 2014; available at https://www.youtube.com/watch?v=1PzNbQlvgDw; TransQuip USA, General Service Car Fittings 101; available at www.fra.dot.gov/Elib/Document/3441.

components or associated gaskets are properly sealed. They release substantially more if not properly sealed.

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3.2.6. Ambient Air Quality Impacts

Locomotive emissions released during transport from the California border to the Project site do not stay put where they are emitted due to winds and other atmospheric phenomena. Pollutants generated in one air basin do not necessarily stay in that basin but rather are transported under certain weather conditions from one air basin to another (referred to as "interbasin transport"). Thus, pollutants generated in one basin can contribute to air pollution in adjacent basins. Interbasin transport among three adjacent air basins that would be impacted by the Project is known to impact ozone and particulate matter concentrations, as illustrated in Figure 3 below. [24]

Figure 3: Interbasin Transport of Pollutants

The CARB and others have conducted numerous technical assessments of transport relationships between air basins in California.[25] These studies demonstrate that the Mountain Counties Air Basin violates ozone standards due to transport of pollutants from the Sacramento Valley Air Basin, the San Joaquin Valley Air Basin and the San Francisco Bay Area Air Basin.

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[24] CARB, Ozone Transport: 2001 Review, April 2001 (hereafter "CARB 2001 Ozone Transport Review"); http://www.arb.ca.gov/aqd/transport/summary/transportsummary.doc.

[25] See, *e.g.*, CARB 2001 Ozone Transport Review, *op. cit.*; and BAAQMD, Characterization of Inter-Basin PM and Ozone Transport for the Bay Area, March 2010; http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Research%20and%20Modeling/PM%20and%20ozone%20transport%20cluster%20analysis%20report.ashx.

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Air quality in the broader Sacramento area is impacted by transport from the San Francisco Bay Area and, infrequently, from the San Joaquin Valley. On some days when the state standards for ozone are violated, the Sacramento area is impacted by transport of pollutants from the Bay Area. This occurs when there is a slight to moderate Delta breeze in the morning, which can carry commute-hour emissions into the Sacramento area to mix with local emissions and react with the summer sun to produce ozone.

Because the air basins through which Project trains would pass are interconnected by weather patterns, resulting in interbasin pollutant transport, the impact of the Project also should be evaluated cumulatively for the entire impacted area, rather than just in the SJVAPCD as analyzed in the DEIR. CEQA is a statewide statute, not a basin-by-basin statute, requiring that regional impacts be evaluated.

Most of the affected area currently violates California's 8-hour ozone ambient air quality standard, as shown in Figure 4.[26] (Nonattainment areas are crosshatched.)

Figure 4: 2013 Area Designations for State Ambient Air Quality Standards for Ozone

Most of the population in the affected air basins currently live in areas that also violate the federal 8-hour ozone ambient air quality standard. Figure 5.[27]

[26] From http://www.arb.ca.gov/desig/adm/2013/state_o3.pdf.

[27] From http://www.arb.ca.gov/desig/adm/2013/fed_o3.pdf.

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Figure 5: 2013 Area Designations for Federal 8-hour Ambient Air Quality Standard for Ozone

Both ROG and NOx from locomotives and railcars transporting renewable diesel are converted into ozone in the atmosphere. Thus, the increase in Project emissions from locomotives and onsite sources will increase ozone concentrations, aggravating existing exceedances of ozone standards set to protect public health. These are serious impacts with serious consequences that should result in denial of the Project if they are not analyzed and mitigated.

AB-32

4. AIR QUALITY IMPACT MITIGATION IS INADEQUATE

The DEIR concluded that Project operation within the SJVAPCD would result in significant air quality impacts, including: (1) conflicting with and/or obstructing implementation of air quality control plans (AQ-1);[28] (2) annual operational emissions of NOx exceeding 19 ton/yr (AQ-2);[29] and (3) a cumulatively considerable net increase in NOx.[30] To mitigate these significant impacts, the DEIR proposes only two mitigation measures—truck idling reductions (MM-AQ-1) and the use of clean trucks (MM-AQ-2)—concluding that emissions would remain significant after mitigation because NOx emissions largely originate

[28] DEIR, pp. 32-33, pdf 51-52.

[29] DEIR, Table 13, pdf 53-54.

[30] DEIR, p. 37, pdf 56.

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from locomotives and trucks that are not within Contanda's power to mitigate.[31] No mitigation at all is proposed for the significant cumulative NOx impacts.

First, idling restrictions are required by state law and thus are not valid mitigation. Second, there is additional feasible mitigation that must be required under CEQA because the impacts remain significant. These include Voluntary Emission Reduction Agreements (VERAs) and offsets.

AB-33

4.1. Voluntary Emission Reduction Agreements

The significant increase in NOx emissions could be fully mitigated using voluntary emission reduction agreements, or VERAs. Various agencies already use them as CEQA mitigation, as discussed below. A *Voluntary Emission Reduction Agreement* would require Contanda to make a one-time payment for its ROG and NOx emissions in excess of significance thresholds to each affected air district.

Kern County has used Development Mitigation Contracts (DMCs) to mitigate CEQA impacts since 2008. They are mandated by enforceable mitigation measures under CEQA and thus are called DMCs.[32]

The SJVAPCD uses VERAs to implement its Rule 9510 and to address mitigation requirements under CEQA. Under a VERA, the developer (in this case Contanda) fully mitigates project emission impacts by providing funds to the SJVAPCD, which are then used by the District to administer emission reduction projects on behalf of the developer. These agreements are incorporated into the SJVAPCD's CEQA Guidelines, which explain:

> Design elements, mitigation measures, and compliance with District rules and regulations may not be sufficient to reduce project-related impacts on air quality to a less than significant level. In such situations, project proponents may enter into a Voluntary Emission Reduction Agreement (VERA) with the District to reduce the project related impact on air quality to a less than significant level. A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of air emissions increases through a process that funds and implements emission reduction projects. A VERA can be implemented to address impacts from both construction and operational phases of a project.
>
> To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds to the District. The District's role is to administer the implementation of the VERA consisting of identifying emissions reductions projects, funding those projects and verifying that emission

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[31] DEIR, p. 33-37, pdf 52-56.

[32] Kern County, Final Environmental Impact Report for Revisions to the Kern County Zoning Ordinance—2015, 2015, p. 4.3-49, 4.3-102/103; http://pcd.kerndsa.com/planning/environmental-documents/421-oil-gas-deir.

AB-33 cont

reductions have been successfully achieved. The VERA implementation process also provides opportunity for the project proponent to identify specific emission reduction projects to be administered by the District. The funds are disbursed by the District in the form of grants. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors.

The District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. The initial agreement is generally based on the projected maximum emissions increases as calculated by a District approved air quality impact assessment, and contains the corresponding maximum fiscal obligation. However, the District has designed flexibility into the VERA such that the final mitigation can be based on actual emissions related to the project as determined by actual equipment used, hours of operation, etc. After the project is mitigated, the District certifies to the Lead Agency that the mitigation is completed, providing the Lead Agency with an enforceable mitigation measure demonstrating that project specific emissions have been mitigated to less than significant.

To ensure all feasible mitigation measures are incorporated into the project to reduce project air quality impact to less than significant, the District recommends the project proponent (and/or Lead Agency) engage in discussion with the District to have the VERA adopted by the District prior to the finalization of the environmental document. This process will allow the environmental document to appropriately characterize the project emissions and demonstrate that the project impact on air quality will be mitigated to less than significant under CEQA as a result of the implementation of the adopted VERA. The District has been developing and implementing VERA contracts with project proponents to mitigate project specific emissions since 2005. It is the District's experience that implementation of a VERA is a feasible mitigation measure, which effectively achieves the emission reductions required by a Lead Agency, including mitigation of project-related impacts on air quality by supplying real and contemporaneous emissions reductions. Therefore, Lead Agencies should require the project proponent to negotiate a VERA with the District prior to the Lead Agency's final approval of the CEQA document. This allows the Lead Agency to disclose to the public the certainty that the VERA is assuring full mitigation of air quality impacts as specified in the environmental review document or equivalent documentation certified by the Lead Agency.[33]

[33] SJVAPCD, Guidance for Assessing and Mitigating Air Quality Impact, March 19, 2015, pp. 116-117; http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf.

AB-33 cont

From 2005 through June 30, 2017, the SJVAPCD has entered into over 32 VERAs.[34] VERAs have been identified as mitigation measures within other environmental documents that underwent public review under CEQA.[35] Types of projects that have been funded include electrification of stationary internal combustion engines (such as agricultural irrigation pumps, present throughout the subject air districts), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacing old farm tractors. The SJVAPCD has repeatedly concluded that a VERA "is a feasible mitigation measure under CEQA, effectively achieving emission reductions necessary to reduce impacts to a less than significant level."[36]

This approach, for example, was recently proposed by Kern County to mitigate impacts from oil and gas drilling and was vigorously upheld in the response to comments, concluding that it is "an enforceable mitigation measure that will effectively 'zero out' new project emissions of NOx, PM10, and ROGs by generating equivalent emissions reduction through equipment replacements and other measures funded by the mitigation fees."[37] Other air districts also use this approach, including Placer County APCD and Sacramento Metropolitan AQMD.[38]

This approach has been found legally sufficient by court rulings in the following cases: *California Building Industry Assn. v. San Joaquin Valley APCD*, Fresno County Case No. 06 CECG 02100 DS13; *National Association of Home Builders v. San Joaquin Valley Unified Air Pollution Control District*; Federal District Court, Eastern District of California, Case No. 1:07-CV-00820-LJO-DLB; and *Center for Biological Diversity et al v Kern Count*y, Fifth Appellate District, Case No. F061908.

The Port should require the use of a VERA as binding mitigation to reduce the Project's significant and unavoidable air quality impacts. Under such an agreement, Contanda would pay an air emission mitigation fee pursuant to an agreement between the Port of Stockton and the SJVAPCD to fully offset new emission increases. The SJVAPCD would then use the fees to reduce emissions within the district. The SJVUAPCD has found that the cost for NOx reductions is $8,123 per ton.[39]

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[34] SJVAPCD, 2017 Annual Report, Indirect Source Review Program, Reporting Period: July 1, 2016 to June 30, 2017, pp. 5, 9; https://valleyair.org/ISR/Documents/2017-ISR-Annual-Report.pdf.

[35] SJVAPCD, Summary of Comments and Responses to Proposed Revisions to the GAMAQI-2012, May 31, 2012, p. 3; https://www.valleyair.org/transportation/GAMAQIDRAFT-2012/GAMAQIResponsetoComments5-10-12%20.pdf.

[36] SJVAPCD 2017, pp. 5, 9.

[37] Kern County Oil & Gas FEIR, Responses to Comments, September 2015, pp. 7-184/185; http://psbweb.co.kern.ca.us/UtilityPages/Planning/EIRS/oil_gas/RTC/Oil_Gas_FEIR_Vol3_Chapter_7.2.1.pdf.

[38] RDEIR, p. 2-38.

[39] SJVAPCD 2017, Table 3, pdf 11.

AB-33 cont

The voluntary mitigation program would have to be designed to assure that impacts are reduced at the place and time that they actually occur—i.e., continuously in areas in the vicinity of the rail lines. For example, emissions from rail lines that pass through large areas of national forest and irrigated farm lands could be mitigated under VERAs by replacing diesel-fuel equipment used by the Forest Service or by electrifying irrigation pumps. Emissions from rail lines that pass through residential areas could be mitigated by installing solar panels on homes and commercial buildings in the vicinity of the rail tracks, or by replacing fireplaces and wood burning stoves with more efficient heating methods.

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5. HEALTH RISKS ARE SIGNIFICANT

The DEIR includes a health risk assessment (HRA) to estimate potential cancer and chronic noncancer health impacts from exposure to toxic air contaminants (TACs) during Project construction and operation.[40] The HRA asserts it was conducted in accordance with SJVAPCD HRA guidance (SJVAPCD 2018) and Office of Environmental Health Hazard Assessment (OEHHA) Guidance,[41] using US EPA's AERMOD dispersion model and CARB's Hotspots Analysis Reporting Program (HARP), and the Risk Assessment Standalone Tool (RAST).[42] However, as discussed below, this guidance was not followed. Further, emissions were underestimated, thus underestimating risks; hours of operation were restricted to avoid periods when ambient concentrations are the highest, and source locations were modified to avoid residential areas. These and other assumptions buried in the modeling files minimize health risks but are not required as enforceable conditions. Finally, acute health impacts and worker health risks were not estimated and are highly significant at many sensitive receptors, including school children and residents.

AB-35

5.1. General Modeling Issues

Our review of the modeling files produced in response to PRAs indicates that the HRA did not follow OEHHA guidance and did not properly use HARP or RAST. Further, the risk assessment methodology used deviated substantially from standard procedures and in every case, the deviations underestimated health impacts. The DEIR appears to have made a deliberate attempt to hide the very significant health risks that would occur at nearby sensitive receptors, including workers, school children at Washington Elementary, and residents within the Seaport Neighborhood, which covers areas along I-5.[43]

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[40] DEIR, Appendix E, Air Quality and Greenhouse Gas Report, Section 3. Health Risk Assessment, pdf 244-296.

[41] Office of Environmental Health Hazard Assessment (OEHHA), Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments, February 2015; available at https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

[42] DEIR, Appendix E, pdf 244.

[43] Seaport District Neighborhood in Stockton, California; available at: http://www.city-data.com/neighborhood/Seaport-District-Stockton-CA.html.

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First, OEHHA Guidelines the DEIR asserts were followed require that the dispersion model be run using a modeling grid of sufficient extent and density so as to capture the point of maximum risk. The OEHHA risk assessment guidance, for example, explains:[44]

> **4.7.1 *Receptor Points***
>
> The modeling analysis should contain a network of receptor points with sufficient detail (in number and density) to permit the estimation of the maximum concentrations. Locations that must be identified include:
>
> - The maximum estimated off-site impact or point of maximum impact (PMI),
> - The maximum exposed individual at an existing residential receptor (MEIR),
> - The maximum exposed individual at an existing occupational worker receptor (MEIW).

Second, the California Air Pollution Control Officers Association's (CAPCOA's) HRA guidance discusses the various types of receptor grids that can be used[45] and notes that "[t]he receptor grid must be designed to include the Point of Maximum Impact (PMI)."[46] This guidance was prepared specifically to assist lead agencies in complying with the requirements of CEQA.[47]

There is no evidence in the record that the HRA followed either guidance. The Port produced modeling files indicate that AERMOD was run using a grid with over 1,000 receptors. However, the risk calculations reported in the produced files and the DEIR are for a single point, preventing any meaningful review of the location of the PMI as reported in the DEIR. Thus, the DEIR has failed to disclose all of the information required by reviewers to assess its conclusions, especially members of the public without the ability to interpret the modeling files.

Third, it is standard practice in CEQA documents to summarize health risks on isopleth maps (an isopleth is a line connecting points of a given value) showing the spatial distribution of risk. The HRA failed to display the results of its analysis on a map or identify the physical location of the sensitive receptor(s). The absence of an isopleth map deprives the public and potentially affected parties of determining if they are at risk and makes it impossible to determine if the risk values reported in the DEIR are for the PMI, which is the metric used to judge significance.

Fourth, the underlying air dispersion model, AERMOD, is typically run with HAP emissions of 1 gram/sec for each source and the annual HAPs are specified in the emissions inventory of the HARP model in grams/sec (g/sec). This makes it transparent as to how the modeling and risks were calculated. The AERMOD files produced in response to our PRA did not show input emission rates in grams/sec but rather in grams/square meter/sec and then

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[44] OEHHA February 2015, Section 4.7.1.

[45] CAPCOA, Health Risk Assessments for Proposed Land Use Projects, July 2009, Sections 6.1 and 6.2; available at http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA_HRA_LU_Guidelines_8-6-09.pdf.

[46] CAPCOA, p. 70.

[47] *Id.*, p. 1.

AB-35 cont

magically reported the risk results in the HARP model output with no support for the intervening steps. Thus, the risk results are not supported in the record.

Fifth, construction emissions were modeled as a single polygon line area source. The assumed area could not be determined from the AERMOD output files produced in response to our PRAs.[48] As a result, it was not possible to determine if peak emissions from point sources were diluted over a large area. Our results suggest they were.

Finally, we note that the cancer risks from both the construction and operational phases are identical in the HRA.[49] It is hard to imagine, given the short duration of the construction phase and lower DPM emissions (366 lb/yr for construction versus 616.4 lb/yr for operational emissions), that both cancer risks would be identical and the location of the maximum risk at the same location.

Due to these and other issues discussed below, we prepared an HRA from scratch for the Project, following the standard procedures asserted to have been followed in the DEIR (but which were not) and the emission rates calculated in Appendix B of Appendix E of the DEIR, corrected where we found errors, as documented below. When the cited guidance is followed and errors and omissions are corrected, construction and operational cancer risks and acute health impacts from DPM emissions are highly significant and unmitigated.

AB-36

5.2. Construction Health Risk Assessment

The DEIR concluded that health impacts from construction were not significant because the estimated cancer risk is less than the SJVAPCD significance threshold of 20 in one million.[50] However, the construction health risk assessment in the produced electronic files is inconsistent with information reported in the DEIR. The DEIR's construction health risk assessment is incomplete and riddled with errors. Further, the selected cancer significance threshold (20 in one million) is inconsistent with OEHHA guidance (<10 in one million), which the DEIR asserts it relied on.

First, the DEIR's discussion of construction health risks is internally inconsistent. It reports that the maximum construction and operational cancer health risks are equal. This is simply implausible, given the significant differences in exposure duration (1 yr versus 30 yrs), emission rates, and the geometry/layout of the sites. The files produced in response to our PRAs indicate that operational emissions were modeled as a combination of eight point and line sources, while construction emissions were modeled as a single ground-level area source. Thus, on its face, there is a significant error in reporting the results of the health risk assessments. The errors we discovered after reviewing the DEIR's hard copy input files and correcting the many errors in its analysis, are discussed below. No electronic files were produced, only hard copies of the input.

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[48] DEIR, pdf 327.

[49] DEIR, Appendix E, Table 8, pdf 248.

[50] DEIR, Appendix E, p. 7, pdf 247.

AB-36 cont

The DEIR reports the construction cancer risk at the nearest residential receptor of 6.972 E-6[51] in summary Table 8 of Appendix E, which is less than the assumed significance threshold of 20 in one million.[52] However, elsewhere the DEIR reports that construction risks were estimated using a DPM emission rate of 0.183 ton/yr (366 lb/yr),[53] which the DEIR asserts yielded a maximum annual DPM concentration at the nearest residential receptor of 0.03922 $\mu g/m^3$.[54]

These two sets of numbers are inconsistent. The OEHHA cancer potency value for DPM is 3.0 E-4 $(\mu g/m^3)^{-1}$.[55] Converting the maximum annual DPM concentration of 0.03922 $\mu g/m^3$ to cancer risk yields a construction cancer risk of 12 in one million[56] at the nearest residence, or nearly double the value reported (6.972 in one million) in summary Table 8.[57] Thus, the resulting construction cancer risk based on the asserted modeling inputs and outputs in the DEIR is at least 12 in one million. The actual cancer risk to onsite workers, offsite workers, and residents is much higher, when numerous other errors and omissions are corrected, as discussed below.

The OEHHA's risk assessment guidelines for short-term construction exposures,[58] which the DEIR asserts it relied on, recommends the use of a lower cancer significance threshold than the 20 in 1 million used in the DEIR for short-term exposures, such as during construction. The OEHHA guidelines specifically conclude that a dose delivered over a short time period, such as during construction, may have a different potency than the same dose delivered over a lifetime and recommends:[59]

> each District. There is valid scientific concern that the rate of exposure may influence the risk – in other words, a higher exposure to a carcinogen over a short period of time may be a greater risk than the same total exposure spread over a much longer time period. In addition, it is inappropriate from a public health perspective to allow a lifetime acceptable risk to accrue in a short period of time (e.g., a very high exposure to a carcinogen over a short period of time resulting in a 1×10^{-5} cancer risk). Thus, consideration should be given for very short term projects to using a lower cancer risk trigger for permitting decisions.

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[51] This is equivalent to 6.972 cancer cases per million exposed, alternatively expressed as "6.972 cases in one million."

[52] DEIR, Appendix E, Table 8, pdf 248.

[53] DEIR, Appendix E, pdf 245.

[54] DEIR, Appendix E, p. 5, pdf 245.

[55] OEHHA, Appendix A: Hot Spots Unit Risk and Cancer Potency Values, p. A-3; available at https://oehha.ca.gov/media/downloads/crnr/appendixa.pdf.

[56] The OEHHA cancer potency value for DPM is 3.0 E-4 $\mu g/m^3$. Thus, construction cancer risk = (0.03922 $\mu g/m^3$)(3.0E-4/$\mu g/m^3$) = 1.177E-5 or 12 excess cancers in one million.

[57] DEIR, Appendix E, Table 8, pdf 248.

[58] OEHHA, February 2015, p. 8-18, pdf 199.

[59] *Ibid*.

AB-36 cont

This guidance recommends using a cancer significance threshold for short-term exposure, such as during construction, of less than 10 in one million. The calculations above, using the applicant's modeled maximum DPM concentration at the nearest residential receptor, exceeds 10 in one million. Thus, based on the Applicant's analysis and OEHHA guidance, which the DEIR alleges it followed, DPM emissions from Project construction would result in significant cancer risks to nearby residential receptors. This is a significant impact that was not disclosed in the DEIR and which must be mitigated.

AB-37

Second, the construction HRA failed to evaluate health impacts to on-site construction workers, who are the mostly highly exposed individuals, or nearby offsite workers.[60] The DEIR only reports the maximum construction cancer risk at the maximum offsite residential receptor, a residence at the northwest corner of S. Ventura Avenue and W. Washington Street. This is the same receptor as for Project operation.[61] However, the maximum worker cancer risk would occur on site, or at closer industrial facilities where workers are found. As discussed in Comment 5.8, acute impacts at industrial facilities in the surrounding area, such as Contanda's adjacent terminal at Port Road A, are significant. Therefore, accurate representation of individual construction emission sources is required.

OEHHA risk assessment guidance that the DEIR alleges it relied on specifically requires an offsite worker scenario.[62] The DEIR fails to calculate construction cancer risk at these closer receptors, which would have even higher cancer risk than the maximum offsite residential receptor, which is significant. Thus, cancer risks to onsite workers, offsite workers, and local residents are significant and must be mitigated.

AB-38

Third, while we did not reverse engineer and correct the DEIR's construction HRA due to inadequate review time and incomplete production of supporting modeling files, the same errors, omissions, and unsupported "adjustments" to source locations that we found in the operational HRA (Comment 5.3) are present in the construction worker cancer risk analysis, which the DEIR variously estimated to be below 10 in one million. The revised HRA that we prepared for operational health risks provides compelling data to suggest worker health impacts during construction would also be significant and should be presented in a revised and recirculated DEIR.

AB-39

Fourth, the DEIR does not include a cumulative construction (or operational) HRA. The DEIR indicates that 19 projects would occur close by, which are in progress or just completed.[63] The construction of all of these projects would emit DPM that would affect many of the same

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[60] Section 8.2.4, p. 8-6, pdf 188.

[61] DEIR, Appendix E , pdf 245.

[62] OEHHA, February 2015, Section 4.7.1 (See, *e.g.*, "The modeling analysis should contain a network of receptor points with sufficient detail [] to permit the estimation of the maximum concentration. **Locations that must be identified include: [] The maximum exposed individual at an existing occupational worker receptor (MEIW).**" Emphasis added.)

[63] DEIR, Table 21, pdf 137-138.

sensitive receptors as the Project's construction. The DEIR fails to present DPM emissions for these projects for construction or operation. It also fails to prepare a cumulative construction or operational HRA. Thus, the DEIR fails as an informational document under CEQA.

AB-40

Fifth, the construction HRA did not include worker receptors. The highest health impacts will occur at other businesses located adjacent to the proposed Project site.

AB-41

Sixth, because the DEIR's analysis shows that construction cancer risks exceed OEHHA's recommended significance threshold of 10 in one million, the DEIR must include construction mitigation. None is recommended. The following summarizes frequently recommended measures to control emissions of DPM from construction that were not identified in the DEIR and that have been required in other CEQA documents and recommended by various air pollution control districts (e.g., BAAQMD[64]) and other public agencies. The following is a partial list:

- Maintain all construction equipment in proper tune according to manufacturer's specifications and use an ASE-certified mechanic to check the equipment and determine it to be running in proper condition before it is operated (CalAm IS/MND[65]; Chevron FEIR[66]).
- Diesel-powered equipment shall be replaced by gasoline-powered equipment whenever feasible (CalAm IS/MND, Chevron FEIR).
- The engine size of construction equipment shall be the minimum practical size (CalAm IS/MND).
- Catalytic converters shall be installed on gasoline-powered equipment (CalAm IS/MND).
- Signs shall be posted in designated queuing areas and job sites to remind drivers and operators of the idling limit (CalAm IS/MND, Chevron FEIR).
- Diesel equipment idling shall not be permitted within 1,000 feet of sensitive receptors (CalAm IS/MND).
- Engine size of construction equipment shall be the minimum practical size (CalAm IS/MND).
- Construction worker trips shall be minimized by providing options for carpooling and for lunch on site (CalAm IS/MND, Chevron FEIR).

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[64] BAAQMD, CEQA Guidelines, Updated May 2017, Tables 8-2 and 8-2.

[65] SWCA Environmental Consultants, Draft Initial Study and Mitigated Negative Declaration for the California American Water Slant Test Well Project, Prepared for City of Marina, May 2014 (CalAm IS/MND).

[66] Chevron Refinery Modernization Project EIR, March 2014, Chapter 4.8, Greenhouse Gases; available at https://s3.amazonaws.com/chevron/Volume+1_DEIR_r1.pdf and Chapter 5, Mitigation Measure Monitoring and Reporting Program; available at https://s3.amazonaws.com/chevron/Final+EIR/5_MMRP.pdf.

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- Use alternative diesel fuels, such as renewable diesel, Aquazole fuel, Clean Fuels Technology (water emulsified diesel fuel), or O2 diesel ethanol-diesel fuel (O2 Diesel) in existing engines (Monterey County General Plan EIR). [67]
- Modify engines with ARB verified retrofits.
- Repower engines with Tier 4 final diesel technology.[68]
- Convert part of the construction truck fleet to natural gas.[69]
- Use new or rebuilt equipment.
- Use diesel-electric and hybrid construction equipment.[70]
- Use low rolling resistance tires on long-haul class 8 tractor-trailers.[71]
- Use idle reduction technology, defined as a device that is installed on the vehicle that automatically reduces main engine idling and/or is designed to provide services (e.g., heat, air conditioning, and/or electricity) to the vehicle or equipment that would otherwise require the operation of the main drive engine while the vehicle or equipment is temporarily parked or is stationary.[72]

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[67] Monterey County General Plan EIR, Section 6.4.3.3, p. 6-14 ("The EIRs prepared for the desalination plants are expected to require that construction equipment use alternative fuels or other means to reduce their emissions of ozone precursors. Although, depending upon the intensity of construction, there is the potential for a significant impact on air quality from ozone precursors."); available at http://www.co.monterey.ca.us/planning/gpu/2007_GPU_DEIR_Sept_2008/Text/Sec_06_Other_CEQA.pdf. See also Union of Concerned Scientists, Digging Up Trouble: The Health Risks of Construction Pollution in California, November 2009, pp. 23-24; available at: https://www.ucsusa.org/sites/default/files/legacy/assets/documents/clean_vehicles/digging-up-trouble.pdf.

[68] Union of Concerned Scientists, November 2009, p. 23.

[69] This is a mitigation measure used by PG&E to offset NOx emissions from its Otay Mesa Generating Project. See: GreenBiz, Natural Gas Trucks to Offset Power Plant Emissions, September 12, 2000; available at http://www.greenbiz.com/news/2000/09/12/natural-gas-trucks-offset-power-plant-emissions.

[70] Tom Jackson, How 3 Diesel-Electric and Hybrid Construction Machines are Waging War on Wasted Energy, Equipment World, June 1, 2014; available at http://www.equipmentworld.com/diesel-electric-and-other-hybrid-construction-equipment-are-waging-war-on-wasted-energy/; Kenneth J. Korane, Hybrid Drives for Construction Equipment, Machine Design, July 7, 2009; available at http://machinedesign.com/sustainable-engineering/hybrid-drives-construction-equipment; Caterpillar's D7E Electric Drive Redefines Dozer Productivity; available at http://www.constructionequipment.com/caterpillars-d7e-electric-drive-redefines-dozer-productivity.

[71] EPA, Verified Technologies for SmartWay and Clean Diesel, Learn About Low Rolling Resistance (LRR) New and Retread Tire Technologies; available at https://www.epa.gov/verified-diesel-tech/learn-about-low-rolling-resistance-lrr-new-and-retread-tire-technologies; EPA, Verified Technologies for SmartWay and Clean Diesel, SmartWay Verified List for Low Rolling Resistance (LRR) New and Retread Tire Technologies; available at https://www.epa.gov/verified-diesel-tech/smartway-verified-list-low-rolling-resistance-lrr-new-and-retread-tire.

[72] EPA Names Idle Reduction Systems Eligible for Federal Tax Exemptions, March 2009, available at http://www.greenfleetmagazine.com/channel/green-operations/article/story/2009/03/epa-names-idle-reduction-systems-eligible-for-federal-excise-tax-exemptions-grn.aspx. See also: Idle Reduction, Wikipedia; available at https://en.wikipedia.org/wiki/Idle_reduction and Diesel Emissions Reduction

AB-41 cont

- Implement EPA's National Clean Diesel Program.[73,74,75]
- Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of PM (BAAQMD).
- Require that all contractors use equipment that meets CARB's most recent certification standard for off-road heavy-duty diesel engines.[76]
- Solicit bids that include these measures.

AB-42

5.3. Operational Health Risk Assessment

The DEIR does not adequately support the operational HRA. The cancer risk ultimately depends on the magnitude, timing, and location of emission sources and meteorological conditions. These assumptions cannot be verified without unlocked spreadsheets that support emission calculations and native format modeling files. These were not included in the DEIR or its appendices, and the Port refused to produce them in response to our record requests.

Our initial review of the operational HRA identified some disturbing inconsistencies that led us to attempt to obtain this missing information to reproduce the DEIR's health risk cancer risk calculations. For example, the DEIR asserts that operational health risks were estimated using a DPM emission rate of 616.4 lb/yr,[77] resulting in a maximum 5-year DPM

Program (DERA): Technologies, Fleets and Project Information, Working Draft Version 1.0; available at https://nepis.epa.gov/Exe/ZyNET.exe/P100CVIS.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2011+Thru+2015&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C11thru15%5CTxt%5C00000003%5CP100CVIS.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL.

[73] Northeast Diesel Collaborative, Best Practices for Clean Diesel Construction: Successful Implementation of Equipment Specifications to Minimize Diesel Pollution, August 2012; available at https://www.northeastdiesel.org/pdf/BestPractices4CleanDieselConstructionAug2012.pdf.

[74] U.S. EPA, Cleaner Diesels: Low-Cost Ways to Reduce Emissions from Construction Equipment, March 2007; available at https://nepis.epa.gov/Exe/ZyNET.exe/P1009QEO.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2006+Thru+2010&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C06thru10%5CTxt%5C00000024%5CP1009QEO.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL.

[75] NEDC Model Contract Specification, April 2008; available at https://www.epa.gov/sites/production/files/2015-09/documents/nedc-model-contract-sepcification.pdf.

[76] BAAQMD, CEQA Guidelines, Updated May 2017, Table 8-3, Measure 13.

[77] DEIR, Appendix E, Table 7, pdf 246.

AB-42 cont

concentration at the nearest residential receptor of 0.0102 μg/m^3.[78] Assuming the asserted concentration of 0.0102 μg/m^3 and using the standard OEHHA cancer potency value for DPM of 3.0 E-4 (μg/m^3)$^{-1}$,[79] yields an operational cancer risk of 3 in one million[80] at the nearest residence, or less than half the value reported in HRA summary Table 8.[81] This and other puzzling inconsistencies between reported risks and emissions in the text of the HRA suggested problems buried somewhere in the HRA calculations.

Thus, we attempted to obtain native electronic versions of the supporting emission calculation and modeling files used to verify the DEIR's reported cancer risk.[82] However, the Port declined to produce electronic versions of supporting modeling and emission files, instead asserting that the modeling files were "privileged." The modeling and emission files were only produced incompletely, mostly in hard copy format, late in the review period, and after commenters had submitted multiple record requests for the files. This required that we duplicate the HRA's results by trial and error. This makes it difficult to reproduce and verify the Applicant's modeling results. This work revealed that many of the HRA inputs were selected to minimize health risks rather than capture local conditions.

Our review of the produced modeling files and supporting emission calculations in Appendix B to Appendix E[83] and our independent analyses indicate there are numerous errors, omissions, and unsupported and undisclosed adjustments of source locations in the DEIR's operational HRA, buried in the modeling files that we obtained via PRAs. These hidden assumptions are not disclosed in the DEIR. All of these "errors, omissions, and unsupported adjustments" underestimate health risks, which, when corrected, indicate that the Project will result in significant residential cancer risks, may result in significant worker cancer risks, as well as highly significant acute health impacts to school children, workers, and residents.

In sum, what we discovered is that the HRA is based on (1) emissions that are lower than reported in supporting emission calculations; (2) restricted hours of operation that would not occur in practice; and (3) relocation of emissions sources (e.g., roads, rail lines, switching locations) to the south and west, away from residential areas.

Most of these "risk favorable" assumptions are not disclosed in the DEIR. While the applicant can select any route and operating hours it chooses, no restrictions are required as conditions of Project operation (e.g., restrictions on truck and train routes, restrictions on hours

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[78] DEIR, Appendix E, pdf 246.

[79] OEHHA, Appendix A: Hot Spots Unit Risk and Cancer Potency Values, p. A-3; available at https://oehha.ca.gov/media/downloads/crnr/appendixa.pdf.

[80] The OEHHA cancer potency value for DPM is 3.0 E-4 μg/m^3. Thus, operational cancer risk = (0.0102 μg/m^3)(3.0E-4/μg/m^3) = 3.06E-6 or 3 excess cancers in one million.

[81] DEIR, Appendix E, Table 8, pdf 248.

[82] See footnote 2, supra.

[83] DEIR, Appendix E: Air Quality and Greenhouse Gas Report, Appendix B: Emission Calculation Tables, pdf 255.

AB-42 cont

when ships and trains arrive and depart, restrictions on emissions based on engine tier, etc.). The HRA's modelling consistently assumes routes and operating hours that minimize impacts. When these assumptions that are buried in modeling files that were not part of the public record are adjusted to reflect the most likely (shortest) routes and operating hours (around the clock), cancer health risk at the maximally exposed individual (MEI) increases from 6.97 in one million reported in the DEIR[84] to 28 in one million, which is highly significant and must be mitigated.

AB-43

5.4. Diesel Particulate Matter Emissions

Diesel Particulate Matter (DPM) is the only HAP included in the HRA. The DEIR reports DPM emissions in three places: (1) in HRA Table 7;[85] (2) in supporting emission calculations in Appendix B of Appendix E; and (3) in the AERMOD input files. Table 1 summarizes these three sources of DPM emissions. This comparison reveals many inconsistences.

Table 1: Operational Diesel Particulate Matter (DPM) Emissions (lb/yr)

Source	HRA Table 7[1]	HRA[2] Modeled	Supporting Calculations
Truck Transit	8.2	8.2	13.1[3]
Truck Idling On-Site	1.7	1.7	1.6[4]
Line Haul Locomotives	3.3	7.9	8.5[5]
Switcher Locomotives	161.3	54.7	208.7[6]
OGVs at Berth	315.2	314.9	239.4[7]
OGVs in Transit	37.7	37.7	76.4[8]
Tugboats in Transit	75.6	75.6	75.6[9]
Tugboats at Berth	13.4	13.4	13.4[10]
TOTAL	616.4	514.1	634.1

[1] DEIR, Appx. B, Table 7, pdf 246.

[2] Calculated from DEIR, Appendix D2, AERMOD Output for Operation. Line source emissions calculated as sum [(emission rate in g/sec-m^2)(length)(width) for line sources].

[3] Truck Transit: DEIR, Appx. B of Appx. E, Table 7, note a, pdf 246: Truck transit modeled to about 1 mile east of project site. Thus, based on Table B-15, pdf 277: transit on-site (2.62 lb/yr) + transit off-site (2 mi/88 mi)(461.35 lb/yr) = **13.1 lb/yr**.

[4] Truck Idling On-Site: DEIR, Appx. B of Appx. E, Table B-15, pdf 277, 2020 on-site truck idling PM2.5 = **1.57 lb/yr**; PM10 = 1.71 lb/yr. Apparently, the DEIR modeled PM10.

[5] Line Haul Locomotives: DEIR, Appx. B of Appx. A, Table 7, pdf 246, note b: Line haul locomotives were modeled to about 1 mile southeast of the project site. Two routes are described: (1) within SJV north to border of SJV and south to Fresno switch location, Tables B-22 & B-24, pdf 286 & 288, average trip length: 161.42 lb/yr/69.5 mi = 2.32 lb/yr-mi one way. (2) within SJV south from Fresno switch location to SJV border, Tables B-23 & B-25, pdf 287 & 289: 305.11 lb/yr/157 mi = 1.94 lb/yr-mi one-way. Assuming the average of these two: [(2.32 lb/yr + 1.94 lb/yr)/2]*4 (2 round trips, in and out) =**8.52 lb/yr.**

[84] DEIR, Table 15, pdf 57; Table 8, pdf 248.

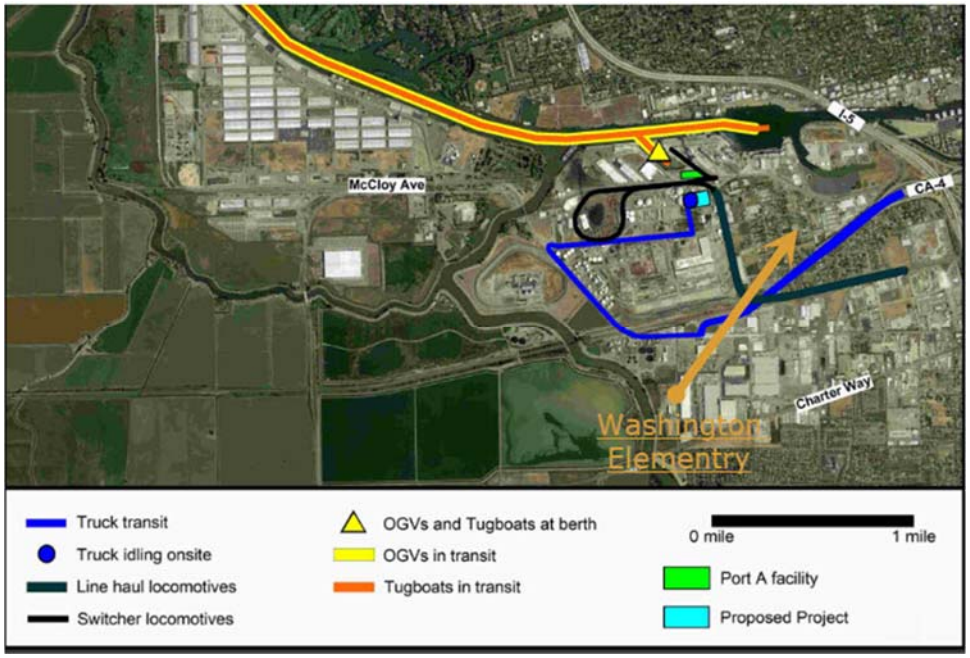
[85] DEIR, Appendix E: Air Quality and Greenhouse Gas Report, Section 3: Health Risk Assessment, Table 7, pdf 246.

[6] Switcher Locomotives: Switcher PM2.5 = **208.68 lb/yr**, DEIR, Appx. B of Appx. E, pdf 285. DPM is not reported but assumed to be equal to PM2.5.
[7] OGVs at Berth: DEIR, Appx. B of Appx. E, pdf 261. Assumes no DPM from boiler. The HRA apparently modeled PM10, rather than DPM, thus overestimating risks.
[8] OGVs in Transit: DEIR, App. B of Appx. E, Table 7, notes c & d: OGV boiler emissions were conservatively treated as DPM and OGV transit was modeled to about 4 miles NW of the project site. DEIR, Appx. B of Appx. E, Tables B-2, B-3, B-9, pdf 262-263, 270: Port Harbor to Berth (Maneuvering) + SJR at Stockton to SJVAPCD Boundary = 25.19 + (4 mi/13 mi)(42.32) = 38.2 lb/yr. The DEIR reports one-way trips, so total round trip = 2 x 38.2 = **76.4 lb/yr**.
[9] Tug Boats in Transit: DEIR, Appx. B of Appx. E, pdf 273, maneuvering.
[10] Tug Boats at Berth: DEIR, Appx. B of Appx. E, pdf 272, harbor craft at berth.

AB-43 cont.

This emission summary indicates that 77% of the DPM emissions come from two sources—the switcher locomotives and OGVs at berth. Figure 6 indicates that these two emission sources are the closest to sensitive receptors (workers, residents, and Washington Elementary School) and thus are the major contributors to health risk. Curiously, the DEIR's HRA modeled train and truck routes that maximize the distance from these sensitive receptors, rather than the shortest routes that would be used in practice. Thus, it is critically important that these emissions be accurately estimated and modeled. They were not.

Figure 6: Location of Emission Sources



5.5. Case 1: Cancer Risk at the Maximum Exposed Individual (MEI) Based on DEIR

The DEIR asserts that residential cancer risks due to Project operation are not significant, based on the DPM emissions in HRA Table 7.[86] However, as discussed in Comment 5.4, the

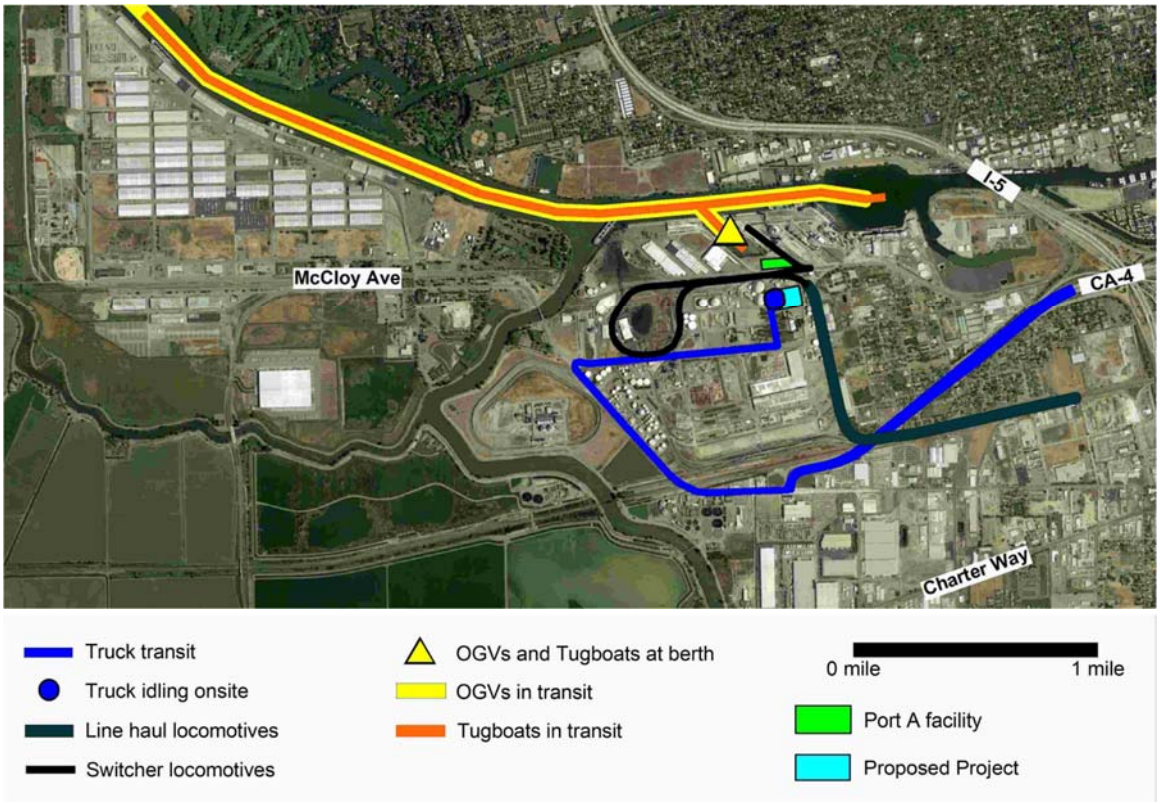
[86] DEIR, Appendix E, Table 7, pdf 246.

AB-43 cont.

DPM emissions that were modeled in the HRA (Table 1) are not consistent with the emissions reported in the HRA nor with the emissions in the supporting emission calculations in Appendix B to Appendix E. The modeled switcher emissions are underestimated by factors of three to four.

Further, we were only able to reproduce the HRA's results by trial and error relocation of line sources, truck routes, and rail lines. Our review indicates that the DEIR's HRA analysis shifted line sources and switcher emissions to the south and west, away from residential areas. Figures 6. The results of our attempt to reproduce the HRA's results, using the modeling files that were produced, are shown in Figure 7[87] and referred to in these comments as Case 1.

Figure 7: Case 1—Location of Truck and Rail Routes Modeled in the DEIR's HRA



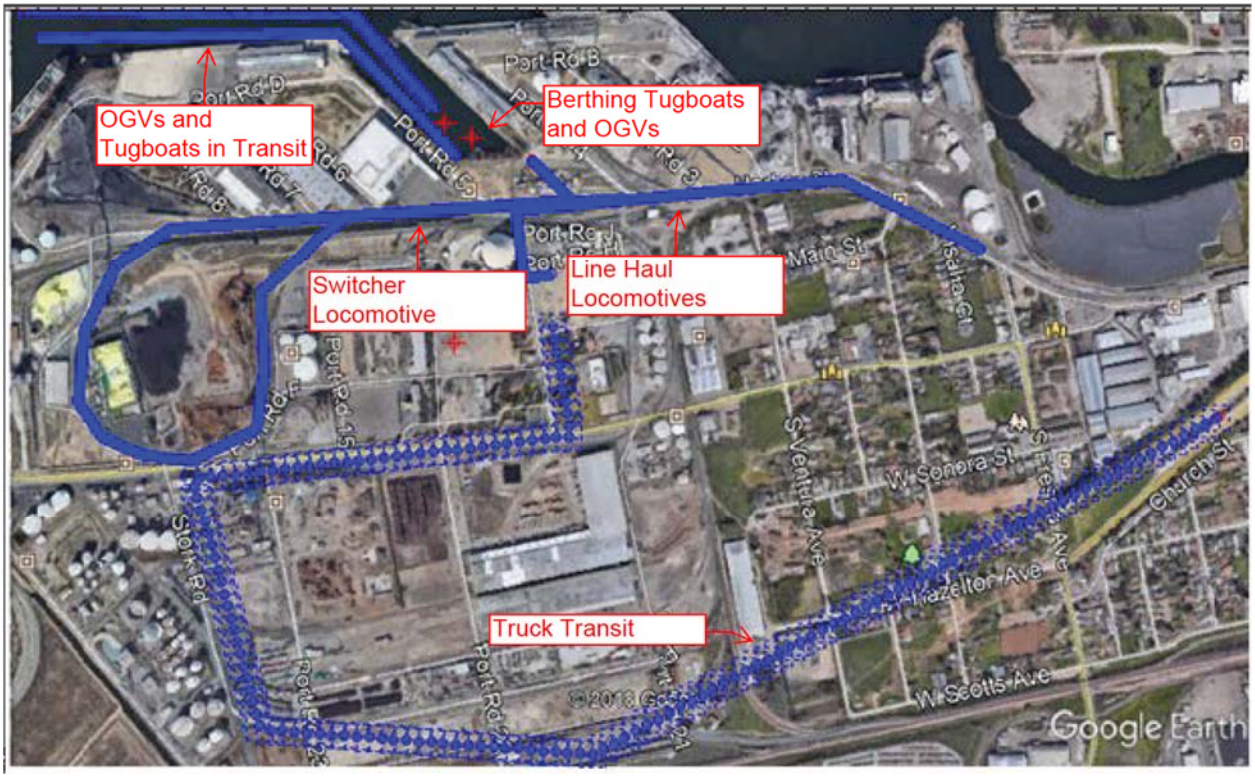
However, our review of Google maps and other information indicates that there are rail lines and truck routes that are shorter and closer to residential areas and would more likely be used in practice. These are shown in Figure 8. Most of the switcher emissions will occur closer to the Project site than shown in Figure 6 because that is where switching operations will take place. Comment 5.6.2.1. Further, trucks are most likely to take the shortest route from I-5 to CA-4, as shown in Figure 8, not the longer route shown in Figure 7. Our review of the HRA modeling files also indicates that the hours of operation of switching and berthing were

[87] DEIR, Appendix A to Appendix E, Figure 3: Representation of Operational Sources in AERMOD, pdf 253.

AB-43 cont.

restricted to daytime hours when dispersion is highest, and thus ambient DPM concentrations are the lowest.

Figure 8: Case 1—Location of Truck and Rail Routes Representing Shortest Distances Modeled in Revised HRA



We attempted to reproduce the DEIR's HRA results by trial and error location of line sources, yielding an MEI cancer risk of 7.4 in one million (Figure 9), compared to the value reported in the HRA of 7.0 in one million.[88] Our results, called Case 1, are presented in Figures 9 and 10. These figures represent our best estimate of future residential risks, given the scope of the Project.

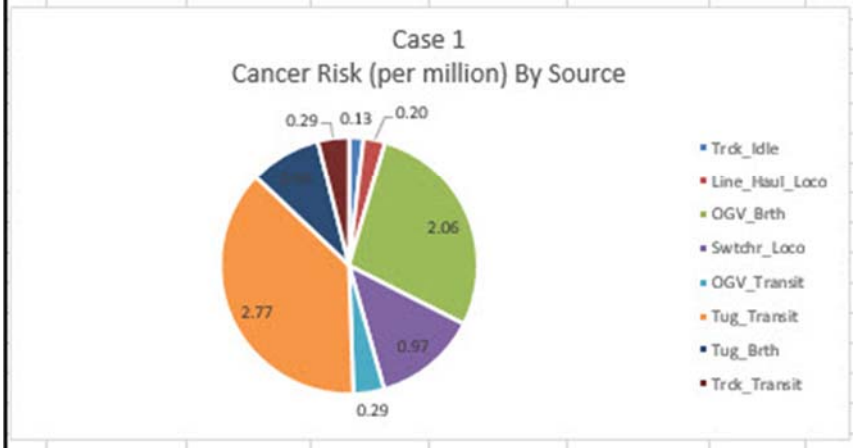
[88] DEIR, Appendix D, Table 8, pdf 248.

AB-43 cont.

Figure 9: Case 1—Residential Cancer Risk for DEIR Modeling Assumptions

Case 1

Source	lbs/yr DPM	Risk	Risk/Million	Plotted
Trck_Idle	1.7	1.3302E-07	0.1330	0.13
Line_Haul_Loc	7.9	2.0130E-07	0.2013	0.20
OGV_Brth	314.9	2.0609E-06	2.0609	2.06
Swtchr_Loco	54.7	9.6547E-07	0.9655	0.97
OGV_Transit	37.7	2.8519E-07	0.2852	0.29
Tug_Transit	75.6	2.7721E-06	2.7721	2.77
Tug_Brth	13.4	6.6311E-07	0.6631	0.66
Trck_Transit	8.2	2.8827E-07	0.2883	0.29
	514.1	7.369E-06		7.37



AB-43 cont.

Figure 10: Case 1—Cancer Risk Isopleth Map

5.6. Case 2: Revised Cancer Risk Based on Corrected Emissions and Modeling Assumptions

Our analysis in Case 1 indicates that the emissions, facility operating hours, and source locations were adjusted inappropriately to minimize health risks. The DPM emissions in Table 1 indicate that the major contributors to cancer risk are the switcher locomotives. Thus, we reviewed the DEIR's emission calculations and modeling assumptions for this source. As discussed below, this review disclosed many unjustified "adjustments" to source locations, operating hours, and emissions, which, when corrected, indicate that cancer risks due to Project operation are highly significant in nearby residential areas.

AB-44

5.6.1. Switcher Locomotive Emissions

Switcher locomotives work within the railyard and are the closest DPM emission source to sensitive receptors. Our analysis indicates that they are the major source of cancer risk. The DEIR's HRA was based on DPM emissions from switcher locomotives of 54.7 lb/yr,[89] compared to 161.3 lb/yr reported in DEIR Table 7, and 208.7 lb/yr reported in the supporting emission calculations in Appendix B to Appendix E. Table 1. Thus, the DEIR's HRA was based on switcher locomotive emissions that are a factor of three to four times lower than reported in the HRA and supporting emission calculations in Appendix B to Appendix E. The DEIR does not contain any explanation for the discrepancy. Reducing the second largest major source of

[89] Calculated from DEIR, Appendix D2, AERMOD Output for Operation. Line source emissions calculated as sum [(emission rate in g/sec-m^2)(length)(width) for line sources].

AB-44 cont.

nearby DPM emissions by nearly a factor of three significantly underestimates health risks.[90] Further, digging into the supporting calculations, we discovered that the switcher emissions are based on assumptions that would not be achieved in practice without enforceable conditions and that significantly underestimate switcher emissions.

Calculations in DEIR Table B-31 indicate that the switcher DPM emissions in HRA Table 7 were based on 57% Tier 0 engines and 43% Tier 4 engines, where the Tier 4 engines have a substantially lower DPM emission rate (0.304 g/gal) than Tier 0 engines (4.864 g/gal). However, the emissions that were modeled, as summarized in Table 1, assume that 50% of the switcher locomotives are Tier 3 and 50% Tier 4,[91] a highly unlikely and unsupported switcher fleet. We could find no evidence that switcher locomotives at the Port of Stockton are a 50:50 mixture of Tier 3 and 4 engines. Unless the Project's switcher engine tier is limited by an enforceable condition in the DEIR that requires 50% Tier 3 and 50% Tier 4 switcher engines for the lifetime of the Project, the HRA should be based on the worst case, which would be 100% Tier 0 engines. Any such requirement must also limit the entire Port switcher fleet such that higher tier engines that would otherwise service the Project are not shifted to another Port client, defeating the purpose of Project mitigation. The corresponding DPM emissions would be 349 lb/yr,[92] resulting in much higher cancer risks than calculated in Case 2, Figure 11.

AB-45

5.6.2. Switcher Locomotive Modeling Errors

In addition to underestimating emissions included in the HRA modeling, various other modeling assumptions were made that underestimate cancer impacts.

5.6.2.1. Switcher Location

The DEIR asserts that it conservatively assumed in the modeling that all switcher locomotive emissions would occur on the Project site,[93] while the switchers would actually operate throughout the Port of Stockton, without providing any support or any figure demonstrating that the emissions that occurred offsite would not be closer to sensitive receptors than those on the Project site, or disclosing the actual fraction of offsite emissions.

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[90] The HRA also modeled higher line haul locomotive DPM emissions (7.89 lb/yr) than reported in Table 7 (3.3 lb/yr). However, this overestimate has negligible impact on cancer risks as line haul locomotive emissions are a tiny fraction of the total DPM emissions reported in DEIR Table 7.

[91] From DEIR, Appendix B of Appendix E, Table B-19, pdf 285: DPM Emission Factor = (4.864 g/gal)(0.51) + (0.304 g/gal)(0.43) = **2.6114 g/gal**; (208.68 lb/yr)(454 g/lb)/2.61 g/gal = **36,299 gal diesel fuel/yr**. Emission factor assumed in HRA: (54.7 lb/yr/36,299 gal/yr) =(0.0015 lb/gal)(454 g/lb) **= 0.68 g/gal.** The average of the Tier 3 and 4 PM10 emission factors for switcher is (1.216 + 0.304)/2 **= 0.76 g/gal.** Thus, the PM10/DPM emission factor that was modeled in the HRA is roughly the average of the Tier 3 and 4 emission factors. In other words, the HRA assumed that about 50% of the switcher locomotives would have Tier 3 engines and 50% would have Tier 4 engines.

[92] DPM emissions assuming 100% Tier 0: (32,557 gal/yr)(4.864 g/gal)/454 g/lb = **348.8 lb/yr.**

[93] DEIR, Appendix B: Emission Calculation Tables of Appendix E: Air Quality and Greenhouse Gas Report, pdf 243.

AB-45 cont.

Our analyses indicate that the location of the switcher emissions was shifted to the south and west, away from homes. See Figure 6. However, train tracks are very close to homes. See Figure 6. If offsite emissions are closer to sensitive receptors, and Figures ES-1 and 1 in the DEIR[94] suggest they are, cancer risks at the nearest residential receptor would be much higher than reported in the DEIR and in the corrected analyses we report for Case 2 in Figure 11. Our analysis in Case 2 indicates the cancer risks are highly significant in adjacent residential neighborhoods.

AB-46

5.6.2.2. Operating Hours

The HRA assumed that switcher emissions would occur from only from 7:00 AM to 3:00 PM to "reflect their normal operating schedule."[95] The HRA also assumed line haul locomotives would operate between 6:00 AM and 4:00 PM. No support is provided for these assumed "normal operating schedules." In fact, the Port and railroads operate around the clock.

The time of day modeled in the HRA is the period when atmospheric dispersion is most favorable, leading to lower ambient concentrations of DPM and thus lower cancer risk than if nighttime hours were modeled. There is nothing in the DEIR (e.g., mitigation measures and enforceable conditions) that restricts switching and line haul operations to these hours. Absent enforceable conditions, there is nothing that would prevent switching and line haul operations from occurring during any day or night hours. Thus, we modeled switcher and line haul emissions as occurring 24 hours per day, 365 days per year.[96]

AB-47

5.6.3. Line Source Modeling Errors

The emissions from line-haul locomotives and trucks were modeled as line sources. Our review of the modeling files revealed that the DEIR adjusted the location of roads and rail tracks to avoid residential areas when shorter routes, closer to residential areas, would be used in practice. For example, the trucks could reach SR 4 through a shorter route along Harbor Street than shown in Figure 3, "Representation of Operational Sources in AERMOD." Similarly, there are train tracks along Harbor Street and West of South Ventura Avenue. The DEIR assumed that DPM emissions would not occur along roads and tracks that are adjacent to residential areas but fails to include enforceable conditions to prohibit the use of these nearby routes.

AB-48

5.7. Revised Cancer HRA, Correcting Noted Modeling Errors

We reran the HRA, correcting the errors discussed above. Our revised analysis assumes switcher DPM emissions of 208.7 lb/yr (instead of 54.7 lb/yr, modeled in the DEIR) that occur around the clock, and switcher and truck routes adjacent to residential areas, but otherwise

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[94] DEIR, pdf 4 and 29.

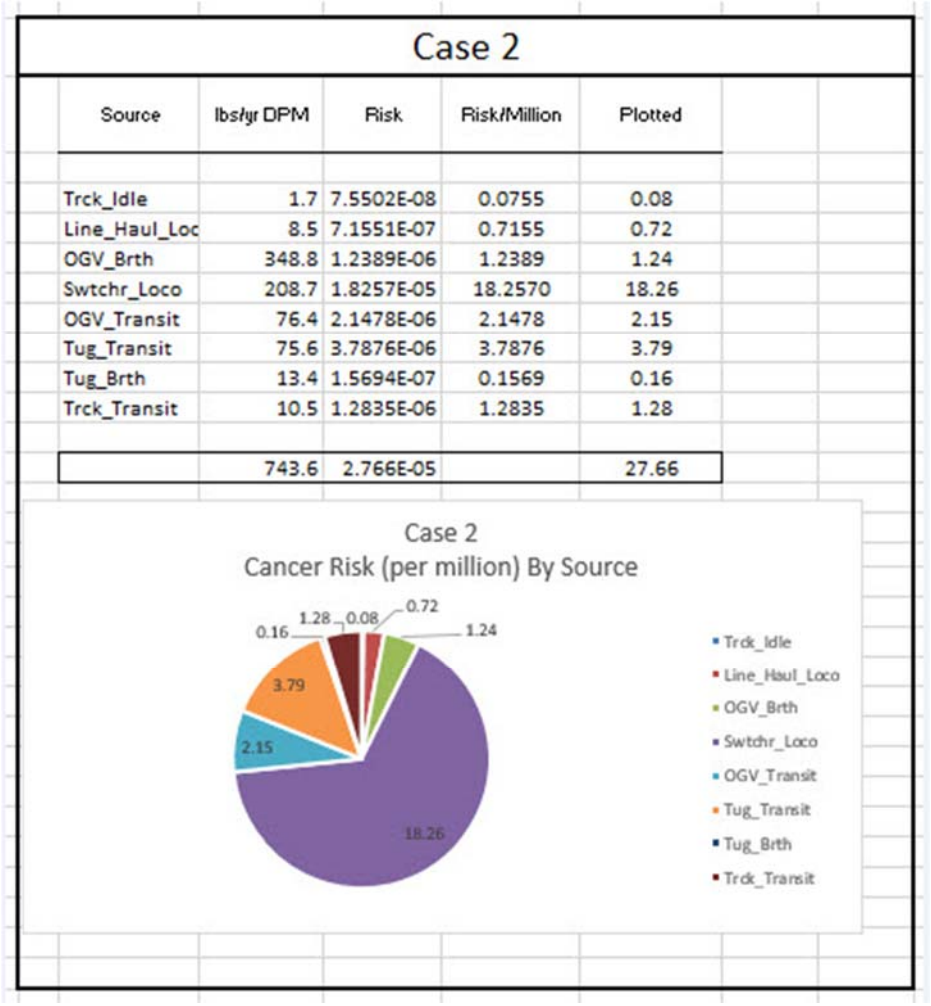
[95] DEIR, pdf 246.

[96] See, *e.g.*, DEIR, Table 3, pdf 242, 360 manifest trains per year.

AB-48 cont.

retaining the DEIR's assumptions. The results of our analysis, Case 2, are shown in Figures 11 and 12.

Figure 11: Case 2—Revised Health Risk Assessment



Case 2

Source	lbs/yr DPM	Risk	Risk/Million	Plotted
Trck_Idle	1.7	7.5502E-08	0.0755	0.08
Line_Haul_Loc	8.5	7.1551E-07	0.7155	0.72
OGV_Brth	348.8	1.2389E-06	1.2389	1.24
Swtchr_Loco	208.7	1.8257E-05	18.2570	18.26
OGV_Transit	76.4	2.1478E-06	2.1478	2.15
Tug_Transit	75.6	3.7876E-06	3.7876	3.79
Tug_Brth	13.4	1.5694E-07	0.1569	0.16
Trck_Transit	10.5	1.2835E-06	1.2835	1.28
	743.6	2.766E-05		27.66

The isopleth map for our Case 2 analysis is shown in Figure 12.

Figure 12: Case 2—Isopleth Map

AB-48 cont

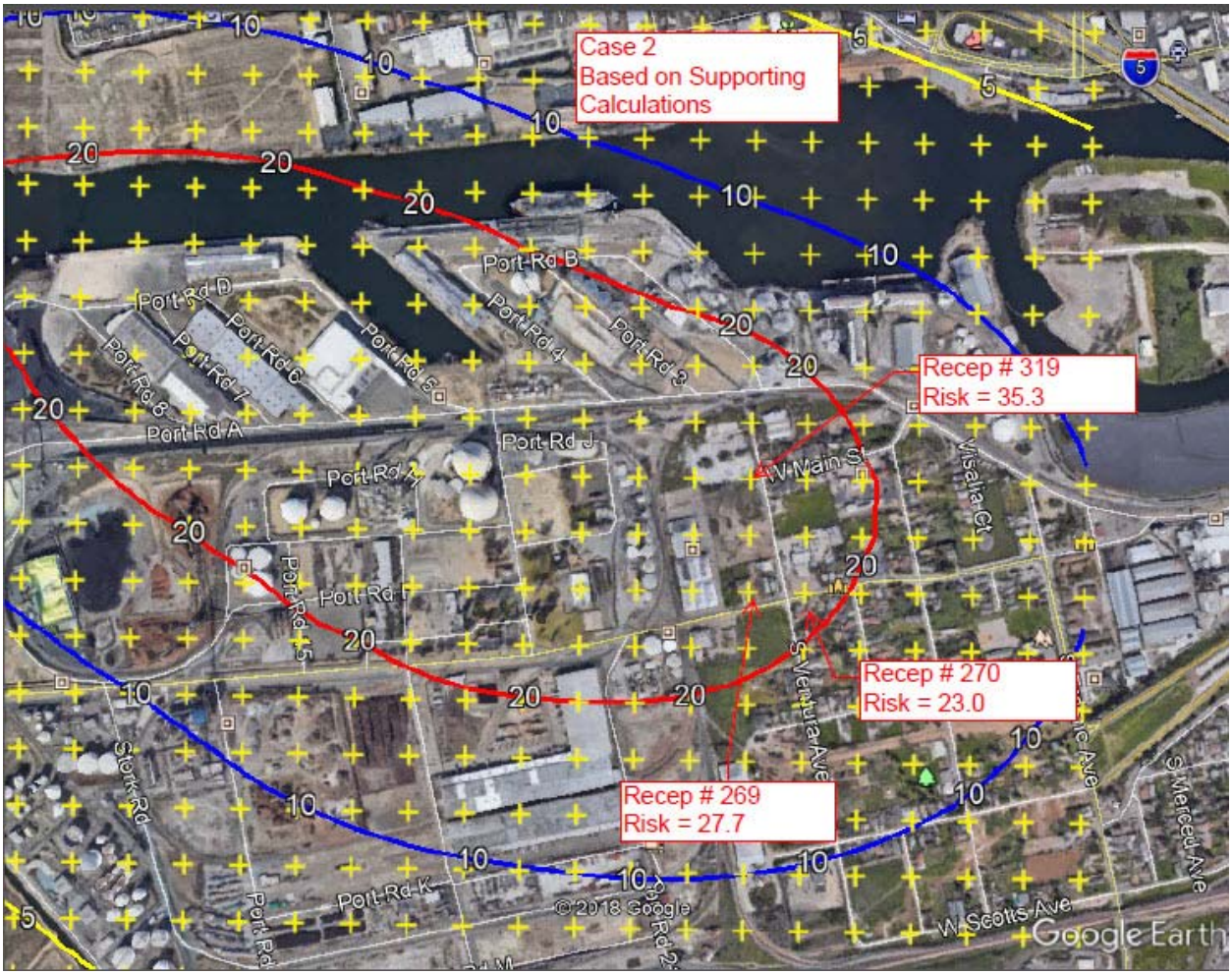


Figure 12 shows that the 30-year cancer risk at the nearest home (receptor #269) is 27.7 per million, compared to the DEIR's cancer significance threshold of 20 per million. Thus, residential cancer risks are significant. Figure 12 also shows that other residences in the general area of the MEI will also exceed the cancer significance threshold. Thus, without enforceable conditions requiring the assumptions modeled in the DEIR's HRA, the DEIR must conclude that residential cancer risks are significant and propose enforceable mitigation.

Further, Figure 12 indicates that there are other locations that have higher risks than at the MEI. However, the information available to us suggests those locations currently do not have residences. Based on our review of Google maps, locations with these higher risks (greater than 27.7 cancers per million) likely have outdoor workers. The DEIR's worker HRA includes all of the errors and omissions discussed above for residential exposures. We did not have time to redo the operational worker HRA. A revised DEIR should be prepared that includes an updated worker HRA.

Thus, the DEIR fails as an informational document under CEQA. A revised DEIR should be prepared and recirculated for review that includes corrected residential and worker HRAs.

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5.8. Acute Health Impacts

The HRA asserts that the proposed Project would not result in significant "acute health hazards," pointing to Table 15 of Appendix E. However, this table does not report the results of an acute health impacts analysis. Elsewhere, the DEIR asserts: "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."[97] A hazard index is not a "probability" but rather the ratio of the modeled 1-hour concentration to the REL.

The absence of an OEHHA acute risk exposure level does not excuse the applicant from evaluating acute health risks. In the absence of an OEHHA significance threshold, it is standard practice to conduct a literature search to determine if other authorities have established a threshold. We conducted this analysis and determined that since OEHHA last evaluated health impacts of DPM in 1998,[98] substantial additional research has been conducted on acute health impacts of DPM.[99] Based on this more current research, Canada recently established an acute REL for DPM of 10 $\mu g/m^3$ to protect against adverse effects on the respiratory system.[100] There is no regulation or guidance requiring that only OEHHA RELs be used.

The significance of acute exposures is generally assessed using the hazard index (HI) approach. A hazard index is calculated as sum of the ratio of the calculated 1-hour concentrations for each HAP, divided by their respective reference exposure level, in this case 10 $\mu g/m^3$. The SJVAPCD significance threshold for acute exposures is a hazard index of 1 for the maximally exposed individual. However, this threshold only applies to non-carcinogens.[101]

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[97] DEIR, Appendix E, pdf 245.

[98] Findings of the Scientific Review Panel on the Report on Diesel Exhaust, 1998; available at https://www.arb.ca.gov/toxics/dieseltac/de-fnds.pdf.

[99] See, *e.g.*, A. A. Mehus and others, Comparison of Acute Health Effects from Exposures to Diesel and Biodiesel Fuel Emissions and references cited therein, *Journal of Occupational and Environmental Medicine*, v. 57, no. 7, pp. 705-712, July 2015; available at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4479787/.

[100] Government of Canada, Human Health Risk Assessment for Diesel Exhaust, March 4, 2016; available at http://publications.gc.ca/collections/collection_2016/sc-hc/H129-60-2016-eng.pdf. See Exhibits 4 and 5.

[101] SJVAPCD, Air Quality Thresholds of Significance—Toxic Air Contaminants; available at: http://www.valleyair.org/transportation/0714-GAMAQI-TACs-Thresholds-of-Significance.pdf.

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5.8.1. Acute Health Impacts of Construction

We conducted an acute risk assessment for Project construction, using the DEIR's DPM emission rate (366 lb/yr) and assuming construction between 8 AM and 4 PM. We used the same source location and parameters as the applicant.[102] The results of this analysis are summarized in Figure 13. Significant acute health impacts (HI=/>1; DPM concentration =/> 10 µg/m^3) occur within 35 meters to the south and 80 meters to the west of the Project site boundary, in locations where workers would be found, including at the adjacent Contanda Terminal. Thus, acute health impacts to workers in the vicinity of the Project are significant and unmitigated.

Figure 13: Acute Health Impacts of Project Construction (µg/m^3)

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5.8.2. Acute Health Impacts of Project Operation

We conducted an acute risk assessment for Project operation. The highest 25 1-hour DPM concentrations, which range from 366 to 1,737 µg/m^3, are summarized in Table 2 for Case 1 (the DEIR's modeling assumptions). The highest 25 1-hour DPM concentrations, which range from 232 to 344 µg/m^3, are summarized in Table 3 for Case 2 (our revised modeling assumptions). All of these concentrations exceed the acute REL of 10 µg/m$_3$ and a hazard index of 1 in both cases by a significant amount.

[102] DEIR, pdf 369, AERMOD Output Listing.

Table 2: Case 1—1-Hour DPM Concentrations (μg/m³) at the Highest 25 Locations

647100	4201150	1737.3
647200	4201150	686.2
647100	4201250	620.8
647100	4201450	570.8
647100	4201050	559.5
647000	4201150	554.1
647200	4201450	545.2
647400	4201450	539.2
647000	4201450	537.6
647300	4201450	535.7
647200	4201250	532.3
647000	4201350	511.5
647100	4201350	505.2
646900	4201350	500.5
646900	4201450	494.4
647500	4201450	480.7
647200	4201050	468.7
647200	4201350	444.9
647000	4201250	417.3
646800	4201450	416.8
646800	4201350	409.4
647300	4201350	398.6
647000	4201050	396.6
647200	4201550	393.3
647400	4201350	366.2

Table 3: Case 2—1-Hour DPM Concentrations (μg/m³) at the Highest 25 Locations

647400	4201450	344.13
647500	4201450	332.32
647300	4201450	311.15
647000	4201450	300.24
646900	4201450	298.43
647100	4201450	295.41
647200	4201450	288.46
646900	4201350	276.45
647600	4201450	274.19
646800	4201450	268.29
647000	4201350	267.24
647400	4201350	263.84
647500	4201350	260.83
646900	4201650	256.82
647300	4201350	253.91
646800	4201350	250.15
647100	4201350	247.21
647100	4201550	244.58
647600	4201350	242.97
647000	4201550	241.68
647200	4201550	239.09
647200	4201350	238.71
646900	4201550	234.32
646700	4201450	232.60
647300	4201550	232.11

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The locations where the acute REL is exceeded in both cases include residential neighborhoods, commercial areas, and the Washington Elementary School. The Case 1 1-hour DPM concentration at Washington Elementary is 117 μg/m³. The corresponding acute hazard index is 12. The Case 2 1-hour DPM concentration at Washington Elementary is 134 μg/m³. The corresponding acute hazard index is 13. Both of these acute hazard indices indicate significant health impacts at the location sensitive receptors.

The physical locations of three of the Case 1 acute 1-hour concentrations are shown in Figure 14. This figure shows that acute health impacts would be highly significant at many locations where workers would be present, as well as in residential neighborhoods and at the Washington Elementary School.

In general, it has been shown that sensitive subpopulations, such as the elderly, children and asthmatics, can be at greater risk of adverse respiratory effects due to DPM exposure. Thus, the elevated levels at Washington Elementary School, under all train routing scenarios, are highly significant and must be mitigated.

Figure 14: Case 1—Locations of Select Acute DPM Concentrations

Regardless, the acute REL at the MEI is 1,737 µg/m^3, which exceeds the acute REL of 10 µg/m^3 by a factor of 174. The corresponding hazard index is 174, which exceeds the REL significance threshold of 1 by a factor of 174. Thus, regardless of which metric is used, acute impacts of Project operation are significant. This is a new impact not disclosed in the DEIR and must be mitigated.

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5.9. Summary of Key Health Risk Findings

In sum, based on our detailed review of the HRA and supporting modeling files supplied in response to PRAs, we conclude that:

1. The DEIR contains numerous invalid assumptions and errors that understate the actual residential cancer risk.
2. Construction health impacts may be significant if one takes into account short-term (acute) health impacts, which were not evaluated.
3. Use of more realistic emission rates for switcher locomotives and other sources and their potential locations indicate the Project would result in a significant cancer risk to residents.
4. Acute health impacts of Project operation for workers, residents, and school children are highly significant and unmitigated.

5. Cumulative cancer and acute health impacts of Project construction and operation were not evaluated and are highly significant.

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Dr. Fox has over 40 years of experience in the field of environmental engineering, including air pollution control (BACT, BART, MACT, LAER, RACT), greenhouse gas emissions and control, cost effectiveness analyses, water quality and water supply investigations, hydrology, hazardous waste investigations, environmental permitting, nuisance investigations (odor, noise), environmental impact reports, CEQA/NEPA documentation, risk assessments, and litigation support.

EDUCATION

Ph.D. Environmental/Civil Engineering, University of California, Berkeley, 1980.
M.S. Environmental/Civil Engineering, University of California, Berkeley, 1975.
B.S. Physics (with high honors), University of Florida, Gainesville, 1971.

REGISTRATION

Registered Professional Engineer: Arizona (2001-2014: #36701; retired), California (2002-present; CH 6058), Florida (2001-present; #57886), Georgia (2002-2014; #PE027643; retired), Washington (2002-2014; #38692; retired), Wisconsin (2005-2014; #37595-006; retired)
Board Certified Environmental Engineer, American Academy of Environmental Engineers, Certified in Air Pollution Control (DEE #01-20014), 2002-present
Qualified Environmental Professional (QEP), Institute of Professional Environmental Practice (QEP #02-010007), 2001-present

PROFESSIONAL HISTORY

Environmental Management, Principal, 1981-present
Lawrence Berkeley National Laboratory, Principal Investigator, 1977-1981
University of California, Berkeley, Program Manager, 1976-1977
Bechtel, Inc., Engineer, 1971-1976, 1964-1966

PROFESSIONAL AFFILIATIONS

American Chemical Society (1981-2010)
Phi Beta Kappa (1970-present)
Sigma Pi Sigma (1970-present)

Who's Who Environmental Registry, PH Publishing, Fort Collins, CO, 1992.
Who's Who in the World, Marquis Who's Who, Inc., Chicago, IL, 11th Ed., p. 371, 1993-present.
Who's Who of American Women, Marquis Who's Who, Inc., Chicago, IL, 13th Ed., p. 264, 1984-present.
Who's Who in Science and Engineering, Marquis Who's Who, Inc., New Providence, NJ, 5th Ed., p. 414, 1999-present.
Who's Who in America, Marquis Who's Who, Inc., 59th Ed., 2005.
Guide to Specialists on Toxic Substances, World Environment Center, New York, NY, p. 80, 1980.
National Research Council Committee on Irrigation-Induced Water Quality Problems (Selenium), Subcommittee on Quality Control/Quality Assurance (1985-1990).
National Research Council Committee on Surface Mining and Reclamation, Subcommittee on Oil Shale (1978-80)

REPRESENTATIVE EXPERIENCE

Performed environmental and engineering investigations, as outlined below, for a wide range of industrial and commercial facilities including: petroleum refineries and upgrades thereto; reformulated fuels projects; refinery upgrades to process heavy sour crudes, including tar sands and light sweet crudes from the Eagle Ford and Bakken Formations; petroleum distribution terminals; coal, coke, and ore/mineral export terminals; LNG export, import, and storage terminals; crude-by-rail projects; shale oil plants; crude oil/condensate marine and rail terminals; coal gasification & liquefaction plants; conventional and thermally enhanced oil production; oil and gas production, including hydraulic fracking and acid stimulation treatments; underground storage tanks; pipelines; compressor stations; gasoline stations; landfills; railyards; hazardous waste treatment facilities; nuclear, hydroelectric, geothermal, wood, biomass, waste, tire-derived fuel, gas, oil, coke and coal-fired power plants; transmission lines; airports; hydrogen plants; petroleum coke calcining plants; coke plants; activated carbon manufacturing facilities; asphalt plants; cement plants; incinerators; flares; manufacturing facilities (e.g., semiconductors, electronic assembly, aerospace components, printed circuit boards, amusement park rides); lanthanide processing plants; ammonia plants; nitric acid plants; urea plants; food processing plants; almond hulling facilities; composting facilities; grain processing facilities; grain elevators; ethanol production facilities; soy bean oil extraction plants; biodiesel plants; paint formulation plants; wastewater treatment plants; marine terminals and ports; gas processing plants; steel mills; iron nugget production facilities; pig iron plant, based on blast furnace technology; direct reduced iron plant; acid regeneration facilities; railcar refinishing facility; battery manufacturing plants; pesticide manufacturing and repackaging facilities; pulp and paper mills; olefin plants; methanol plants; ethylene crackers; desalination plants; selective catalytic reduction (SCR) systems; selective noncatalytic reduction (SNCR) systems; halogen acid furnaces; contaminated

property redevelopment projects (e.g., Mission Bay, Southern Pacific Railyards, Moscone Center expansion, San Diego Padres Ballpark); residential developments; commercial office parks, campuses, and shopping centers; server farms; transportation plans; and a wide range of mines including sand and gravel, hard rock, limestone, nacholite, coal, molybdenum, gold, zinc, and oil shale.

EXPERT WITNESS/LITIGATION SUPPORT

- For the California Attorney General, assist in determining compliance with probation terms in the matter of People v. Chevron USA.
- For plaintiffs, assist in developing Petitioners' proof brief for National Parks Conservation Association et al v. U.S. EPA, Petition for Review of Final Administrative Action of the U.S. EPA, In the U.S. Court of Appeals for the Third Circuit, Docket No. 14-3147.
- For plaintiffs, expert witness in civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1997-2000) at the Cemex cement plant in Lyons, Colorado. Reviewed produced documents, prepared expert and rebuttal reports on PSD applicability based on NOx emission calculations for a collection of changes considered both individually and collectively. Deposed August 2011. *United States v. Cemex, Inc.*, In U.S. District Court for the District of Colorado (Civil Action No. 09-cv-00019-MSK-MEH). Case settled June 13, 2013.
- For plaintiffs, in civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1988 – 2000) at James De Young Units 3, 4, and 5. Reviewed produced documents, analyzed CEMS and EIA data, and prepared netting and BACT analyses for NOx, SO2, and PM10 (PSD case). Expert report February 24, 2010 and affidavit February 20, 2010. *Sierra Club v. City of Holland, et al.*, U.S. District Court, Western District of Michigan (Civil Action 1:08-cv-1183). Case settled. Consent Decree 1/19/14.
- For plaintiffs, in civil action alleging failure to obtain MACT permit, expert on potential to emit hydrogen chloride (HCl) from a new coal-fired boiler. Reviewed record, estimated HCl emissions, wrote expert report June 2010 and March 2013 (Cost to Install a Scrubber at the Lamar Repowering Project Pursuant to Case-by-Case MACT), deposed August 2010 and March 2013. *Wildearth Guardian et al. v. Lamar Utilities Board,* Civil Action No. 09-cv-02974, U.S. District Court, District of Colorado. Case settled August 2013.
- For plaintiffs, expert witness on permitting, emission calculations, and wastewater treatment for coal-to-gasoline plant. Reviewed produced documents. Assisted in preparation of comments on draft minor source permit. Wrote two affidavits on key issues in case. Presented direct and rebuttal testimony 10/27 - 10/28/10 on permit enforceability and failure to properly calculate potential to emit, including underestimate of flaring emissions and

omission of VOC and CO emissions from wastewater treatment, cooling tower, tank roof landings, and malfunctions. *Sierra Club, Ohio Valley Environmental Coalition, Coal River Mountain Watch, West Virginia Highlands Conservancy v. John Benedict, Director, Division of Air Quality, West Virginia Department of Environmental Protection and TransGas Development System, LLC,* Appeal No. 10-01-AQB. Virginia Air Quality Board remanded the permit on March 28, 2011 ordering reconsideration of potential to emit calculations, including: (1) support for assumed flare efficiency; (2) inclusion of startup, shutdown and malfunction emissions; and (3) inclusion of wastewater treatment emissions in potential to emit calculations.

- For plaintiffs, expert on BACT emission limits for gas-fired combined cycle power plant. Prepared declaration in support of CBE's Opposition to the United States' Motion for Entry of Proposed Amended Consent Decree. Assisted in settlement discussions. *U.S. EPA, Plaintiff, Communities for a Better Environment, Intervenor Plaintiff, v. Pacific Gas & Electric Company, et al.,* U.S. District Court, Northern District of California, San Francisco Division, Case No. C-09-4503 SI.
- Technical expert in confidential settlement discussions with large coal-fired utility on BACT control technology and emission limits for NOx, SO2, PM, PM2.5, and CO for new natural gas fired combined cycle and simple cycle turbines with oil backup. (July 2010). Case settled.
- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1998-99) at Gallagher Units 1 and 3. Reviewed produced documents, prepared expert and rebuttal reports on historic and current-day BACT for SO2, control costs, and excess emissions of SO2. Deposed 11/18/09. *United States et al. v. Cinergy, et al.,* In U.S. District Court for the Southern District of Indiana, Indianapolis Division, Civil Action No. IP99-1693 C-M/S. Settled 12/22/09.
- For plaintiffs, expert witness on MACT, BACT for NOx, and enforceability in an administrative appeal of draft state air permit issued for four 300-MW pet-coke-fired CFBs. Reviewed produced documents and prepared prefiled testimony. Deposed 10/8/09 and 11/9/09. Testified 11/10/09. *Application of Las Brisas Energy Center, LLC for State Air Quality Permit*; before the State Office of Administrative Hearings, Texas. Permit remanded 3/29/10 as LBEC failed to meet burden of proof on a number of issues including MACT. Texas Court of Appeals dismissed an appeal to reinstate the permit. The Texas Commission on Environmental Quality and Las Brisas Energy Center, LLC sought to overturn the Court of Appeals decision but moved to have their appeal dismissed in August 2013.
- For defense, expert witness in unlawful detainer case involving a gasoline station, minimart, and residential property with contamination from leaking underground storage tanks. Reviewed agency files and inspected site. Presented expert testimony on July 6, 2009, on

causes of, nature and extent of subsurface contamination. *A. Singh v. S. Assaedi,* in Contra Costa County Superior Court, CA. Settled August 2009.

- For plaintiffs, expert witness on netting and enforceability for refinery being upgraded to process tar sands crude. Reviewed produced documents. Prepared expert and rebuttal reports addressing use of emission factors for baseline, omitted sources including coker, flares, tank landings and cleaning, and enforceability. Deposed. *In the Matter of Objection to the Issuance of Significant Source Modification Permit No. 089-25484-00453 to BP Products North America Inc., Whiting Business Unit, Save the Dunes Council, Inc., Sierra Club., Inc., Hoosier Environmental Council et al., Petitioners, B. P. Products North American, Respondents/Permittee,* before the Indiana Office of Environmental Adjudication.
- For plaintiffs, expert witness on BACT, MACT, and enforceability in appeal of Title V permit issued to 600 MW coal-fired power plant burning Powder River Basin coal. Prepared technical comments on draft air permit. Reviewed record on appeal, drafted BACT, MACT, and enforceability pre-filed testimony. Drafted MACT and enforceability pre-filed rebuttal testimony. Deposed March 24, 2009. Testified June 10, 2009. *In Re: Southwestern Electric Power Company*, Arkansas Pollution Control and Ecology Commission, Consolidated Docket No. 08-006-P. Recommended Decision issued December 9, 2009 upholding issued permit. Commission adopted Recommended Decision January 22, 2010.
- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications (1989-1992) at Wabash Units 2, 3 and 5. Reviewed produced documents, prepared expert and rebuttal report on historic and current-day BACT for NOx and SO2, control costs, and excess emissions of NOx, SO2, and mercury. Deposed 10/21/08. *United States et al. v. Cinergy, et al.*, In U.S. District Court for the Southern District of Indiana, Indianapolis Division, Civil Action No. IP99-1693 C-M/S. Testified 2/3/09. Memorandum Opinion & Order 5-29-09 requiring shutdown of Wabash River Units 2, 3, 5 by September 30, 2009, run at baseline until shutdown, and permanently surrender SO2 emission allowances.
- For plaintiffs, expert witness in liability phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for three historic modifications (1997-2001) at two portland cement plants involving three cement kilns. Reviewed produced documents, analyzed CEMS data covering subject period, prepared netting analysis for NOx, SO_2 and CO, and prepared expert and rebuttal reports. *United States v. Cemex California Cement,* In U.S. District Court for the Central District of California, Eastern Division, Case No. ED CV 07-00223-GW (JCRx), Settled 1/15/09.
- For intervenors Clean Wisconsin and Citizens Utility Board, prepared data requests, reviewed discovery and expert report. Prepared prefiled direct, rebuttal and surrebuttal testimony on cost to extend life of existing Oak Creek Units 5-8 and cost to address future regulatory requirements to determine whether to control or shutdown one or more of the units. Oral testimony 2/5/08. Application for a Certificate of Authority to Install Wet Flue

Gas Desulfurization and Selective Catalytic Reduction Facilities and Associated Equipment for Control of Sulfur Dioxide and Nitrogen Oxide Emissions at Oak Creek Power Plant Units 5, 6, 7 and 8, WPSC Docket No. 6630-CE-299.

- For plaintiffs, expert witness on alternatives analysis and BACT for NOx, SO2, total PM10, and sulfuric acid mist in appeal of PSD permit issued to 1200 MW coal fired power plant burning Powder River Basin and/or Central Appalachian coal (Longleaf). Assisted in drafting technical comments on NOx on draft permit. Prepared expert disclosure. Presented 8+ days of direct and rebuttal expert testimony. Attended all 21 days of evidentiary hearing from 9/5/07 – 10/30/07 assisting in all aspects of hearing. *Friends of the Chatahooche and Sierra Club v. Dr. Carol Couch, Director, Environmental Protection Division of Natural Resources Department, Respondent, and Longleaf Energy Associates, Intervener*. ALJ Final Decision 1/11/08 denying petition. ALJ Order vacated & remanded for further proceedings, Fulton County Superior Court, 6/30/08. Court of Appeals of GA remanded the case with directions that the ALJ's final decision be vacated to consider the evidence under the correct standard of review, July 9, 2009. The ALJ issued an opinion April 2, 2010 in favor of the applicant. Final permit issued April 2010.
- For plaintiffs, expert witness on diesel exhaust in inverse condemnation case in which Port expanded maritime operations into residential neighborhoods, subjecting plaintiffs to noise, light, and diesel fumes. Measured real-time diesel particulate concentrations from marine vessels and tug boats on plaintiffs' property. Reviewed documents, depositions, DVDs, and photographs provided by counsel. Deposed. Testified October 24, 2006. *Ann Chargin, Richard Hackett, Carolyn Hackett, et al. v. Stockton Port District*, Superior Court of California, County of San Joaquin, Stockton Branch, No. CV021015. Judge ruled for plaintiffs.
- For plaintiffs, expert witness on NOx emissions and BACT in case alleging failure to obtain necessary permits and install controls on gas-fired combined-cycle turbines. Prepared and reviewed (applicant analyses) of NOx emissions, BACT analyses (water injection, SCR, ultra low NOx burners), and cost-effectiveness analyses based on site visit, plant operating records, stack tests, CEMS data, and turbine and catalyst vendor design information. Participated in negotiations to scope out consent order. *United States v. Nevada Power.* Case settled June 2007, resulting in installation of dry low NOx burners (5 ppm NOx averaged over 1 hr) on four units and a separate solar array at a local business.
- For plaintiffs, expert witness in appeal of PSD permit issued to 850 MW coal fired boiler burning Powder River Basin coal (Iatan Unit 2) on BACT for particulate matter, sulfuric acid mist and opacity and emission calculations for alleged historic violations of PSD. Assisted in drafting technical comments, petition for review, discovery requests, and responses to discovery requests. Reviewed produced documents. Prepared expert report on BACT for particulate matter. Assisted with expert depositions. Deposed February 7, 8, 27, 28, 2007. *In Re PSD Construction Permit Issued to Great Plains Energy, Kansas City Power & Light – Iatan Generating Station, Sierra Club v. Missouri Department of Natural Resources, Great*

Plains Energy, and Kansas City Power & Light. Case settled March 27, 2007, providing offsets for over 6 million ton/yr of CO2 and lower NOx and SO_2 emission limits.

- For plaintiffs, expert witness in remedy phase of civil action relating to alleged violations of the Clean Air Act, Prevention of Significant Deterioration, for historic modifications of coal-fired boilers and associated equipment. Reviewed produced documents, prepared expert report on cost to retrofit 24 coal-fired power plants with scrubbers designed to remove 99% of the sulfur dioxide from flue gases. Prepared supplemental and expert report on cost estimates and BACT for SO2 for these 24 complaint units. Deposed 1/30/07 and 3/14/07. *United States and State of New York et al. v. American Electric Power*, In U.S. District Court for the Southern District of Ohio, Eastern Division, Consolidated Civil Action Nos. C2-99-1182 and C2-99-1250. Settlement announced 10/9/07.
- For plaintiffs, expert witness on BACT, enforceability, and alternatives analysis in appeal of PSD permit issued for a 270-MW pulverized coal fired boiler burning Powder River Basin coal (City Utilities Springfield Unit 2). Reviewed permitting file and assisted counsel draft petition and prepare and respond to interrogatories and document requests. Reviewed interrogatory responses and produced documents. Assisted with expert depositions. Deposed August 2005. Evidentiary hearings October 2005. *In the Matter of Linda Chipperfield and Sierra Club v. Missouri Department of Natural Resources.* Missouri Supreme Court denied review of adverse lower court rulings August 2007.
- For plaintiffs, expert witness in civil action relating to plume touchdowns at AEP's Gavin coal-fired power plant. Assisted counsel draft interrogatories and document requests. Reviewed responses to interrogatories and produced documents. Prepared expert report "Releases of Sulfuric Acid Mist from the Gavin Power Station." The report evaluates sulfuric acid mist releases to determine if AEP complied with the requirements of CERCLA Section 103(a) and EPCRA Section 304. This report also discusses the formation, chemistry, release characteristics, and abatement of sulfuric acid mist in support of the claim that these releases present an imminent and substantial endangerment to public health under Section 7002(a)(1)(B) of the Resource Conservation and Recovery Act ("RCRA"). *Citizens Against Pollution v. Ohio Power Company*, In the U.S. District Court for the Southern District of Ohio, Eastern Division, Civil Action No. 2-04-cv-371. Case settled 12-8-06.

- For petitioners, expert witness in contested case hearing on BACT, enforceability, and emission estimates for an air permit issued to a 500-MW supercritical Power River Basin coal-fired boiler (Weston Unit 4). Assisted counsel prepare comments on draft air permit and respond to and draft discovery. Reviewed produced file, deposed (7/05), and prepared expert report on BACT and enforceability. Evidentiary hearings September 2005. *In the Matter of an Air Pollution Control Construction Permit Issued to Wisconsin Public Service Corporation for the Construction and Operation of a 500 MW Pulverized Coal-fired Power Plant Known as Weston Unit 4 in Marathon County, Wisconsin*, Case No. IH-04-21. The Final Order, issued 2/10/06, lowered the NOx BACT limit from 0.07 lb/MMBtu to 0.06

lb/MMBtu based on a 30-day average, added a BACT SO2 control efficiency, and required a 0.0005% high efficiency drift eliminator as BACT for the cooling tower. The modified permit, including these provisions, was issued 3/28/07. Additional appeals in progress.

- For plaintiffs, adviser on technical issues related to Citizen Suit against U.S. EPA regarding failure to update New Source Performance Standards for petroleum refineries, 40 CFR 60, Subparts J, VV, and GGG. *Our Children's Earth Foundation and Sierra Club v. U.S. EPA et al.* Case settled July 2005. CD No. C 05-00094 CW, U.S. District Court, Northern District of California – Oakland Division. Proposed revisions to standards of performance for petroleum refineries published 72 FR 27178 (5/14/07).
- For interveners, reviewed proposed Consent Decree settling Clean Air Act violations due to historic modifications of boilers and associated equipment at two coal-fired power plants. In response to stay order, reviewed the record, selected one representative activity at each of seven generating units, and analyzed to identify CAA violations. Identified NSPS and NSR violations for NOx, SO_2, PM/PM10, and sulfuric acid mist. Summarized results in an expert report. *United States of America, and Michael A. Cox, Attorney General of the State of Michigan, ex rel. Michigan Department of Environmental Quality, Plaintiffs, and Clean Wisconsin, Sierra Club, and Citizens' Utility Board, Intervenors, v. Wisconsin Electric Power Company, Defendant,* U.S. District Court for the Eastern District of Wisconsin, Civil Action No. 2:03-CV-00371-CNC. Order issued 10-1-07 denying petition.
- For a coalition of Nevada labor organizations (ACE), reviewed preliminary determination to issue a Class I Air Quality Operating Permit to Construct and supporting files for a 250-MW pulverized coal-fired boiler (Newmont). Prepared about 100 pages of technical analyses and comments on BACT, MACT, emission calculations, and enforceability. Assisted counsel draft petition and reply brief appealing PSD permit to U.S. EPA Environmental Appeals Board (EAB). Order denying review issued 12/21/05. *In re Newmont Nevada Energy Investment, LLC, TS Power Plant,* PSD Appeal No. 05-04 (EAB 2005).
- For petitioners and plaintiffs, reviewed and prepared comments on air quality and hazardous waste based on negative declaration for refinery ultra low sulfur diesel project located in SCAQMD. Reviewed responses to comments and prepared responses. Prepared declaration and presented oral testimony before SCAQMD Hearing Board on exempt sources (cooling towers) and calculation of potential to emit under NSR. Petition for writ of mandate filed March 2005. Case remanded by Court of Appeals to trial court to direct SCAQMD to re-evaluate the potential environmental significance of NOx emissions resulting from the project in accordance with court's opinion. California Court of Appeals, Second Appellate Division, on December 18, 2007, affirmed in part (as to baseline) and denied in part. *Communities for a Better Environment v. South Coast Air Quality Management District and ConocoPhillips and Carlos Valdez et al v. South Coast Air Quality Management District and ConocoPhillips.* Certified for partial publication 1/16/08. Appellate Court opinion upheld by CA Supreme Court 3/15/10. *(2010) 48 Cal.4th 310.*

- For amici seeking to amend a proposed Consent Decree to settle alleged NSR violations at Chevron refineries, reviewed proposed settlement, related files, subject modifications, and emission calculations. Prepared declaration on emission reductions, identification of NSR and NSPS violations, and BACT/LAER for FCCUs, heaters and boilers, flares, and sulfur recovery plants. *U.S. et al. v. Chevron U.S.A.*, Northern District of California, Case No. C 03-04650. Memorandum and Order Entering Consent Decree issued June 2005. Case No. C 03-4650 CRB.
- For petitioners, prepared declaration on enforceability of periodic monitoring requirements, in response to EPA's revised interpretation of 40 CFR 70.6(c)(1). This revision limited additional monitoring required in Title V permits. 69 FR 3203 (Jan. 22, 2004). *Environmental Integrity Project et al. v. EPA* (U.S. Court of Appeals for the District of Columbia). Court ruled the Act requires all Title V permits to contain monitoring requirements to assure compliance. *Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2008).
- For interveners in application for authority to construct a 500 MW supercritical coal-fired generating unit before the Wisconsin Public Service Commission, prepared pre-filed written direct and rebuttal testimony with oral cross examination and rebuttal on BACT and MACT (Weston 4). Prepared written comments on BACT, MACT, and enforceability on draft air permit for same facility.
- For property owners in Nevada, evaluated the environmental impacts of a 1,450-MW coal-fired power plant proposed in a rural area adjacent to the Black Rock Desert and Granite Range, including emission calculations, air quality modeling, comments on proposed use permit to collect preconstruction monitoring data, and coordination with agencies and other interested parties. Project cancelled.
- For environmental organizations, reviewed draft PSD permit for a 600-MW coal-fired power plant in West Virginia (Longview). Prepared comments on permit enforceability; coal washing; BACT for SO_2 and PM10; Hg MACT; and MACT for HCl, HF, non-Hg metallic HAPs, and enforceability. Assist plaintiffs draft petition appealing air permit. Retained as expert to develop testimony on MACT, BACT, offsets, enforceability. Participate in settlement discussions. Case settled July 2004.
- For petitioners, reviewed record produced in discovery and prepared affidavit on emissions of carbon monoxide and volatile organic compounds during startup of GE 7FA combustion turbines to successfully establish plaintiff standing. *Sierra Club et al. v. Georgia Power Company* (Northern District of Georgia).
- For building trades, reviewed air quality permitting action for 1500-MW coal-fired power plant before the Kentucky Department for Environmental Protection (Thoroughbred).
- For petitioners, expert witness in administrative appeal of the PSD/Title V permit issued to a 1500-MW coal-fired power plant. Reviewed over 60,000 pages of produced documents, prepared discovery index, identified and assembled plaintiff exhibits. Deposed. Assisted

counsel in drafting discovery requests, with over 30 depositions, witness cross examination, and brief drafting. Presented over 20 days of direct testimony, rebuttal and sur-rebuttal, with cross examination on BACT for NOx, SO_2, and PM/PM10; MACT for Hg and non-Hg metallic HAPs; emission estimates for purposes of Class I and II air modeling; risk assessment; and enforceability of permit limits. Evidentiary hearings from November 2003 to June 2004. *Sierra Club et al. v. Natural Resources & Environmental Protection Cabinet, Division of Air Quality and Thoroughbred Generating Company et al.* Hearing Officer Decision issued August 9, 2005 finding in favor of plaintiffs on counts as to risk, BACT (IGCC/CFB, NOx, SO_2, Hg, Be), single source, enforceability, and errors and omissions. Assist counsel draft exceptions. Cabinet Secretary issued Order April 11, 2006 denying Hearing Offer's report, except as to NOx BACT, Hg, 99% SO2 control and certain errors and omissions.

- For citizens group in Massachusetts, reviewed, commented on, and participated in permitting of pollution control retrofits of coal-fired power plant (Salem Harbor).
- Assisted citizens group and labor union challenge issuance of conditional use permit for a 317,000 ft^2 discount store in Honolulu without any environmental review. In support of a motion for preliminary injunction, prepared 7-page declaration addressing public health impacts of diesel exhaust from vehicles serving the Project. In preparation for trial, prepared 20-page preliminary expert report summarizing results of diesel exhaust and noise measurements at two big box retail stores in Honolulu, estimated diesel PM10 concentrations for Project using ISCST, prepared a cancer health risk assessment based on these analyses, and evaluated noise impacts.
- Assisted environmental organizations to challenge the DOE Finding of No Significant Impact (FONSI) for the Baja California Power and Sempra Energy Resources Cross-Border Transmissions Lines in the U.S. and four associated power plants located in Mexico (DOE EA-1391). Prepared 20-page declaration in support of motion for summary judgment addressing emissions, including CO_2 and NH_3, offsets, BACT, cumulative air quality impacts, alternative cooling systems, and water use and water quality impacts. Plaintiff's motion for summary judgment granted in part. U.S. District Court, Southern District decision concluded that the Environmental Assessment and FONSI violated NEPA and the APA due to their inadequate analysis of the potential controversy surrounding the project, water impacts, impacts from NH_3 and CO_2, alternatives, and cumulative impacts. *Border Power Plant Working Group v. Department of Energy and Bureau of Land Management*, Case No. 02-CV-513-IEG (POR) (May 2, 2003).
- For Sacramento school, reviewed draft air permit issued for diesel generator located across from playfield. Prepared comments on emission estimates, enforceability, BACT, and health impacts of diesel exhaust. Case settled. BUG trap installed on the diesel generator.
- Assisted unions in appeal of Title V permit issued by BAAQMD to carbon plant that manufactured coke. Reviewed District files, identified historic modifications that should have triggered PSD review, and prepared technical comments on Title V permit. Reviewed

responses to comments and assisted counsel draft appeal to BAAQMD hearing board, opening brief, motion to strike, and rebuttal brief. Case settled.

- Assisted California Central Coast city obtain controls on a proposed new city that would straddle the Ventura-Los Angeles County boundary. Reviewed several environmental impact reports, prepared an air quality analysis, a diesel exhaust health risk assessment, and detailed review comments. Governor intervened and State dedicated the land for conservation purposes April 2004.
- Assisted Central California city to obtain controls on large alluvial sand quarry and asphalt plant proposing a modernization. Prepared comments on Negative Declaration on air quality, public health, noise, and traffic. Evaluated process flow diagrams and engineering reports to determine whether proposed changes increased plant capacity or substantially modified plant operations. Prepared comments on application for categorical exemption from CEQA. Presented testimony to County Board of Supervisors. Developed controls to mitigate impacts. Assisted counsel draft Petition for Writ. Case settled June 2002. Substantial improvements in plant operations were obtained including cap on throughput, dust control measures, asphalt plant loadout enclosure, and restrictions on truck routes.
- Assisted oil companies on the California Central Coast in defending class action citizen's lawsuit alleging health effects due to emissions from gas processing plant and leaking underground storage tanks. Reviewed regulatory and other files and advised counsel on merits of case. Case settled November 2001.
- Assisted oil company on the California Central Coast in defending property damage claims arising out of a historic oil spill. Reviewed site investigation reports, pump tests, leachability studies, and health risk assessments, participated in design of additional site characterization studies to assess health impacts, and advised counsel on merits of case. Prepare health risk assessment.
- Assisted unions in appeal of Initial Study/Negative Declaration ("IS/ND") for an MTBE phaseout project at a Bay Area refinery. Reviewed IS/ND and supporting agency permitting files and prepared technical comments on air quality, groundwater, and public health impacts. Reviewed responses to comments and final IS/ND and ATC permits and assisted counsel to draft petitions and briefs appealing decision to Air District Hearing Board. Presented sworn direct and rebuttal testimony with cross examination on groundwater impacts of ethanol spills on hydrocarbon contamination at refinery. Hearing Board ruled 5 to 0 in favor of appellants, remanding ATC to district to prepare an EIR.
- Assisted Florida cities in challenging the use of diesel and proposed BACT determinations in prevention of significant deterioration (PSD) permits issued to two 510-MW simple cycle peaking electric generating facilities and one 1,080-MW simple cycle/combined cycle facility. Reviewed permit applications, draft permits, and FDEP engineering evaluations, assisted counsel in drafting petitions and responding to discovery. Participated in settlement discussions. Cases settled or applications withdrawn.

- Assisted large California city in federal lawsuit alleging peaker power plant was violating its federal permit. Reviewed permit file and applicant's engineering and cost feasibility study to reduce emissions through retrofit controls. Advised counsel on feasible and cost-effective NOx, SOx, and PM10 controls for several 1960s diesel-fired Pratt and Whitney peaker turbines. Case settled.
- Assisted coalition of Georgia environmental groups in evaluating BACT determinations and permit conditions in PSD permits issued to several large natural gas-fired simple cycle and combined-cycle power plants. Prepared technical comments on draft PSD permits on BACT, enforceability of limits, and toxic emissions. Reviewed responses to comments, advised counsel on merits of cases, participated in settlement discussions, presented oral and written testimony in adjudicatory hearings, and provided technical assistance as required. Cases settled or won at trial.
- Assisted construction unions in review of air quality permitting actions before the Indiana Department of Environmental Management ("IDEM") for several natural gas-fired simple cycle peaker and combined cycle power plants.
- Assisted coalition of towns and environmental groups in challenging air permits issued to 523 MW dual fuel (natural gas and distillate) combined-cycle power plant in Connecticut. Prepared technical comments on draft permits and 60 pages of written testimony addressing emission estimates, startup/shutdown issues, BACT/LAER analyses, and toxic air emissions. Presented testimony in adjudicatory administrative hearings before the Connecticut Department of Environmental Protection in June 2001 and December 2001.
- Assisted various coalitions of unions, citizens groups, cities, public agencies, and developers in licensing and permitting of over 110 coal, gas, oil, biomass, and pet coke-fired power plants generating over 75,000 MW of electricity. These included base-load, combined cycle, simple cycle, and peaker power plants in Alaska, Arizona, Arkansas, California, Colorado, Georgia, Florida, Illinois, Indiana, Kentucky, Michigan, Missouri, Ohio, Oklahoma, Oregon, Texas, West Virginia, Wisconsin, and elsewhere. Prepared analyses of and comments on applications for certification, preliminary and final staff assessments, and various air, water, wastewater, and solid waste permits issued by local agencies. Presented written and oral testimony before various administrative bodies on hazards of ammonia use and transportation, health effects of air emissions, contaminated property issues, BACT/LAER issues related to SCR and SCONOx, criteria and toxic pollutant emission estimates, MACT analyses, air quality modeling, water supply and water quality issues, and methods to reduce water use, including dry cooling, parallel dry-wet cooling, hybrid cooling, and zero liquid discharge systems.
- Assisted unions, cities, and neighborhood associations in challenging an EIR issued for the proposed expansion of the Oakland Airport. Reviewed two draft EIRs and prepared a health risk assessment and extensive technical comments on air quality and public health impacts. The California Court of Appeals, First Appellate District, ruled in favor of appellants and

plaintiffs, concluding that the EIR "2) erred in using outdated information in assessing the emission of toxic air contaminants (TACs) from jet aircraft; 3) failed to support its decision not to evaluate the health risks associated with the emission of TACs with meaningful analysis," thus accepting my technical arguments and requiring the Port to prepare a new EIR. See *Berkeley Keep Jets Over the Bay Committee, City of San Leandro, and City of Alameda et al. v. Board of Port Commissioners* (August 30, 2001) 111 Cal.Rptr.2d 598.

- Assisted lessor of former gas station with leaking underground storage tanks and TCE contamination from adjacent property. Lessor held option to purchase, which was forfeited based on misrepresentation by remediation contractor as to nature and extent of contamination. Remediation contractor purchased property. Reviewed regulatory agency files and advised counsel on merits of case. Case not filed.
- Advised counsel on merits of several pending actions, including a Proposition 65 case involving groundwater contamination at an explosives manufacturing firm and two former gas stations with leaking underground storage tanks.
- Assisted defendant foundry in Oakland in a lawsuit brought by neighbors alleging property contamination, nuisance, trespass, smoke, and health effects from foundry operation. Inspected and sampled plaintiff's property. Advised counsel on merits of case. Case settled.
- Assisted business owner facing eminent domain eviction. Prepared technical comments on a negative declaration for soil contamination and public health risks from air emissions from a proposed redevelopment project in San Francisco in support of a CEQA lawsuit. Case settled.
- Assisted neighborhood association representing residents living downwind of a Berkeley asphalt plant in separate nuisance and CEQA lawsuits. Prepared technical comments on air quality, odor, and noise impacts, presented testimony at commission and council meetings, participated in community workshops, and participated in settlement discussions. Cases settled. Asphalt plant was upgraded to include air emission and noise controls, including vapor collection system at truck loading station, enclosures for noisy equipment, and improved housekeeping.
- Assisted a Fortune 500 residential home builder in claims alleging health effects from faulty installation of gas appliances. Conducted indoor air quality study, advised counsel on merits of case, and participated in discussions with plaintiffs. Case settled.
- Assisted property owners in Silicon Valley in lawsuit to recover remediation costs from insurer for large TCE plume originating from a manufacturing facility. Conducted investigations to demonstrate sudden and accidental release of TCE, including groundwater modeling, development of method to date spill, preparation of chemical inventory, investigation of historical waste disposal practices and standards, and on-site sewer and storm drainage inspections and sampling. Prepared declaration in opposition to motion for summary judgment. Case settled.

- Assisted residents in east Oakland downwind of a former battery plant in class action lawsuit alleging property contamination from lead emissions. Conducted historical research and dry deposition modeling that substantiated claim. Participated in mediation at JAMS. Case settled.
- Assisted property owners in West Oakland who purchased a former gas station that had leaking underground storage tanks and groundwater contamination. Reviewed agency files and advised counsel on merits of case. Prepared declaration in opposition to summary judgment. Prepared cost estimate to remediate site. Participated in settlement discussions. Case settled.
- Consultant to counsel representing plaintiffs in two Clean Water Act lawsuits involving selenium discharges into San Francisco Bay from refineries. Reviewed files and advised counsel on merits of case. Prepared interrogatory and discovery questions, assisted in deposing opposing experts, and reviewed and interpreted treatability and other technical studies. Judge ruled in favor of plaintiffs.
- Assisted oil company in a complaint filed by a resident of a small California beach community alleging that discharges of tank farm rinse water into the sanitary sewer system caused hydrogen sulfide gas to infiltrate residence, sending occupants to hospital. Inspected accident site, interviewed parties to the event, and reviewed extensive agency files related to incident. Used chemical analysis, field simulations, mass balance calculations, sewer hydraulic simulations with SWMM44, atmospheric dispersion modeling with SCREEN3, odor analyses, and risk assessment calculations to demonstrate that the incident was caused by a faulty drain trap and inadequate slope of sewer lateral on resident's property. Prepared a detailed technical report summarizing these studies. Case settled.
- Assisted large West Coast city in suit alleging that leaking underground storage tanks on city property had damaged the waterproofing on downgradient building, causing leaks in an underground parking structure. Reviewed subsurface hydrogeologic investigations and evaluated studies conducted by others documenting leakage from underground diesel and gasoline tanks. Inspected, tested, and evaluated waterproofing on subsurface parking structure. Waterproofing was substandard. Case settled.
- Assisted residents downwind of gravel mine and asphalt plant in Siskiyou County, California, in suit to obtain CEQA review of air permitting action. Prepared two declarations analyzing air quality and public health impacts. Judge ruled in favor of plaintiffs, closing mine and asphalt plant.
- Assisted defendant oil company on the California Central Coast in class action lawsuit alleging property damage and health effects from subsurface petroleum contamination. Reviewed documents, prepared risk calculations, and advised counsel on merits of case. Participated in settlement discussions. Case settled.

- Assisted defendant oil company in class action lawsuit alleging health impacts from remediation of petroleum contaminated site on California Central Coast. Reviewed documents, designed and conducted monitoring program, and participated in settlement discussions. Case settled.
- Consultant to attorneys representing irrigation districts and municipal water districts to evaluate a potential challenge of USFWS actions under CVPIA section 3406(b)(2). Reviewed agency files and collected and analyzed hydrology, water quality, and fishery data. Advised counsel on merits of case. Case not filed.
- Assisted residents downwind of a Carson refinery in class action lawsuit involving soil and groundwater contamination, nuisance, property damage, and health effects from air emissions. Reviewed files and provided advise on contaminated soil and groundwater, toxic emissions, and health risks. Prepared declaration on refinery fugitive emissions. Prepared deposition questions and reviewed deposition transcripts on air quality, soil contamination, odors, and health impacts. Case settled.
- Assisted residents downwind of a Contra Costa refinery who were affected by an accidental release of naphtha. Characterized spilled naphtha, estimated emissions, and modeled ambient concentrations of hydrocarbons and sulfur compounds. Deposed. Presented testimony in binding arbitration at JAMS. Judge found in favor of plaintiffs.
- Assisted residents downwind of Contra Costa County refinery in class action lawsuit alleging property damage, nuisance, and health effects from several large accidents as well as routine operations. Reviewed files and prepared analyses of environmental impacts. Prepared declarations, deposed, and presented testimony before jury in one trial and judge in second. Case settled.
- Assisted business owner claiming damages from dust, noise, and vibration during a sewer construction project in San Francisco. Reviewed agency files and PM10 monitoring data and advised counsel on merits of case. Case settled.
- Assisted residents downwind of Contra Costa County refinery in class action lawsuit alleging property damage, nuisance, and health effects. Prepared declaration in opposition to summary judgment, deposed, and presented expert testimony on accidental releases, odor, and nuisance before jury. Case thrown out by judge, but reversed on appeal and not retried.
- Presented testimony in small claims court on behalf of residents claiming health effects from hydrogen sulfide from flaring emissions triggered by a power outage at a Contra Costa County refinery. Analyzed meteorological and air quality data and evaluated potential health risks of exposure to low concentrations of hydrogen sulfide. Judge awarded damages to plaintiffs.
- Assisted construction unions in challenging PSD permit for an Indiana steel mill. Prepared technical comments on draft PSD permit, drafted 70-page appeal of agency permit action to

the Environmental Appeals Board challenging permit based on faulty BACT analysis for electric arc furnace and reheat furnace and faulty permit conditions, among others, and drafted briefs responding to four parties. EPA Region V and the EPA General Counsel intervened as amici, supporting petitioners. EAB ruled in favor of petitioners, remanding permit to IDEM on three key issues, including BACT for the reheat furnace and lead emissions from the EAF. Drafted motion to reconsider three issues. Prepared 69 pages of technical comments on revised draft PSD permit. Drafted second EAB appeal addressing lead emissions from the EAF and BACT for reheat furnace based on European experience with SCR/SNCR. Case settled. Permit was substantially improved. See *In re: Steel Dynamics, Inc.*, PSD Appeal Nos. 99-4 & 99-5 (EAB June 22, 2000).

- Assisted defendant urea manufacturer in Alaska in negotiations with USEPA to seek relief from penalties for alleged violations of the Clean Air Act. Reviewed and evaluated regulatory files and monitoring data, prepared technical analysis demonstrating that permit limits were not violated, and participated in negotiations with EPA to dismiss action. Fines were substantially reduced and case closed.
- Assisted construction unions in challenging PSD permitting action for an Indiana grain mill. Prepared technical comments on draft PSD permit and assisted counsel draft appeal of agency permit action to the Environmental Appeals Board challenging permit based on faulty BACT analyses for heaters and boilers and faulty permit conditions, among others. Case settled.
- As part of a consent decree settling a CEQA lawsuit, assisted neighbors of a large west coast port in negotiations with port authority to secure mitigation for air quality impacts. Prepared technical comments on mobile source air quality impacts and mitigation and negotiated a $9 million CEQA mitigation package. Represented neighbors on technical advisory committee established by port to implement the air quality mitigation program. Program successfully implemented.
- Assisted construction unions in challenging permitting action for a California hazardous waste incinerator. Prepared technical comments on draft permit, assisted counsel prepare appeal of EPA permit to the Environmental Appeals Board. Participated in settlement discussions on technical issues with applicant and EPA Region 9. Case settled.
- Assisted environmental group in challenging DTSC Negative Declaration on a hazardous waste treatment facility. Prepared technical comments on risk of upset, water, and health risks. Writ of mandamus issued.
- Assisted several neighborhood associations and cities impacted by quarries, asphalt plants, and cement plants in Alameda, Shasta, Sonoma, and Mendocino counties in obtaining mitigations for dust, air quality, public health, traffic, and noise impacts from facility operations and proposed expansions.

- For over 100 industrial facilities, commercial/campus, and redevelopment projects, developed the record in preparation for CEQA and NEPA lawsuits. Prepared technical comments on hazardous materials, solid wastes, public utilities, noise, worker safety, air quality, public health, water resources, water quality, traffic, and risk of upset sections of EIRs, EISs, FONSIs, initial studies, and negative declarations. Assisted counsel in drafting petitions and briefs and prepared declarations.
- For several large commercial development projects and airports, assisted applicant and counsel prepare defensible CEQA documents, respond to comments, and identify and evaluate "all feasible" mitigation to avoid CEQA challenges. This work included developing mitigation programs to reduce traffic-related air quality impacts based on energy conservation programs, solar, low-emission vehicles, alternative fuels, exhaust treatments, and transportation management associations.

SITE INVESTIGATION/REMEDIATION/CLOSURE

- Technical manager and principal engineer for characterization, remediation, and closure of waste management units at former Colorado oil shale plant. Constituents of concern included BTEX, As, 1,1,1-TCA, and TPH. Completed groundwater monitoring programs, site assessments, work plans, and closure plans for seven process water holding ponds, a refinery sewer system, and processed shale disposal area. Managed design and construction of groundwater treatment system and removal actions and obtained clean closure.
- Principal engineer for characterization, remediation, and closure of process water ponds at a former lanthanide processing plant in Colorado. Designed and implemented groundwater monitoring program and site assessments and prepared closure plan.
- Advised the city of Sacramento on redevelopment of two former railyards. Reviewed work plans, site investigations, risk assessment, RAPS, RI/FSs, and CEQA documents. Participated in the development of mitigation strategies to protect construction and utility workers and the public during remediation, redevelopment, and use of the site, including buffer zones, subslab venting, rail berm containment structure, and an environmental oversight plan.
- Provided technical support for the investigation of a former sanitary landfill that was redeveloped as single family homes. Reviewed and/or prepared portions of numerous documents, including health risk assessments, preliminary endangerment assessments, site investigation reports, work plans, and RI/FSs. Historical research to identify historic waste disposal practices to prepare a preliminary endangerment assessment. Acquired, reviewed, and analyzed the files of 18 federal, state, and local agencies, three sets of construction field notes, analyzed 21 aerial photographs and interviewed 14 individuals associated with operation of former landfill. Assisted counsel in defending lawsuit brought by residents

alleging health impacts and diminution of property value due to residual contamination. Prepared summary reports.

- Technical oversight of characterization and remediation of a nitrate plume at an explosives manufacturing facility in Lincoln, CA. Provided interface between owners and consultants. Reviewed site assessments, work plans, closure plans, and RI/FSs.
- Consultant to owner of large western molybdenum mine proposed for NPL listing. Participated in negotiations to scope out consent order and develop scope of work. Participated in studies to determine premining groundwater background to evaluate applicability of water quality standards. Served on technical committees to develop alternatives to mitigate impacts and close the facility, including resloping and grading, various thickness and types of covers, and reclamation. This work included developing and evaluating methods to control surface runoff and erosion, mitigate impacts of acid rock drainage on surface and ground waters, and stabilize nine waste rock piles containing 328 million tons of pyrite-rich, mixed volcanic waste rock (andesites, rhyolite, tuff). Evaluated stability of waste rock piles. Represented client in hearings and meetings with state and federal oversight agencies.

REGULATORY (PARTIAL LIST)

- In April 2016, prepared supplemental comments on Valero Benicia Crude by Rail Project, focused on on-site impacts and impacts at the unloading terminal, in response to request for a stay to appeal Planning Commission decision.
- In February 2016, prepared comments on Final Environmental Impact Report, Santa Maria Rail Spur Project.
- In February 2016, prepared comments on Final Environmental Impact Report, Valero Benicia Crude by Rail Project.
- In January 2016, prepared comments on Draft Programmatic Environmental Impact Report for the Southern California Association of Government's (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy.
- In November 2015, prepared comments on Final Environmental Impact Report for Revisions to the Kern County Zoning Ordinance – 2015(C) (Focused on Oil and Gas Local Permitting), November 2015.
- In October 2015, prepared comments on Revised Draft Environmental Report, Valero Benicia Crude by Rail Project.
- In September 2015, prepared report, "Environmental, Health and Safety Impacts of the Proposed Oakland Bulk and Oversized Terminal, and presented oral testimony on September 21, 2015 before Oakland City Council on behalf of the Sierra Club.

- In September 2015, prepared comments on revisions to two chapters of EPA's Air Pollution Control Cost Manual: Docket ID No. EPA-HQ-OAR-2015-0341.
- In June 2015, prepared comments on DEIR for the CalAm Monterey Peninsula Water Supply Project.
- In April 2015, prepared comments on proposed Title V Operating Permit Revision and Prevention of Significant Deterioration Permit for Arizona Public Service's Ocotillo Power Plant Modernization Project (5 GE LMS100 105-MW simple cycle turbines operated as peakers), in Tempe, Arizona.
- In March 2015, prepared "Comments on Proposed Title V Air Permit, Yuhuang Chemical Inc. Methanol Plant, St. James, Louisiana".
- In January 2015, prepared cost effectiveness analysis for SCR for a 500-MW coal fire power plant, to address unpermitted upgrades in 2000.
- In January 2015, prepared comments on Revised Final Environmental Impact Report for the Phillips 66 Propane Recovery Project.
- In December 2014, prepared "Report on Bakersfield Crude Terminal Permits to Operate." In response, the U.S. EPA cited the Terminal for 10 violations of the Clean Air Act.
- In December 2014, prepared comments on Revised Draft Environmental Impact Report for the Phillips 66 Propane Recovery Project.
- In November 2014, prepared comments on Revised Draft Environmental Impact Report for Phillips 66 Rail Spur Extension Project and Crude Unloading Project, Santa Maria, CA to allow the import of tar sands crudes.
- In November 2014, prepared comments on Draft Environmental Impact Report for Phillips 66 Ultra Low Sulfur Diesel Project, responding to the California Supreme Court Decision, *Communities for a Better Environment v. South Coast Air Quality Management Dist. (2010) 48 Cal.4th 310.*
- In November 2014, prepared comments on Draft Environmental Impact Report for the Tesoro Avon Marine Oil Terminal Lease Consideration.
- In October 2014, prepared: "Report on Hydrogen Cyanide Emissions from Fluid Catalytic Cracking Units", pursuant to the Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards, 79 FR 36880.
- In October 2014, prepared technical comments on Final Environmental Impact Reports for Alon Bakersfield Crude Flexibility Project to build a rail terminal to allow the import/export of tar sands and Bakken crude oils and to upgrade an existing refinery to allow it to process a wide range of crudes.

- In October 2014, prepared technical comments on the Title V Permit Renewal and three De Minimus Significant Revisions for the Tesoro Logistics Marine Terminal in the SCAQMD.
- In August 2014, for EPA Region 6, prepared technical report on costing methods for upgrades to existing scrubbers at coal-fired power plants.
- In July 2014, prepared technical comments on Draft Final Environmental Impact Reports for Alon Bakersfield Crude Flexibility Project to build a rail terminal to allow the import/export of tar sands and Bakken crude oils and to upgrade an existing refinery to allow it to process a wide range of crudes.
- In June 2014, prepared technical report on Initial Study and Draft Negative Declaration for the Tesoro Logistics Storage Tank Replacement and Modification Project.
- In May 2014, prepared technical comments on Intent to Approve a new refinery and petroleum transloading operation in Utah.
- In March and April 2014, prepared declarations on air permits issued for two crude-by-rail terminals in California, modified to switch from importing ethanol to importing Bakken crude oils by rail and transferring to tanker cars. Permits were issued without undergoing CEQA review. One permit was upheld by the San Francisco Superior Court as statute of limitations had run. The Sacramento Air Quality Management District withdrew the second one due to failure to require BACT and conduct CEQA review.
- In March 2014, prepared technical report on Negative Declaration for a proposed modification of the air permit for a bulk petroleum and storage terminal to the allow the import of tar sands and Bakken crude oil by rail and its export by barge, under the New York State Environmental Quality Review Act (SEQRA).
- In February 2014, prepared technical report on proposed modification of air permit for midwest refinery upgrade/expansion to process tar sands crudes.
- In January 2014, prepared cost estimates to capture, transport, and use CO2 in enhanced oil recovery, from the Freeport LNG project based on both Selexol and Amine systems.
- In January 2014, prepared technical report on Draft Environmental Impact Report for Phillips 66 Rail Spur Extension Project, Santa Maria, CA. Comments addressed project description (piecemealing, crude slate), risk of upset analyses, mitigation measures, alternative analyses and cumulative impacts.
- In November 2013, prepared technical report on3333 the Phillips 66 Propane Recovery Project, Rodeo, CA. Comments addressed project description (piecemealing, crude slate) and air quality impacts.
- In September 2013, prepared technical report on the Draft Authority to Construct Permit for the Casa Diablo IV Geothermal Development Project Environmental Impact Report and Declaration in Support of Appeal and Petition for Stay, U.S. Department of the Interior,

Board of Land Appeals, Appeal of Decision Record for the Casa Diablo IV Geothermal Development Project.

- In September 2013, prepared technical report on Effluent Limitation Guidelines for Best Available Technology Economically Available (BAT) for Bottom Ash Transport Waters from Coal-Fired Power Plants in the Steam Electric Power Generating Point Source Category.
- In July 2013, prepared technical report on Initial Study/Mitigated Negative Declaration for the Valero Crude by Rail Project, Benicia, California, Use Permit Application 12PLN-00063.
- In July 2013, prepared technical report on fugitive particulate matter emissions from coal train staging at the proposed Coyote Island Terminal, Oregon, for draft Permit No. 25-0015-ST-01.
- In July 2013, prepared technical comments on air quality impacts of the Finger Lakes LPG Storage Facility as reported in various Environmental Impact Statements.
- In July 2013, prepared technical comments on proposed Greenhouse Gas PSD Permit for the Celanese Clear Lake Plant, including cost analysis of CO2 capture, transport, and sequestration.
- In June/July 2013, prepared technical comments on proposed Draft PSD Preconstruction Permit for Greenhouse Gas Emission for the ExxonMobil Chemical Company Baytown Olefins Plant, including cost analysis of CO2 capture, transport, and sequestration.
- In June 2013, prepared technical report on a Mitigated Negative Declaration for a new rail terminal at the Valero Benicia Refinery to import increased amounts of "North American" crudes. Comments addressed air quality impacts of refining increased amounts of tar sands crudes.
- In June 2013, prepared technical report on Draft Environmental Impact Report for the California Ethanol and Power Imperial Valley 1 Project.
- In May 2013, prepared comments on draft PSD permit for major expansion of midwest refinery to process 100% tar sands crudes, including a complex netting analysis involving debottlenecking, piecemealing, and BACT analyses.
- In April 2013, prepared technical report on the Draft Supplemental Environmental Impact Statement (DSEIS) for the Keystone XL Pipeline on air quality impacts from refining increased amount of tar sands crudes at Refineries in PADD 3.
- In October 2012, prepared technical report on the Environmental Review for the Coyote Island Terminal Dock at the Port of Morrow on fugitive particulate matter emissions.
- In October 2012-October 2014, review and evaluate Flint Hills West Application for an expansion/modification for increased (Texas, Eagle Ford Shale) crude processing and related modification, including netting and BACT analysis. Assist in settlement discussions.

- In February 2012, prepared comments on BART analysis in PA Regional Haze SIP, 77 FR 3984 (Jan. 26, 2012). On Sept. 29, 2015, a federal appeals court overturned the U.S. EPA's approval of this plan, based in part on my comments, concluding "..we will vacate the 2014 Final Rule to the extent it approved Pennsylvania's source-specific BART analysis and remand to the EPA for further proceedings consistent with this Opinion." Nat'l Parks Conservation Assoc. v. EPA, 3d Cir., No. 14-3147, 9/19/15.
- Prepared cost analyses and comments on New York's proposed BART determinations for NOx, SO2, and PM and EPA's proposed approval of BART determinations for Danskammer Generating Station under New York Regional Haze State Implementation Plan and Federal Implementation Plan, 77 FR 51915 (August 28, 2012).
- Prepared cost analyses and comments on NOx BART determinations for Regional Haze State Implementation Plan for State of Nevada, 77 FR 23191 (April 18, 2012) and 77 FR 25660 (May 1, 2012).
- Prepared analyses of and comments on New Source Performance Standards for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, 77 FR 22392 (April 13, 2012).
- Prepared comments on CASPR-BART emission equivalency and NOx and PM BART determinations in EPA proposed approval of State Implementation Plan for Pennsylvania Regional Haze Implementation Plan, 77 FR 3984 (January 26, 2012).
- Prepared comments and statistical analyses on hazardous air pollutants (HAPs) emission controls, monitoring, compliance methods, and the use of surrogates for acid gases, organic HAPs, and metallic HAPs for proposed National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units, 76 FR 24976 (May 3, 2011).
- Prepared cost analyses and comments on NOx BART determinations and emission reductions for proposed Federal Implementation Plan for Four Corners Power Plant, 75 FR 64221 (October 19, 2010).
- Prepared cost analyses and comments on NOx BART determinations for Colstrip Units 1- 4 for Montana State Implementation Plan and Regional Haze Federal Implementation Plan, 77 FR 23988 (April 20, 2010).
- For EPA Region 8, prepared report: Revised BART Cost Effectiveness Analysis for Tail-End Selective Catalytic Reduction at the Basin Electric Power Cooperative Leland Olds Station Unit 2 Final Report, March 2011, in support of 76 FR 58570 (Sept. 21, 2011).
- For EPA Region 6, prepared report: Revised BART Cost-Effectiveness Analysis for Selective Catalytic Reduction at the Public Service Company of New Mexico San Juan Generating Station, November 2010, in support of 76 FR 52388 (Aug. 22, 2011).

- For EPA Region 6, prepared report: Revised BART Cost-Effectiveness Analysis for Flue Gas Desulfurization at Coal-Fired Electric Generating Units in Oklahoma: Sooner Units 1 & 2, Muskogee Units 4 & 5, Northeastern Units 3 &4, October 2010, in support of 76 FR 16168 (March 26, 2011). My work was upheld in: *State of Oklahoma v. EPA*, App. Case 12-9526 (10th Cri. July 19, 2013).
- Identified errors in N_2O emission factors in the Mandatory Greenhouse Gas Reporting Rule, 40 CFR 98, and prepared technical analysis to support Petition for Rulemaking to Correct Emissions Factors in the Mandatory Greenhouse Gas Reporting Rule, filed with EPA on 10/28/10.
- Assisted interested parties develop input for and prepare comments on the Information Collection Request for Petroleum Refinery Sector NSPS and NESHAP Residual Risk and Technology Review, 75 FR 60107 (9/29/10).
- Technical reviewer of EPA's "Emission Estimation Protocol for Petroleum Refineries," posted for public comments on CHIEF on 12/23/09, prepared in response to the City of Houston's petition under the Data Quality Act (March 2010).
- Prepared comments on SCR cost effectiveness for EPA's Advanced Notice of Proposed Rulemaking, Assessment of Anticipated Visibility Improvements at Surrounding Class I Areas and Cost Effectiveness of Best Available Retrofit Technology for Four Corners Power Plant and Navajo Generating Station, 74 FR 44313 (August 28, 2009).
- Prepared comments on Proposed Rule for Standards of Performance for Coal Preparation and Processing Plants, 74 FR 25304 (May 27, 2009).
- Prepared comments on draft PSD permit for major expansion of midwest refinery to process up to 100% tar sands crudes. Participated in development of monitoring and controls to mitigate impacts and in negotiating a Consent Decree to settle claims in 2008.
- Reviewed and assisted interested parties prepare comments on proposed Kentucky air toxic regulations at 401 KAR 64:005, 64:010, 64:020, and 64:030 (June 2007).
- Prepared comments on proposed Standards of Performance for Electric Utility Steam Generating Units and Small Industrial-Commercial-Industrial Steam Generating Units, 70 FR 9706 (February 28, 2005).
- Prepared comments on Louisville Air Pollution Control District proposed Strategic Toxic Air Reduction regulations.
- Prepared comments and analysis of BAAQMD Regulation, Rule 11, Flare Monitoring at Petroleum Refineries.
- Prepared comments on Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed Standards of Performance for New and Existing Stationary

Sources: Electricity Utility Steam Generating Units (MACT standards for coal-fired power plants).

- Prepared Authority to Construct Permit for remediation of a large petroleum-contaminated site on the California Central Coast. Negotiated conditions with agencies and secured permits.
- Prepared Authority to Construct Permit for remediation of a former oil field on the California Central Coast. Participated in negotiations with agencies and secured permits.
- Prepared and/or reviewed hundreds of environmental permits, including NPDES, UIC, Stormwater, Authority to Construct, Prevention of Significant Deterioration, Nonattainment New Source Review, Title V, and RCRA, among others.
- Participated in the development of the CARB document, *Guidance for Power Plant Siting and Best Available Control Technology*, including attending public workshops and filing technical comments.
- Performed data analyses in support of adoption of emergency power restoration standards by the California Public Utilities Commission for "major" power outages, where major is an outage that simultaneously affects 10% of the customer base.
- Drafted portions of the Good Neighbor Ordinance to grant Contra Costa County greater authority over safety of local industry, particularly chemical plants and refineries.
- Participated in drafting BAAQMD Regulation 8, Rule 28, Pressure Relief Devices, including participation in public workshops, review of staff reports, draft rules and other technical materials, preparation of technical comments on staff proposals, research on availability and costs of methods to control PRV releases, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 18, Valves and Connectors, including participation in public workshops, review of staff reports, proposed rules and other supporting technical material, preparation of technical comments on staff proposals, research on availability and cost of low-leak technology, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 25, Pumps and Compressors, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak and seal-less technology, and negotiations with staff.
- Participated in amending BAAQMD Regulation 8, Rule 5, Storage of Organic Liquids, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of controlling tank emissions, and presentation of testimony before the Board.

- Participated in amending BAAQMD Regulation 8, Rule 18, Valves and Connectors at Petroleum Refinery Complexes, including participation in public workshops, review of staff reports, proposed rules and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak technology, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 22, Valves and Flanges at Chemical Plants, etc, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability and costs of low-leak technology, and presentation of testimony before the Board.
- Participated in amending BAAQMD Regulation 8, Rule 25, Pump and Compressor Seals, including participation in public workshops, review of staff reports, proposed rules, and other supporting technical material, preparation of technical comments on staff proposals, research on availability of low-leak technology, and presentation of testimony before the Board.
- Participated in the development of the BAAQMD Regulation 2, Rule 5, Toxics, including participation in public workshops, review of staff proposals, and preparation of technical comments.
- Participated in the development of SCAQMD Rule 1402, Control of Toxic Air Contaminants from Existing Sources, and proposed amendments to Rule 1401, New Source Review of Toxic Air Contaminants, in 1993, including review of staff proposals and preparation of technical comments on same.
- Participated in the development of the Sunnyvale Ordinance to Regulate the Storage, Use and Handling of Toxic Gas, which was designed to provide engineering controls for gases that are not otherwise regulated by the Uniform Fire Code.
- Participated in the drafting of the Statewide Water Quality Control Plans for Inland Surface Waters and Enclosed Bays and Estuaries, including participation in workshops, review of draft plans, preparation of technical comments on draft plans, and presentation of testimony before the SWRCB.
- Participated in developing Se permit effluent limitations for the five Bay Area refineries, including review of staff proposals, statistical analyses of Se effluent data, review of literature on aquatic toxicity of Se, preparation of technical comments on several staff proposals, and presentation of testimony before the Bay Area RWQCB.
- Represented the California Department of Water Resources in the 1991 Bay-Delta Hearings before the State Water Resources Control Board, presenting sworn expert testimony with cross examination and rebuttal on a striped bass model developed by the California Department of Fish and Game.

- Represented the State Water Contractors in the 1987 Bay-Delta Hearings before the State Water Resources Control Board, presenting sworn expert testimony with cross examination and rebuttal on natural flows, historical salinity trends in San Francisco Bay, Delta outflow, and hydrodynamics of the South Bay.
- Represented interveners in the licensing of over 20 natural-gas-fired power plants and one coal gasification plant at the California Energy Commission and elsewhere. Reviewed and prepared technical comments on applications for certification, preliminary staff assessments, final staff assessments, preliminary determinations of compliance, final determinations of compliance, and prevention of significant deterioration permits in the areas of air quality, water supply, water quality, biology, public health, worker safety, transportation, site contamination, cooling systems, and hazardous materials. Presented written and oral testimony in evidentiary hearings with cross examination and rebuttal. Participated in technical workshops.
- Represented several parties in the proposed merger of San Diego Gas & Electric and Southern California Edison. Prepared independent technical analyses on health risks, air quality, and water quality. Presented written and oral testimony before the Public Utilities Commission administrative law judge with cross examination and rebuttal.
- Represented a PRP in negotiations with local health and other agencies to establish impact of subsurface contamination on overlying residential properties. Reviewed health studies prepared by agency consultants and worked with agencies and their consultants to evaluate health risks.

WATER QUALITY/RESOURCES

- Directed and participated in research on environmental impacts of energy development in the Colorado River Basin, including contamination of surface and subsurface waters and modeling of flow and chemical transport through fractured aquifers.
- Played a major role in Northern California water resource planning studies since the early 1970s. Prepared portions of the Basin Plans for the Sacramento, San Joaquin, and Delta basins including sections on water supply, water quality, beneficial uses, waste load allocation, and agricultural drainage. Developed water quality models for the Sacramento and San Joaquin Rivers.
- Conducted hundreds of studies over the past 40 years on Delta water supplies and the impacts of exports from the Delta on water quality and biological resources of the Central Valley, Sacramento-San Joaquin Delta, and San Francisco Bay. Typical examples include:

    1. Evaluate historical trends in salinity, temperature, and flow in San Francisco Bay and upstream rivers to determine impacts of water exports on the estuary;

2. Evaluate the role of exports and natural factors on the food web by exploring the relationship between salinity and primary productivity in San Francisco Bay, upstream rivers, and ocean;
3. Evaluate the effects of exports, other in-Delta, and upstream factors on the abundance of salmon and striped bass;
4. Review and critique agency fishery models that link water exports with the abundance of striped bass and salmon;
5. Develop a model based on GLMs to estimate the relative impact of exports, water facility operating variables, tidal phase, salinity, temperature, and other variables on the survival of salmon smolts as they migrate through the Delta;
6. Reconstruct the natural hydrology of the Central Valley using water balances, vegetation mapping, reservoir operation models to simulate flood basins, precipitation records, tree ring research, and historical research;
7. Evaluate the relationship between biological indicators of estuary health and down-estuary position of a salinity surrogate (X2);
8. Use real-time fisheries monitoring data to quantify impact of exports on fish migration;
9. Refine/develop statistical theory of autocorrelation and use to assess strength of relationships between biological and flow variables;
10. Collect, compile, and analyze water quality and toxicity data for surface waters in the Central Valley to assess the role of water quality in fishery declines;
11. Assess mitigation measures, including habitat restoration and changes in water project operation, to minimize fishery impacts;
12. Evaluate the impact of unscreened agricultural water diversions on abundance of larval fish;
13. Prepare and present testimony on the impacts of water resources development on Bay hydrodynamics, salinity, and temperature in water rights hearings;
14. Evaluate the impact of boat wakes on shallow water habitat, including interpretation of historical aerial photographs;
15. Evaluate the hydrodynamic and water quality impacts of converting Delta islands into reservoirs;
16. Use a hydrodynamic model to simulate the distribution of larval fish in a tidally influenced estuary;
17. Identify and evaluate non-export factors that may have contributed to fishery declines, including predation, shifts in oceanic conditions, aquatic toxicity from

pesticides and mining wastes, salinity intrusion from channel dredging, loss of riparian and marsh habitat, sedimentation from upstream land alternations, and changes in dissolved oxygen, flow, and temperature below dams.

- Developed, directed, and participated in a broad-based research program on environmental issues and control technology for energy industries including petroleum, oil shale, coal mining, and coal slurry transport. Research included evaluation of air and water pollution, development of novel, low-cost technology to treat and dispose of wastes, and development and application of geohydrologic models to evaluate subsurface contamination from in-situ retorting. The program consisted of government and industry contracts and employed 45 technical and administrative personnel.
- Coordinated an industry task force established to investigate the occurrence, causes, and solutions for corrosion/erosion and mechanical/engineering failures in the waterside systems (e.g., condensers, steam generation equipment) of power plants. Corrosion/erosion failures caused by water and steam contamination that were investigated included waterside corrosion caused by poor microbiological treatment of cooling water, steam-side corrosion caused by ammonia-oxygen attack of copper alloys, stress-corrosion cracking of copper alloys in the air cooling sections of condensers, tube sheet leaks, oxygen in-leakage through condensers, volatilization of silica in boilers and carry over and deposition on turbine blades, and iron corrosion on boiler tube walls. Mechanical/engineering failures investigated included: steam impingement attack on the steam side of condenser tubes, tube-to-tube-sheet joint leakage, flow-induced vibration, structural design problems, and mechanical failures due to stresses induced by shutdown, startup and cycling duty, among others. Worked with electric utility plant owners/operators, condenser and boiler vendors, and architect/engineers to collect data to document the occurrence of and causes for these problems, prepared reports summarizing the investigations, and presented the results and participated on a committee of industry experts tasked with identifying solutions to prevent condenser failures.
- Evaluated the cost effectiveness and technical feasibility of using dry cooling and parallel dry-wet cooling to reduce water demands of several large natural-gas fired power plants in California and Arizona.
- Designed and prepared cost estimates for several dry cooling systems (e.g., fin fan heat exchangers) used in chemical plants and refineries.
- Designed, evaluated, and costed several zero liquid discharge systems for power plants.
- Evaluated the impact of agricultural and mining practices on surface water quality of Central Valley steams. Represented municipal water agencies on several federal and state advisory committees tasked with gathering and assessing relevant technical information, developing work plans, and providing oversight of technical work to investigate toxicity issues in the watershed.

AIR QUALITY/PUBLIC HEALTH

- Prepared or reviewed the air quality and public health sections of hundreds of EIRs and EISs on a wide range of industrial, commercial and residential projects.
- Prepared or reviewed hundreds of NSR and PSD permits for a wide range of industrial facilities.
- Designed, implemented, and directed a 2-year-long community air quality monitoring program to assure that residents downwind of a petroleum-contaminated site were not impacted during remediation of petroleum-contaminated soils. The program included real-time monitoring of particulates, diesel exhaust, and BTEX and time integrated monitoring for over 100 chemicals.
- Designed, implemented, and directed a 5-year long source, industrial hygiene, and ambient monitoring program to characterize air emissions, employee exposure, and downwind environmental impacts of a first-generation shale oil plant. The program included stack monitoring of heaters, boilers, incinerators, sulfur recovery units, rock crushers, API separator vents, and wastewater pond fugitives for arsenic, cadmium, chlorine, chromium, mercury, 15 organic indicators (e.g., quinoline, pyrrole, benzo(a)pyrene, thiophene, benzene), sulfur gases, hydrogen cyanide, and ammonia. In many cases, new methods had to be developed or existing methods modified to accommodate the complex matrices of shale plant gases.
- Conducted investigations on the impact of diesel exhaust from truck traffic from a wide range of facilities including mines, large retail centers, light industrial uses, and sports facilities. Conducted traffic surveys, continuously monitored diesel exhaust using an aethalometer, and prepared health risk assessments using resulting data.
- Conducted indoor air quality investigations to assess exposure to natural gas leaks, pesticides, molds and fungi, soil gas from subsurface contamination, and outgasing of carpets, drapes, furniture and construction materials. Prepared health risk assessments using collected data.
- Prepared health risk assessments, emission inventories, air quality analyses, and assisted in the permitting of over 70 1 to 2 MW emergency diesel generators.
- Prepare over 100 health risk assessments, endangerment assessments, and other health-based studies for a wide range of industrial facilities.
- Developed methods to monitor trace elements in gas streams, including a continuous real-time monitor based on the Zeeman atomic absorption spectrometer, to continuously measure mercury and other elements.

- Performed nuisance investigations (odor, noise, dust, smoke, indoor air quality, soil contamination) for businesses, industrial facilities, and residences located proximate to and downwind of pollution sources.

PUBLICATIONS AND PRESENTATIONS (Partial List - Representative Publications)

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D.J. Howes, P. Fox, and P. Hutton, Evapotranspiration from Natural Vegetation in the Central Valley of California: Monthly Grass Reference Based Vegetation Coefficients and the Dual Crop Coefficient Approach, Accepted for Publication in *Journal of Hydrologic Engineering*, October 13, 2014.

Phyllis Fox and Lindsey Sears, *Natural Vegetation in the Central Valley of California*, June 2014, Prepared for State Water Contractors and San Luis & Delta-Mendota Water Authority, 311 pg.

J.P. Fox, T.P. Rose, and T.L. Sawyer, Isotope Hydrology of a Spring-fed Waterfall in Fractured Volcanic Rock, 2007.

C.E. Lambert, E.D. Winegar, and Phyllis Fox, Ambient and Human Sources of Hydrogen Sulfide: An Explosive Topic, Air & Waste Management Association, June 2000, Salt Lake City, UT.

San Luis Obispo County Air Pollution Control District and San Luis Obispo County Public Health Department, *Community Monitoring Program*, February 8, 1999.

The Bay Institute, *From the Sierra to the Sea. The Ecological History of the San Francisco Bay-Delta Watershed*, 1998.

J. Phyllis Fox, *Well Interference Effects of HDPP's Proposed Wellfield in the Victor Valley Water District*, Prepared for the California Unions for Reliable Energy (CURE), October 12, 1998.

J. Phyllis Fox, *Air Quality Impacts of Using CPVC Pipe in Indoor Residential Potable Water Systems*, Report Prepared for California Pipe Trades Council, California Firefighters Association, and other trade associations, August 29, 1998.

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Phyllis Fox and Elaine Archibald, *Aquatic Toxicity and Pesticides in Surface Waters of the Central Valley*, California Urban Water Agencies (CUWA) Report, September 1997.

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Phyllis Fox and Alison Britton, *Predictive Ability of the Striped Bass Model*, WRINT DWR-206, 1992.

J. Phyllis Fox, *An Historical Overview of Environmental Conditions at the North Canyon Area of the Former Solano County Sanitary Landfill*, Report Prepared for Solano County Department of Environmental Management, 1991.

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Assessment, Control and Remediation of LNAPL Contaminated Sites, API and USEPA, 9/94
Pesticides in the TIE Process, SETAC, 6/96
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Air-Cooled Steam Condensers and Dry- and Hybrid-Cooling Towers, Power-Gen, 12/01
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McIlvaine Hot Topic Hour, Mercury and Toxics Monitoring, 2/5/09
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EXHIBIT B

Christina Caro

From: Cashman, Jason <jcashman@stocktonport.com>
Sent: Tuesday, March 12, 2019 8:51 AM
To: Christina Caro
Cc: Whitener, Melissa; Miller, Katie
Subject: RE: Third Request for Access to Documents Referenced in the Draft Environmental Impact Report for Contanda Renewable Diesel Bulk Liquid Terminal Development Project (SCH No. 2018102008) and Second Request to Extend the Public Review and Comment Period

Ms. Caro,

This responds to your March 8, 2019 correspondence regarding the Draft Environmental Impact Report for the Contanda Renewable Diesel Bulk Liquid Terminal Development Project (the "DEIR"). In that letter, you (1) requested another extension of the public review and comment period for the DEIR and (2) requested clarification regarding certain documents you ostensibly requested under the California Public Records Act (CPRA) on February 6, 2019. After careful consideration of your letter and the documents requested, the Port will not be extending the public review and comment period beyond March 13, 2019.

Your March 8 letter also requested clarification regarding two categories of documents you ostensibly requested under the CPRA. First, you asserted on Page 3 that "The following DEIR reference documents which were specifically requested by SAFER CA were not provided in the Port's February 8, 2019, February 26, 2019, or March 6, 2019 document productions, and are still outstanding:" The Port has determined that the DEIR reference documents identified in your March 8, 2019 request (and which are listed below) were previously made available to you on the FTP site on February 26, 2019.

- Anchor QEA May 2018
- Caltrans and Port of Stockton, 2013
- CDFW CNDDB 2018
- Conestoga-Rovers & Associates, 2013
- Contanda August 2017
- Fagan 2003
- FTA 2006
- Port 2009
- Port July 2018
- San Joaquin County 2015
- SEG 2018
- SJCOES November 2008

If you had any difficulty accessing or downloading those documents, please let us know and we will do our best to assist in resolving any such problems.

Second, in your March 8 letter, you requested seven (7) documents/sources, listed below, which are referenced in the DEIR Appendix E, Air Quality and Greenhouse Gas Report. The Port has provided explanations and/or web links for these documents below.

- (1) Unprotected electronic copy of spreadsheets used to calculate emissions in Appendix B.
  - The requested materials are not "public records" as defined in Government Code section 6252, and are not in the actual or constructive possession of the Port. Furthermore, the requested materials

constitute confidential business information and trade secrets, as defined in Civil Code section 3426.1, subd. (d), and are therefore not subject to disclosure under the CPRA.

- (3) Source for Tables B-2 and B-3, pdf 257-266.
  - All "sources" for these tables that are subject to disclosure under the CPRA have already been provided.
- (7) Table B-6, pdf 270, 11/20/18 email from Lena DeSantis, Notes from 5/25/18 Telephone Conversation DeSantis and support for all "communication with Contanda re future year changes to fleet mix."
  - The requested email is protected by the attorney-client privilege and the attorney work-product doctrine and is therefore not subject to disclosure under the CPRA. No notes from the referenced telephone conversation have been located, following a diligent search and reasonable inquiry.
- (9) Table B-9, pdf 270, all support provided by Anchor for River/Harbor Information.
  - No responsive documents have been located, based on a diligent search and reasonable inquiry.
- (13) Table B-19, pdf 285, CARB 2017 Short Line/Class III Documentation.
  - All responsive documents in the Port's possession have been previously provided.
- (16) Table B-38, pdf 295, The Climate Registry, General Protocols.
  - These materials can be located at the following link: www.theclimateregistry.org
- (17) Pdf 323, CARB Roseville Rail Yard Study; CARB, Diesel Particulate Matter Exposure Assessment Study for the Ports of Los Angeles and Long Beach, April 2006; Port of Los Angeles, Berths 167-169 [Shell] Marine Oil terminal Wharf Improvement Project Draft EIR, Appendix B2.
  - These materials can be located at the following link: www.portoflosangeles.org/environment/environmental-documents.

Should you have any further requests, please do not hesitate to contact me at your convenience.

Kind Regards,

Jason Cashman

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209.946.0246	209.464.1251 fax

Table 8
Responses to Comments

Comment ID	Response
AB-1	Comment AB-1 does not relate to an environmental issue; therefore, no response is required pursuant to CEQA Guidelines Section 15088. The Port complied with all public disclosure and circulation requirements in connection with environmental review of the project, including CEQA and the California Public Records Act.
AB-2	This comment states that "the DEIR fails to disclose the extent of the Project's potentially significant impacts on air quality and public health." For a response to this comment, please see responses to Comments AB-24 through AB-30. The remainder of this comment raises legal contentions and does not relate to an environmental issue; therefore, no response is required pursuant to CEQA Guidelines Section 15088.
AB-3	Comment AB-3 summarizes the requirements of CEQA and the legal standards of review used by courts in reviewing CEQA claims. It does not contain any comments that relate to an environmental issue; therefore, no response is required pursuant to CEQA Guidelines Section 15088.
AB-4	Comment AB-4 is comprised entirely of allegations regarding availability of documents. It does not contain any comments that relate to an environmental issue; therefore, no response is required pursuant to CEQA Guidelines Section 15088. The Port complied with all requirements of CEQA and the California Public Records Act in connection with this project.
AB-5	Please see the response to Comment AB-22. All activity, engine characteristics, emission factors and supporting information are supported by references which were provided at the end of each Appendix B table. In instances where references were unclear, additional information was provided directly per request from Adams Broadwell Joseph & Cardozo PC. All citations and assumptions used in the calculations were provided a in manner that allows review and evaluation by a technical practitioner. CEQA requires that technical information be provided in a manner and format that allows a commenter to understand the basis of the methodology and calculations underlying the conclusions regarding environmental impacts. CEQA does not require the agency to disclose trade secret information such as unlocked Excel spreadsheets, which often contain software code, raw proprietary data, preparer comments, and notes that are not relevant to review of the analysis.
AB-6	Please see the response to Comment AB-5. Air emission calculations depend on source activity, engine characteristics, and emission factors. Each of these parameters were provided in Appendix B. General source activity is provided in Tables B-1 and B-2. Emission factors for vessel propulsion engines were provided in Table B-3. Emission factors for vessel auxiliary engines were provided in Table B-4. Supporting detail regarding vessel engine activity was provided in Table B-6. Supporting detail regarding vessel engine characteristics was provided in Tables B-6, B-7, and B-8. Harbor information was provided in Table B-9. Harbor craft activity, engine characteristics, emission factors and calculated emissions were provided in Table B-10. Supporting harbor craft activity was provided in Table B-11. Supporting information regarding harbor craft emission factors was provided in Tables B-12, B-13, and B-14. Emission calculations for vessels and harbor craft are determined by simply multiplying engine activity by the emission factors. Truck activity and calculated emissions was provided in Table B-15. Transit distances were provided in Table B-16. Emission factors obtained from CARB's EMFAC2017 inventory were provided in Table B-17. Emission calculations for trucks are determined by simply multiplying activity by the emission factors.

Comment ID	Response
	Switcher locomotive activity and fuel use were provided in Table B-18. Switcher locomotive emission factors and emissions were presented in Table B-19. Supporting information for switcher emission factors is provided in Tables B-20, B-21, and B-31 through B-34. Line haul activity and fuel use were provided in Tables B-22 and B-23. Line haul emission factors and emissions were presented in Tables B-24 and B-25. Supporting information for line haul emission factors is provided in Tables B-26 through B-30. Emission calculations for switcher and line haul locomotives are determined by simply multiplying fuel use by the emission factors. All activity, engine characteristics, emission factors and supporting information are supported by references which were provided at the end of each Appendix B table. In instances where references were unclear, additional information was provided directly per request from Adams Broadwell Joseph & Cardozo PC. Requested supporting emissions information were also provided to Adams Broadwell Joseph & Cardozo PC in February and March 2019. However, in some cases the request included software models and web-based analysis tools (e.g., CARB EMFAC, OFFROAD), developed by regulatory agencies. In these cases, web links active at the time of the analysis and output files were provided, which summarize the both the input and output. The request response also included access to AERMOD dispersion modeling files and the HARP2 model. Output from these models was provided in Appendix C and D, respectively. In addition, input files, which are too large to be included in appendices, and are usually provided by request, were provided. Therefore, emission records were fully disclosed in the DEIR.
AB-7	Please see the response to Comments AB-5 and AB-6. The requested supporting emissions information was also provided to Adams Broadwell Joseph & Cardozo PC in February and March 2019. However, in some cases the request included software models and web-based analysis tools (e.g., CARB EMFAC and OFFROAD), developed by regulatory agencies. In these cases, web links active at the time of the analysis and output files were provided, which summarize the both the input and output. The request response also included access to AERMOD dispersion modeling files and the HARP2 model. Output from these models was provided in Appendices C and D, respectively. In addition, input files, which are too large to be included in appendices, and are usually provided by request, were provided.
AB-8	Comment AB-8 purports to summarize the requirement of CEQA, including the holding of two CEQA decisions: 1) a recent California Supreme Court CEQA case, *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502; and 2) *Berkeley Keep Jets Over the Bay v. Bd. of Port Comm'rs*. (2001) 91 Cal. App. 4th 1344. The Port is aware of and considered these cases in the context of environmental review for the proposed project. This comment does not raise an environmental issue regarding the DEIR; therefore, no response is required pursuant to CEQA Guidelines Section 15088.
AB-9	Comment AB-9 purports to summarize the standard of review that applies to claims asserted in CEQA litigation. This comment does not raise an environmental issue regarding the DEIR; therefore, no response is required pursuant to CEQA Guidelines Section 15088.
AB-10	Please see the responses to Comments AB-5, AB-7 and AB-22, which address the commenter's various claims on the lack of supported emission estimate assumptions.
AB-11	Please see the responses to Comments AB-24 through AB-30, which address the commenter's various claims on emission modeling errors.

Comment ID	Response
AB-12	Please see the responses to Comments AB-6, AB-14, AB-24, AB-26, and AB-30, which address the commenter's various claims that onsite emissions were underestimated.
AB-13	Please see the responses to Comments AB-24, AB-26, and AB-30, which address the commenter's various claims that on-site emissions were omitted.
AB-14	Criteria pollutant emissions were quantified within the SJVAPCD. Although the proposed project would generate substantially more emissions within the SJVAB than any other affected air basin, the Port acknowledges that criteria pollutant emissions from proposed project operations may also occur across other air basins beyond the SJVAB. However, in response to the comment regarding emissions from trucks and rail traveling within California, for the purposes of assessing significance, the Port conservatively chose to compare emissions within the SJVAB to the SCJVAPCD thresholds as its means of determining significance of regional emission impacts. The Port acknowledges that trucks may generate emissions outside the SJVAB. However, it would be impossible to quantify emissions in any other region. The actual travel routes in these areas and the number of truck trips in these areas is speculative because the ultimate destination of cargo varies. Contanda does not own the renewable fuel, but instead holds contracts with companies that do to store the fuel between product distribution and purchase. The renewable fuel is sold to various customers all over the Northern California area, and can include a range of deliveries from gas stations to refineries. Truck routes vary weekly depending on market forces, making emission estimations outside the SJVAB speculative at best. Trains would also generate emissions in and outside of the SJVAPCD, the Port is serviced by two Class I railroad companies, and the percentages of product being shipped cargo per train and ultimate rail routes outside the air basin would be different depending on which rail company serviced the actual customer purchasing or selling the renewable diesel. Therefore, any attempt to quantify and evaluate the significance of air quality impacts outside the basin would be wholly speculative and therefore of no value to the public or the decisionmakers. Therefore, analysis of these impacts is not required. See CEQA Guidelines section 15154 (if a "particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact.") In regard to ships, please see the response to Comment AB-28, which provides ship emissions within the BAAQMD. As shown, emissions are below significance.
AB-15	SJVAPCD has developed a voluntary emissions control program in which project applicants can purchase emission reduction credits in lieu of direct mitigation. The air district believes that Voluntary Emission Reduction Agreements (VERAs) are a feasible mitigation under CEQA for many projects but leaves the determination of feasibility up to the lead agency. Credits can only be purchased for up to 10 years. The cost of credits is determined in Rule 9510 (Indirect Source Review) and is approximately $9,000 to $10,000 per ton per year for up to 10 years. The proposed project exceeds the NO_X threshold by 37 tons per year, which would require credit purchases costing between $330,000 to $370,000 a year for a total of $3,330,000 to $3,700,000 over the 10-year period. There are several issues that make VERAs infeasible for the proposed project, including cost. The additional cost associated with a VERA would render the proposed project financially infeasible. In addition, a VERA would not be effective to fully mitigate the significant impacts of the proposed project. The proposed project is expected to operate for up to 40 years, but a VERA can only mitigate impacts for 10 years, which would mean that most of the proposed project's emissions would not be mitigated and impacts would continue to be significant for the majority of the proposed project's operational lifespan.

Comment ID	Response
	Finally, it is not clear whether VERA credits are effective mitigation, as they do not directly offset criteria pollutant emissions. Instead, VERA agreements leave it to the discretion of the District to identify and carry out projects that it determines are equivalent to the emissions of the project subject to the agreement. VERA credits are not banked but are used to fund prospective projects. Unlike credit banks used to mitigate for biological impacts, the emission reduction projects are not completed and then emissions savings banked for future use as a mitigation. The air district instead uses the money generated by the VERA program to fund future emissions-savings projects, and there is no guarantee when such opportunities may arise, if at all. This arrangement may allow for a lapse between funding and emissions savings and/or emissions not being offset at all. Therefore, VERAs cannot ensure timely, effective mitigation.
AB-16	Please see the responses to Comments AB-35 and AB-36. Because the health risks at the maximum residential and off-site worker receptors (the "single point" mentioned in the comment) were predicted to be less than significant, no further analysis was warranted because the health risks at all other residential and off-site worker receptors would also be less than significant by definition.
AB-17	Please see the responses to Comments AB-36 through AB-51, which address the commenter's claim that the HRA modeling included errors.
AB-18	Please see the responses to Comments AB 36 and AB-42 through AB-48. The cancer risk value of 6.973 in 1 million from project operation in the DEIR is correct. The comment is incorrect because it erroneously applied a DPM unit risk factor of 3.0E-4 $(\mu g/m^3)^{-1}$ to the annual DPM concentration to estimate risk.
AB-19	Please see the response to Comment AB-49. As lead agency, the Port chose to prepare the HRA in accordance with the 2015 OEHHA Risk Assessment Guidelines, which are widely used and accepted by CEQA practitioners in California. As stated in the DEIR, in accordance with OEHHA guidelines, no unusual situations were identified for the proposed project which would warrant an acute HI analysis.[6,7] As a result, the proposed project's impact with respect to the acute hazard index would be less than significant.
AB-20	As noted above and in more detail in the responses to Comments AB-20 through AB-52, the DEIR's findings are correct as presented and recirculation is not warranted.
AB-21	Response to this overview comment are provided in the responses to Comments AB-22 through AB-52.
AB-22	**The comment claims that the DEIR failed to support emission calculations associated with the air quality and health risk assessment.** Air emission calculations depend on source activity, engine characteristics, and emission factors. Each of these parameters were provided in Appendix B. General source activity is provided in Tables B-1 and B-2. Emission factors for vessel propulsion engines were provided in Table B-3. Emission factors for vessel auxiliary engines were provided in Table B-4. Supporting detail regarding vessel engine activity was provided in Table B-6. Supporting detail regarding vessel engine characteristics was provided in Tables B-6, B-7, and B-8. Harbor information was provided in Table B-9. Harbor craft activity, engine characteristics, emission factors and calculated emissions were provided in Table B-10. Supporting harbor craft activity was provided in Table B-11. Supporting information regarding harbor craft emission factors was provided in

[6] DEIR Appendix E, Page 6.
[7] OEHHA 2015. Appendix D, Page D-3.

Comment ID	Response
	Tables B-12, B-13, and B-14. Emission calculations for vessels and harbor craft are determined by simply multiplying engine activity by the emission factors. Truck activity and calculated emissions was provided in Table B-15. Transit distances were provided in Table B-16. Emission factors obtained from CARB's EMFAC2017 inventory were provided in Table B-17. Emission calculations for trucks are determined by simply multiplying activity by the emission factors. Switcher locomotive activity and fuel use were provided in Table B-18. Switcher locomotive emission factors and emissions were presented in Table B-19. Supporting information for switcher emission factors is provided in Tables B-20, B-21, and B-31 through B-34. Line haul activity and fuel use were provided in Tables B-22 and B-23. Line haul emission factors and emissions were presented in Tables B-24 and B-25. Supporting information for line haul emission factors is provided in Tables B-26 through B-30. Emission calculations for switcher and line haul locomotives are determined by simply multiplying fuel use by the emission factors. All activity, engine characteristics, emission factors and supporting information are supported by references which were provided at the end of each Appendix B table. In instances where references were unclear, additional information was provided directly per request from Adams Broadwell Joseph & Cardozo PC. Requested supporting emissions information were also provided to Adams Broadwell Joseph & Cardozo PC in February and March 2019. However, in some cases the request included software models and web-based analysis tools (e.g., CARB EMFAC, OFFROAD), developed by regulatory agencies. In these cases, web links active at the time of the analysis and output files were provided, which summarize the both the input and output. The request response also included access to AERMOD dispersion modeling files and the HARP2 model. Output from these models was provided in Appendix C and D, respectively. In addition, input files, which are too large to be included in appendices, and are usually provided by request, were provided. **The comment also claims that is standard practice to supply the unlocked Excel spreadsheets and citations for all assumptions used in the calculations (e.g., emission factors, trip length, engine type).** As stated above, all citations and assumptions used in the calculations were provided in manner that facilitates review by a technical practitioner. However, it is not in fact standard practice to supply unlocked Excel spreadsheets as these spreadsheets often contain software code, raw proprietary facility data, preparer comments and notes that are not relevant to review of the analysis. The information provided in the DEIR appendices and in February and March 2019 supports the calculations and goes above and beyond standard industry practice. Provided information allows a technical practitioner to verify the calculations, air dispersion modeling and health risk assessment. **The comment also describes that a reverse engineering analysis was undertaken by the commenter and produced results that "*require mitigation measures and enforceable conditions to assure implementation*."** The comment does not identify which mitigation measures or enforceable conditions it is referring to. In addition, because the commenter's analysis was founded on activity, source parameters and emission factors that do not reflect proposed project operations, the results of their analysis subsequently also do not reflect the proposed project impacts. Please refer to the response to Comments AB-23 through AB-51.

Comment ID	Response
AB-23	**The comment claims that omissions in the analysis underestimated air quality, GHG, and health impacts.** The response to this comment is addressed in the response to Comments AB-24 through AB-30.
AB-24	**The comment claims that the DEIR omitted fugitive VOC emissions from unloading of railcars and describes in detail valves, flanges and other connections and activities that, according to the comment, may result in fugitive emissions.** As discussed in DEIR, Appendix E, vapor pressure of renewable diesel, the only product to be handled at the proposed project facility, is very low. The MSDS for renewable diesel was also provided. Vapor pressure, vapor density, and boiling point are three parameters normally reported on an MSDS, which indicate a material's propensity to evaporate and result in fugitive emissions. Vapor pressure is a measure of the material's tendency to form a vapor. The lower the vapor pressure, the lower the potential vapor concentration. The MSDS shows that the vapor pressure of renewable diesel is less than 0.3, measured in millimeters of mercury (mm Hg). This is a very low vapor pressure, orders of magnitude lower than conventional diesel or gasoline. For comparison, conventional diesel fuel has a vapor pressure of approximately 2 mm Hg,[8] and gasoline has a vapor pressure of approximately 220 to 750 mm Hg[9]. Vapor density is the weight per unit volume of a pure gas or vapor. Light gases (density less than 1) such as helium rise in air. Heavy gases and vapors (density greater than 1) can accumulate in low-lying areas such as pits and along floors. The MSDS shows that the vapor density of renewable fuel is greater than 1, making it heavy in gaseous form. Boiling point is an indicator of product volatility. Specifically, a high boiling point indicates low volatility. The boiling point of renewable diesel is 150 to 315°C (300 to 600°F), which is comparable to diesel fuel. Although renewable fuel is a new product, the low volatility of diesel has been well documented. USEPA, in AP-42, Chapter 3,[10] states that: "Evaporative losses are insignificant in diesel engines due to the low volatility of diesel fuels." USEPA, in Evaporative Emissions from On-road Vehicles in MOVES2014[11] also states that: "Due to the low vapor pressure of diesel fuel, diesel evaporative losses are considered negligible." SJVAPCD, in its Compliance Assistance Bulletin, states that: "Tanks used to store diesel are exempt from Enhanced Vapor Recovery" due to low volatility of diesel fuels.[12] Based on the above and per the DEIR, renewable diesel is not expected to result in appreciable emissions from tanks and associated pumps, and valves, etc., due to its low vapor pressure, vapor density and volatility. Furthermore, CARB created the Alternative Diesel Fuels (ADF) regulation,[13] as a framework for low carbon, lower polluting, diesel fuel substitutes to enter the commercial market in California, while mitigating any potential environmental or public health impacts. Before new fuel specifications can be established, California Health and Safety Code (HSC) Section 43830.8 requires that a multimedia evaluation be conducted and reviewed by the California Environmental Policy Council (CEPC). The CEPC must determine if the proposed regulation poses a significant adverse impact on public health

[8] http://www.docs.citgo.com/msds_pi/AG2DF.pdf
[9] http://www.docs.citgo.com/msds_pi/UNLEAD.pdf
[10] USEPA (U.S. Environmental Protection Agency). *AP-42: Compilation of Air Emission Factors*. Chapter 3.
[11] USEPA (U.S. Environmental Protection Agency). *Evaporative Emissions from On-Road Vehicles in Moves2014*. https://www.epa.gov/moves/moves-onroad-technical-reports
[12] SJVAPCD (San Joaquin Valley Air Pollution Control District), 2013. *Compliance Assistance Bulletin 2013*. Available at: https://www.valleyair.org/busind/comply/AssistanceDocuments/CAB_AST_EVR_february2013.pdf.
[13] 13 CCR 2293-2293.9 and Appendix 1.

<table>
<tr><th>Comment ID</th><th>Response</th></tr>
<tr><td></td><td>or the environment. CARB prepared The Multimedia Evaluation of Renewable Diesel in 2015, which contains this determination.[14] CARB concluded that renewable diesel does not pose a significant adverse impact on public health or the environment from potential air quality impacts.</td></tr>
<tr><td>AB-25</td><td>The comment claims that the DEIR omitted fugitive VOC emissions associated with truck loading.

Please see the response to Comment AB-24.</td></tr>
<tr><td>AB-26</td><td>Criteria pollutant emissions were quantified within the SJVAPCD. Although the Project would generate substantially more emissions within the SJVAB than any other affected air basin, the Port acknowledges that criteria pollutant emissions from Project operations may also occur across other air basins beyond the SJVAB. However, in response to the comment regarding emissions from trucks and rail traveling within California, for the purposes of assessing significance, the Port conservatively chose to compare emissions within the SJVAB to the SJVAPCD thresholds as its means of determining significance of regional emission impacts.

The Port acknowledges that trucks may generate emissions outside the SJVAB. However, the actual travel routes in these areas and the number of truck trips in these areas is speculative because the ultimate destination of cargo varies. Contanda does not own the renewable fuel, but instead holds contracts with companies that do to store the fuel between product distribution and purchase. The renewable fuel is sold to various customers all over the Northern California area, and can include a range of deliveries from gas stations to refineries. Truck routes vary weekly depending on market forces, making emission estimations outside the SJVAB speculative at best. Trains would also generate emissions in the, the Port is serviced by two Class I railroad companies, and the percentages of product being shipped cargo per train and ultimate rail routes outside the air basin would be different depending on which rail company serviced the actual customer purchasing or selling the renewable diesel.

Please see the response to Comment AB-28 for additional information on ship emissions.</td></tr>
<tr><td>AB-27</td><td>The comment claims that the DEIR omitted analysis of truck exhaust emission outside of the SJVAQPD jurisdiction.

Please see the response to Comment AB-26.</td></tr>
<tr><td>AB-28</td><td>The comment states that the DEIR omitted analysis of vessel exhaust emission outside of the SJVAQPD jurisdiction.

In response to the comment, OGV emissions in the BAAQMD would be below BAAQMD thresholds, as follows:

Annual Operational Emissions - Project in BAAQMD (tons/year)
<table>
<tr><th>Source Category</th><th>PM_{10}</th><th>$PM_{2.5}$</th><th>NOX</th><th>VOC</th></tr>
<tr><td colspan="5">2020 Project</td></tr>
<tr><td>Ship Transit</td><td>0</td><td>0</td><td>5</td><td>0</td></tr>
<tr><td colspan="5">CEQA Impacts</td></tr>
<tr><td>BAAQMD Significance Threshold</td><td>15</td><td>10</td><td>10</td><td>10</td></tr>
<tr><td>Significant?</td><td>No</td><td>No</td><td>No</td><td>No</td></tr>
</table></td></tr>
</table>

[14] CARB (California Air Resources Board), 2015. Multimedia Evaluation of Renewable Diesel. Available at: https://ww2.arb.ca.gov/sites/default/files/2018-08/Renewable_Diesel_Multimedia_Evaluation_5-21-15.pdf.

<table>
<tr><th>Comment ID</th><th>Response</th></tr>
<tr><td></td><td>
Annual Operational Emissions - Project in BAAQMD (pounds/day)
<table>
<tr><th>Source Category</th><th>PM_{10}</th><th>$PM_{2.5}$</th><th>NO_X</th><th>VOC</th></tr>
<tr><td colspan="5">2020 Project</td></tr>
<tr><td>Ship Transit</td><td>0</td><td>0</td><td>25</td><td>1</td></tr>
<tr><td colspan="5">CEQA Impacts</td></tr>
<tr><td>BAAQMD Significance Threshold</td><td>82</td><td>54</td><td>54</td><td>54</td></tr>
<tr><td>Significant?</td><td>No</td><td>No</td><td>No</td><td>No</td></tr>
</table>
This information has been added to the FEIR but, as shown, does not change significance findings.
</td></tr>
<tr><td>AB-29</td><td>The comment claims that the DEIR omitted analysis of train exhaust emission outside of the SJVAQPD jurisdiction.
Please see the response to Comment AB-26.</td></tr>
<tr><td>AB-30</td><td>The comment claims that the DEIR omitted evaporating emissions associated with rail car transit.
Please see the response to Comment AB-26 regarding the inherent speculation in making assumptions regarding rail transit outside of the analyzed area.
The comment also claims that during summer temperatures of 100°F, renewable diesel would evaporate resulting in evaporative fugitive hazardous air pollutants.
Although high summer temperatures may occur, the mean temperature in the San Joaquin Valley is approximately 62°F. The table below shows historical average maximum and minimum temperatures. SJVAPCD CEQA thresholds are health-protective and are analyzed on an annual basis for regional impacts associated with criteria pollutants. SJVAPCD CEQA thresholds for cancer risk are based on 30-year exposure. An analysis based on individual hot summer days would not allow for a clear understanding of proposed project impacts and would not be comparable to the CEQA thresholds. Per the response to Comment AB-24, USEPA, CARB, and SJVAPCD all regard evaporative diesel emissions to be negligible. Since renewable diesel's vapor pressure is orders of magnitude lower than diesel and its vapor density and boiling point are comparable to diesel, evaporative emissions associated with renewable diesel would also be negligible.
The following presents temperatures in the Stockton area:
<table>
<tr><th></th><th>Annual Average Maximum (F)</th><th>Annual Average Minimum (F)</th></tr>
<tr><td>Stockton Metro Station 1948-2016</td><td>74.5</td><td>48.5</td></tr>
<tr><td>Stockton Metro Station 1981-2010</td><td>74.9</td><td>49</td></tr>
</table>
Reference: Western US Climate Historical Summaries. Available at: https://wrcc.dri.edu/Climsum.html.
</td></tr>
</table>

Comment ID	Response
	In addition, the references presented as supporting information in the comment, aside from describing various connections, valves and pressure relief devices typically installed on rail cars, are not relevant to the proposed project or its handling of renewable diesel. Reference #22 is a study that compares the performance of various surge pressure reduction devices geared toward determining such device requirements. This study has no bearing on the proposed project or its use of renewable diesel, other than to show that rail cars are equipped with pressure release devices. Reference #23 describes the types of damage associated with tank cars, identifies various connections, and presents recommendations for damage inspection and assessment. This reference has no bearing on the proposed project or its handling of renewable diesel, other than to show that rail cars are equipped with pressure release devices. Reference #23 is a field guide intended for use by emergency responders. This study has no bearing on the proposed project or its handling of renewable diesel, other than to show that rail cars are equipped with pressure release devices. Reference #23 is a YouTube video on tank car loading and unloading. It is a training video for plant personnel and customers to help eliminate non-accident releases. This video has no bearing on the proposed project or its handling of renewable diesel, other than to show that rail cars are equipped with valves and pressure release devices. Reference #23 is a series of photographs that illustrate different fittings/valves and fitting/valve configurations on rail cars. This list of slides has no bearing on the proposed project or its handling of renewable diesel, other than to show that rail cars are equipped with valves and pressure release devices.
AB-31	**This comment is unclear. If the comment claims that rail emissions outside of the SJVAPCD should be quantified:** Please see the response to Comment AB-26 regarding the inherent speculation in making assumptions regarding rail transit outside of the analyzed area. **If the comment is suggesting that the transport of project emissions to other regions be analyzed:** Air pollutant transport analyses are undertaken by regulatory agencies to inform regulatory policies, rules, thresholds, and measures designed to reach attainment with ambient air quality standards. For example, such analyses were used to develop CARB's Ozone Transport Mitigation Regulations (17 CCR 70600-70601), which require air districts to include sufficient emission control measures in their attainment plans that are in turn submitted to CARB for SIP inclusion. Inter-basin transport analyses are not intended and not useful for project-level evaluations, which are required to comply with rules developed by the regulatory agencies and are assessed for CEQA via comparison to thresholds and ambient air quality standards, developed by regulatory agencies. The comment references two documents. The first document (comment letter reference #24) was prepared by CARB in 2001. It assesses transport relationships between air basins in California and its intent is to inform air quality plans required under the California Clean Air Act and Federal Clean Air Act. The second study (comment letter reference #25) was prepared for the BAAQMD. The study investigated weather patterns under which $PM_{2.5}$ and ozone may be transported between adjacent air basins. The study stopped short of confirming the presence of transport or quantifying it. The study was intended to guide future modeling efforts and field study on the part of regulatory districts to quantify transport impacts.

Comment ID	Response
	These documents reflect the type of information used by CARB, on a state level, and local air districts such as the SJVAPCD, on a more local level, to develop policies, rules, and CEQA thresholds that are health-protective and that are designed to reach attainment with ambient air quality standards. **If the comment is suggesting that impacts be quantified cumulatively for all of California:** It is unclear what the comment means by cumulative impacts. CEQA, however, is clear and, as defined in Section 15355 of the CEQA Guidelines, 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. Section 15130 of the CEQA Guidelines 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 Section 15065(a)(3) of the CEQA Guidelines: "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." DEIR Section 4 identifies cumulatively relevant projects, discusses cumulative impacts, and evaluates the proposed project's contribution to cumulative impacts.
AB-32	**The comment claims that MM-AQ-1 (idling reductions) and MM-AQ-2 (use of clean trucks) are insufficient because NO_X emissions are chiefly due to locomotives and trucks.** As stated in the DEIR, the proposed project would result in a net increase of emissions, primarily from truck and locomotive emissions. Because the proposed project would have no control over these emission sources during transit, mitigation would not be feasible. Contanda is a bulk liquid storage company that operates for-hire terminals. Contanda's terminals lease tank space to product owners for a fee and are independent of control of major oil and chemical companies. Contanda does not own the renewable fuel, but instead holds contracts with companies that do to store the fuel between product distribution and purchase. The renewable fuel is sold to various customers all over the Northern California area, and can include a range of deliveries from gas stations to refineries. This type of operation limits the contractual control over the rail, trucks, and vessels because Contanda does not own or operate these sources. Contanda's customers make all arrangements for vessel rail and truck calls. Rail locomotives are owned and operated by Union Pacific Railroad and BNSF Railway, with one switching company, the Central California Traction Company (CCT), operating all switching for all port customers in-port. Because there are only two main line companies and only one in-port switcher, any attempts at source controls could result in loss of service. Vessels are part of the tramp trade, which is made up of vessels that do not have a fixed schedule, customer, or port of call, but rather operate contractually as the need arises. Retrofitting vessels is a huge investment that would be hard to justify on a vessel that may only call once a year at the Port. Truck calls are also arranged by customers, who contract out to local trucking companies. However, Contanda can control truck movements on terminal, which allows them to implement MM-AQ-1. In terms of MM-AQ-2, because the truck companies are local, will make more frequent and steady calls, and are required to participate in the larger CARB diesel programs including the Heavy-Duty Vehicle Program, there may be more success in providing incentives through customer contracts to encourage cleaner trucks. However, as discussed in the DEIR and clarified in the FEIR, because this mitigation measure may be limited in terms of success, no credit was taken for emission reductions. Finally, because it is speculative to assume how many 2017 trucks would call at the facility, MM-AQ-2 is not quantified in the analysis and the proposed project does not take credit for this mitigation.

Comment ID	Response
	The comment also claims that MM-AQ-1 (idling reductions) is not a valid mitigation measure because it is required by regulation. MM-AQ-1 states that Contanda will require trucks to minimize idling time to 2 minutes while on terminal. CARB's Airborne Toxic Control Measure limits truck idling to 5 minutes.[15] Because MM-AQ-1 goes above and beyond existing regulatory requirement, MM-AQ-1 is valid mitigation under CEQA. The comment also states that no mitigation is proposed for cumulative NO_X impacts. MM-AQ-1 and MM-AQ-2 would be applied to mitigate the project's contribution to cumulative impacts. This revision will be reflected in the FEIR. This change will not change the significance determination under cumulative impacts.
AB-33	SJVAPCD has developed a voluntary emissions control program in which project applicants can purchase emission reduction credits in lieu of direct mitigation. The air district believes that Voluntary Emission Reduction Agreements (VERAs) are a feasible mitigation under CEQA for many projects, but leaves the determination of feasibility up to the lead agency. Credits can only be purchased for up to 10 years. The cost of credits is determined in Rule 9510 (Indirect Source Review) and is approximately $9,000 to $10,000 per ton per year for up to 10 years. The proposed project exceeds the NO_X threshold by 37 tons per year, which would require credit purchases costing between $330,000 to $370,000 a year for a total of $3,330,000 to $3,700,000 over the 10-year period. There are several issues that make VERAs infeasible for the proposed project, including cost. Therefore, the Port finds VERAs infeasible as mitigation for the following reasons: • The proposed project is expected to operate for up to 40 years, which would mean that most of the proposed project's emissions would not be mitigated and impacts would continue to be significant for the majority of the proposed project's operational lifespan. • VERA credits are not banked but are used to fund prospective projects. Unlike credit banks used to mitigate for biological impacts, the emission reduction projects are not completed and then emissions savings banked for future use as a mitigation. The air district instead uses the money generated by the VERA program to fund future emissions-savings projects. This arrangement may allow for a lapse between funding and emissions savings. Therefore, VERAs cannot ensure timely mitigation. • While projects funded by VERAs occur in the air district, they may occur anywhere in the air district. The Port prefers that customers invest on emission reduction programs within the Port to address localized air quality.
AB-34	Responses to this overview comment are provided in the responses to Comments AB-35 through AB-51.
AB-35	**The comment claims that the DEIR's HRA did not follow OEHHA guidance, did not properly use HARP or RAST, made deviations that underestimated health impacts, and deliberately hid significant health risks.** This is a summary comment; please see the responses to Comments AB-36 through AB-51, which address these issues. **The comment also claims that the HRA did not evaluate health risks at the point of maximum impact (PMI).** The AERMOD receptor grid modeled for the HRA covered the entire modeling domain, including the PMI. However, for purposes of assessing significance, the Port, as lead agency, chose to evaluate risks at the maximum residential and off-site worker receptors (the latter are presented in response to

[15] 13 CCR 2485

Comment ID	Response
	Comment AB-37). These results are more meaningful as they correspond to actual inhabited locations. By contrast, the risk at the PMI is only hypothetical because nobody is there to be exposed to the risk. **The comment also claims that the risk calculations reported in the produced files and the DEIR are for a single point, preventing any meaningful review of the location of the PMI.** Please see the response to Comment AB-35, immediately preceding this response. In addition, because the health risks at the maximum residential and off-site worker receptors (the "single point" mentioned in the comment) were predicted to be less than significant, no further analysis was warranted because the health risks at all other residential and off-site worker receptors would also be less than significant by definition. **The comment also claims that the HRA failed to display the results of its analysis on an isopleth map or identify the physical location of the sensitive receptor(s).** It is standard practice in CEQA documents to show isopleths if health risks are found to be significant. Because all health risks were found to be less than significant, isopleth maps were not warranted. DEIR, Figure 2 of Appendix E shows the physical location of the maximum residential receptor for health risks. **The comment also claims that the risk values at the PMI should be the metric used to judge significance.** Please see the response to Comment AB-35 (second response). **The comment also claims that AERMOD was run with emission rates in grams/square meter/second instead of the more typical 1 gram/second.** Because DPM was the only pollutant evaluated in the HRA, the Port chose to model DPM with actual emissions in AERMOD instead of 1 gram/second "unit" emission rates. This approach was arguably simpler than the 1 gram/second approach because the actual DPM concentration in $\mu g/m^3$ was produced directly by AERMOD and input directly into HARP. For line and area sources, the AERMOD output file displays source emissions in grams/square meter/second whether unit emissions rates are modeled or not. This is a feature of AERMOD which cannot be controlled. **The comment also claims that the polygon area for construction emissions could not be determined from the AERMOD output files.** Comment noted. In its output files, AERMOD does not provide the coordinates of the vertices for polygons. The polygon vertices used in AERMOD for construction are as follows: **UTM X (m) / UTM Y (m)** 647283.26 / 4201227.63 647261.16 / 4201343.74 647439.94 / 4201377.06 647453.42 / 4201306.62 647376.55 / 4201291.52 647385.51 / 4201247.42

Comment ID	Response
	The comment also claims it was not possible to determine whether peak construction emissions from point sources were diluted over a large area. Because the DEIR quantified only long-term health risks (i.e., cancer risk and chronic hazard indices), it was appropriate to model construction emissions distributed evenly over the construction site since construction activities would move all over the site during the construction year. **The comment also claims that the cancer risks from both the construction and operational phases are identical in the HRA.** Please see the response to Comment AB-36 (second response). **The comment claims that when the cited guidance is followed and errors and omissions are corrected, construction and operational cancer risks and acute health impacts from DPM emissions are highly significant and unmitigated.** The HRA in the DEIR was done correctly, and risk results were found to be less than significant. Please see the responses to Comments AB-36 through AB-51 for detailed responses.
AB-36	**The comment claims that the cancer significance threshold used in the DEIR is inconsistent with OEHHA guidance.** The DEIR is clear that thresholds used to determine significance reflect thresholds developed by the SJVAPCD for the purpose of CEQA projects. The purpose of the OEHHA guidance is to provide procedures for conducting an HRA; OEHHA does not set significance thresholds and delegates air quality regulatory agencies, such as the SJVAPCD, to develop significance thresholds. OEHHA Guidance states that "*Typical District guidelines for evaluating risk management of Hot Spots facilities range around a cancer risk of 1 per 100,000 exposed persons as a trigger for risk management. Permitting thresholds also vary for each District.*" The DEIR correctly used OEHHA guidance to prepare the HRA and SJVAPCD CEQA thresholds to determine the significance under CEQA. **The comment also claims that it is implausible that the maximum construction and operational cancer risks are equal.** Table 8 of Appendix E of the DEIR shows that the maximum residential cancer risk for construction is 6.972 in 1 million, and the maximum residential cancer risk for operation is 6.973 in 1 million. This is a coincidence; Table 8 purposely reports the risks to four significant figures to show that the results are not identical. These nearly identical results are plausible, and are correct, for the reasons stated in the following paragraphs. The DEIR reports that, for construction, AERMOD modeled a DPM emission rate of 366 pounds per year and predicted a maximum annual residential concentration of 0.03922 µg/m^3.[16] For operation, AERMOD modeled a DPM emission rate of 616 pounds per year (1.7 times higher than construction) and predicted a maximum annual residential concentration of 0.0102 µg/m^3 (3.8 times lower than construction).[17] The reason the construction concentration is higher than the operational concentration, despite the lower construction emissions, is because the construction emissions are all concentrated at the project site, are relatively low to the ground, and are relatively close to the maximum impacted residential receptor, while the operational emissions are spread out and diluted over a much larger geographical area, along ship, rail, and truck transit routes.[18] In addition, because construction would occur over a roughly 1-year period, the predicted DPM concentration was

[16] DEIR Appendix E, Page 5. DPM emission rate converted from tons per year to pounds per year.
[17] DEIR Appendix E, Page 6.
[18] DEIR Appendix E, Figures 1, 2, and 3.

Comment ID	Response
	selected from the worst case year of meteorological data, whereas the operational concentration represents an average over all 5 years of meteorological data.[19] The DEIR also reports that, for construction, HARP modeled a maximum annual residential concentration of 0.03922 µg/m^3 and predicted a cancer risk of 6.972 in 1 million. For operation, HARP modeled a maximum annual residential concentration of 0.0102 µg/m^3 (3.8 times lower than construction) and predicted a cancer risk of 6.973 in one million (essentially the same as construction).[20] There are two key differences in assumptions used in HARP for the construction and operational risk calculations that explain why the risks can be nearly identical even though the DPM concentrations are different: 1) as stated in the DEIR, the construction risk calculation assumed an exposure period of approximately 1 year, while the operational risk calculation assumed an exposure period of 30 years.[21] This assumption decreases the construction risk relative to the operational risk; and 2) the construction risk calculation conservatively assumed that a person's single year of exposure would occur from the third trimester before birth to 1 year after birth. This period occurs during a person's most sensitive stage of life, as defined by the OEHHA Risk Assessment Guidelines, when the breathing rates per unit of body weight are highest and an additional child sensitivity factor of 10 is applied to the risk.[22] This assumption increases the construction risk relative to the operational risk. By coincidence, these two opposing influences produced nearly identical risk results for construction and operation. **The comment also claims that operational emissions were modeled as a combination of eight point and line sources.** The comment is incorrect. Operational emissions were modeled in AERMOD as a combination of nine point sources, one volume, and 122 line sources.[23] **The comment also claims that the maximum residential cancer risk from construction should be 12 in one million, not 6.972 in one million.** The cancer risk value of 6.972 in one million from construction in the DEIR is correct. The comment is incorrect because it erroneously applied a DPM unit risk factor of 3.0E-4 (µg/m^3)$^{-1}$ to the annual DPM concentration to estimate risk. Instead, the commenter should have based the cancer risk calculation on the cancer potency (slope) factor of 1.1 (mg/kg/day)$^{-1}$. As explained in the 2015 OEHHA Risk Assessment Guidelines, "The cancer slope factor assumes continuous lifetime exposure to a substance, and is expressed in units of inverse dose [i.e., (mg/kg/day)$^{-1}$]. Another common potency expression is in units of inverse concentration [(µg/m^3)$^{-1}$] when the slope is based on exposure concentration rather than dose; this is termed the unit risk factor. To accommodate the use of age-specific exposure variates, the Hot Spots program has translated the unit risk factors based on concentration to units of inverse dose. This allows calculation of risk for age groupings, as exposure varies with age. It also allows for application of Age Sensitivity Factors for early life exposures."[24]
AB-37	**The comment states that the DEIR did not evaluate construction cancer risk to on-site workers.** CEQA does not require evaluation of impacts to on-site workers. Air quality impacts to on-site workers and employees falls under the jurisdiction of the California Division of Occupational Safety and Health (Cal/OSHA) and is not a CEQA requirement.

[19] DEIR Appendix E, Page 7.
[20] DEIR Appendix E, Table 8.
[21] DEIR Appendix E, Page 7.
[22] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments.* Tables 5.6 and 8.3. February 2015. Available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.
[23] DEIR Appendix D2 of Appendix E, Page 1.
[24] OEHHA 2015, Page 7-1.

<table>
<tr><th>Comment ID</th><th>Response</th></tr>
<tr><td></td><td>
The comment also states that the DEIR did not evaluate cancer risk to offsite workers.

Impacts to off-site worker receptors were inadvertently excluded in the DEIR. They are included in this response to comment as follows:

<table>
<tr><th>Receptor Type</th><th>Construction/ Operation</th><th>Annual Average DPM Concentration (µg/m^3)</th><th>UTM Location (m)</th><th>Cancer Risk</th></tr>
<tr><td>Worker</td><td>Construction</td><td>6.50E-01</td><td>647370, 4201245</td><td>1.61E-06</td></tr>
<tr><td>Worker</td><td>Operation</td><td>8.54E-02</td><td>647050, 4201400</td><td>5.07E-06</td></tr>
<tr><td colspan="4">Total Risk</td><td>6.68E-06
6.7 in 1 million</td></tr>
<tr><td colspan="4">Significance Threshold</td><td>20 in 1 million</td></tr>
<tr><td colspan="4">Significant?</td><td>No</td></tr>
</table>

The table shows that cancer risk to off-site workers would be below the SJVAPCD significance threshold. This information has been added to the FEIR.

The comment also claims that acute health impacts are significant.

Please refer to the response to Comment AB-49.

The comment also claims that accurate representation of individual construction emission sources is required for the acute health impacts.

Because the DEIR quantified only long-term health risks (i.e., cancer risk and chronic hazard indices), it was appropriate to model construction emissions distributed evenly over the construction site because construction activities would move all over the site during the construction year.
</td></tr>
<tr><td>AB-38</td><td>
The comment claims that the operational health risks to off-site workers would exceed threshold of significance.

Please see the responses to Comments AB-36 and AB-37.

The comment also claims that the construction HRA has “the same errors, omissions, and unsupported adjustments to source locations that in are the operational HRA.”

The only comments on the operational HRA that could also apply to the construction HRA are Comment AB-48 (evaluating off-site workers) and Comment AB-49 (evaluating the acute hazard index). Please refer to the responses to Comment AB-37 (which addresses Comment AB-48) and Comment AB-49.
</td></tr>
<tr><td>AB-39</td><td>
The comment claims that the document is deficient because it did not quantify cumulative health risk. As discussed in Section 4.2, Air Quality was found to be cumulatively significant and unavoidable. While not quantitatively assessed, because the region is in non-attainment and air is periodically deemed unhealthy by the air district, even though project level health risk is not
</td></tr>
</table>

Comment ID	Response
	significant, its contribution combined with other cumulative projects would result in significant impacts, consistent with DEIR findings.
AB-40	**The comment claims that the DEIR did not address health risks to off-site workers during construction.** Please see the response to Comment AB-37.
AB-41	**The comment claims that construction mitigation is required because construction cancer risks exceed 10 in 1 million.** The DEIR shows that the construction cancer risks are not significant. Therefore, mitigation for this impact is not required.
AB-42	**The comment claims the Port did not provide native electronic versions of the emission calculation and modeling files.** Please see the response to Comment AB-22. **The comment also claims that the maximum residential cancer risk from project operation should be 3 in 1 million, not 6.973 in 1 million.** The cancer risk value of 6.973 in 1 million from project operation in the DEIR is correct. The comment is incorrect because it erroneously applied a DPM unit risk factor of 3.0E-4 $(\mu g/m^3)^{-1}$ to the annual DPM concentration to estimate risk. Please see the response to Comment AB-36. **The comment also claims that the DEIR underestimates health risks due to "errors, omissions, and unsupported adjustments".** Please see the responses to Comments AB-43 through AB-48 for detailed responses.
AB-43	**The comment claims that there are many inconsistencies between the operational DPM emissions reported in HRA Table 7,[25] HRA modeled,[26] and the supporting calculations.[27]** The operational DPM emissions modeled in the HRA are correct for the following reasons. First, the DPM emissions in HRA Table 7 are identical to the HRA-modeled emissions. The "inconsistencies" pointed out in the comment appear to be due to errors made by the commenter in converting the emissions from the AERMOD input file[28] back into pounds per year. From the AERMOD input file, the Port was unable to reproduce the "HRA-modeled" emissions presented by the commenter but was able to reproduce the HRA Table 7 emissions in the DEIR. Second, the HRA-modeled emissions are appropriately a subset of the supporting calculations. The AERMOD modeling domain extends about 1 mile east and southeast of the project site and 4 miles northwest of the project site, while the supporting calculations cover the entire San Joaquin Valley Air Basin. Emissions that would occur outside of the modeling domain were not modeled because they were determined by the Port through AERMOD test runs to not substantially affect the maximum predicted DPM concentrations near the project site. The sources that produce emissions partly outside of the modeling domain are truck transit, line haul locomotives, switcher locomotives, and OGV transit. Third, the commenter incorrectly used $PM_{2.5}$ instead of PM_{10} as DPM. The DEIR used PM_{10} as the basis for the risk calculations, in accordance with Appendix D of the OEHHA Risk Assessment Guidelines.[29]

[25] DEIR Table 7 of Appendix E.
[26] DEIR Appendix D2 of Appendix E (AERMOD input file).
[27] DEIR Appendix B of Appendix E.
[28] DEIR Appendix D2 of Appendix E.
[29] OEHHA 2015. Appendix D, Page D-1.

Comment ID	Response
	Although it was not possible to confirm, the commenter may have also made other errors in reconciling the supporting calculations to the HRA-modeled emissions, such as not accounting for the diurnal emission scalars in back-calculating the modeled pounds per year, and mixing up one-way trips with round trips. **The comment also claims that the modeled routes for switcher locomotives, line haul locomotives, and trucks were incorrectly placed to maximize the distance from sensitive receptors rather than the shortest routes that would be used in practice.** Please see the responses to Comments AB-45 and AB-47. **The comment also claims that the modeled switcher emissions are underestimated by factors of three to four.** Please see the response to Comment AB-44. **The comment also claims that the modeled hours of operation for switching and berthing were restricted to daytime hours when dispersion is highest, and thus ambient DPM concentrations are the lowest.** As stated in the DEIR, switcher locomotive emissions were modeled in AERMOD from 7:00 a.m. to 3:00 p.m. (hours 8 to 15 in AERMOD) to reflect CCT's actual operating schedule. Line haul locomotive emissions were modeled from 6:00 a.m. to 4:00 p.m. (hours 7 to 16 in AERMOD) to match the switcher schedule plus 1 hour on either end for train movement in and out of the Port. These hours were provided by the Port and confirmed as correct by Contanda. They represent the Port's best estimate of the expected actual operating hours of the sources associated with proposed project operation. To change these operating hours, Contanda would have to request additional services; however, this is not likely to occur because the current operating hours will accommodate the expected future number of rail cars.
AB-44	**The comment claims that the DEIR's HRA was based on DPM emissions from switcher locomotives of 54.7 pounds per year, compared to 161.3 pounds per year reported in DEIR Table 7, and 208.7 pounds per year reported in the supporting emission calculations.** The switcher locomotives were correctly modeled with DPM emissions of 161.3 pounds per year, as reported in Table 7 of Appendix E of the DEIR. The supporting calculations show total switching PM_{10} emissions (considered equivalent to DPM emissions) of 215.13 pounds per year.[30] However, the supporting calculations assume that one out of every four switching events associated with the Project would occur outside of the Port of Stockton, and therefore outside of the AERMOD modeling domain.[31] Therefore, the correct DPM emission rate for AERMOD is 215.13 x (3/4) = 161.3 pounds per year. The commenter's claim that the DEIR modeled switcher emissions of 54.7 pounds per year is incorrect. As stated in response to Comment AB-43, the Port believes the commenter made an error when converting the emissions from the AERMOD input file back into pounds per year. **The comment also claims that the switcher emissions that were modeled assume that 50% of the switcher locomotives are Tier 3 and 50% Tier 4.** This claim is speculative and incorrect, as it is based on an erroneous derivation of the modeled emissions made by the commenter. Please see the response to Comment AB-44 immediately preceding this response. As stated in the DEIR, the switcher DPM emission calculations assume 57% Tier 0 engines and 43% Tier 4 engines.[32]

[30] DEIR Appendix B of Appendix E, Table B-19.
[31] DEIR Appendix B of Appendix E, Table B-18.
[32] DEIR Appendix B of Appendix E, Table B-31.

Comment ID	Response
	The DEIR also claims that the switcher emissions in the HRA should be based on the worst case, which would be 100% Tier 0 engines. The switcher fleet mix assumed for future Project conditions is the same as the current fleet mix, which is a reasonable worst-case assumption for future conditions. It is not reasonable to assume 100% Tier 0 engines because this would mean CCT would have to replace cleaner engines with dirtier engines in the future. **The DEIR also claims that the Port switcher fleet should be restricted such that higher tier engines that would otherwise service the Project are not shifted to another Port client.** CCT does not dedicate specific switching locomotives to any particular tenant. Therefore, it is reasonable to assume that the entire switcher fleet mix is representative of long-term proposed project emissions.
AB-45	**The comment claims that the DEIR did not demonstrate that modeling all switcher locomotive emissions on-site is conservative because the switchers would actually operate throughout the Port of Stockton.** The switchers that operate for the proposed project move along the route modeled in AERMOD and shown in the DEIR, Figure 3 of Appendix E. There is a statement on Page 3 of DEIR Appendix E that says, "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." To clarify, this statement meant that the switcher emissions that occur throughout the Port of Stockton, which, in the case of the proposed project, occur along the modeled route in Figure 3, were conservatively treated as on-site emissions, for the purposes of determining significance of average daily operational emissions. **The comment also claims that the DEIR shifted switcher emissions to the south and west, away from homes.** The modeled routes for switcher locomotives were provided by the Port and confirmed as correct by Contanda.
AB-46	**The comment claims that the DEIR provides no justification for modeling switcher emissions from 7:00 AM to 3:00 PM and line haul locomotives from 6:00 AM to 4:00 PM.** Please see the response to Comment AB-43. **The comment also claims that there is nothing in the DEIR that restricts switching and line haul operations to the modeled hours; therefore, switcher and line haul emissions should be modeled 24 hours per day.** The CEQA analysis examines the most likely scenario to occur under future proposed project conditions, based on the Port's best professional assessment of operating practices and regulatory restrictions. The Port has no reason to expect that future switching hours would differ from CCT's current hours. Please see the response to Comment AB-43 (last response for that comment).
AB-47	**The comment claims that the DEIR adjusted the location of roads and rail tracks to avoid residential areas when shorter routes, closer to residential areas would be used in practice.** The modeled routes for line haul locomotives and trucks in Figure 3 of Appendix E were provided by the Port and confirmed as correct by Contanda.

Comment ID	Response
	The comment claims that the DEIR assumed that DPM emissions would not occur along roads and tracks that are adjacent to residential areas but fails to include enforceable conditions to prohibit the use of these nearby routes. The modeled routes for locomotives and trucks in the DEIR, Figure 3 of Appendix E were provided by the Port and confirmed as correct by Contanda.
AB-48	**The comment claims that, based on the commenter's own HRA, the residential cancer risk associated with the proposed project is 27.7 in 1 million.** The commenter's HRA assumes switcher DPM emissions of 208.7 pounds per year, switcher emissions that occur around the clock, and switcher and truck routes adjacent to residential areas. All three of these assumptions are incorrect; therefore, the commenter's HRA does not reflect the proposed project and is invalid. Please see the response to Comment AB-44 for a discussion of switcher DPM emissions, response to Comment AB-43 for a discussion of switcher operating hours, and responses to Comments AB-45 and AB-47 for discussions of switcher and truck routes. **The comment also claims that a revised DEIR should be prepared that includes an updated worker HRA.** Please see the response to Comment AB-37. A revised HRA is not necessary because the assumptions and emissions in the current HRA are correct.
AB-49	**The comment claims that a hazard index is not a "probability" but rather the ratio of the modeled 1-hour concentration to the REL.** Comment noted. **The comment also claims that Canada recently established an acute REL for DPM, which should be used in the absence of an OEHHA REL.** As lead agency, the Port chose to prepare the HRA in accordance with the 2015 OEHHA Risk Assessment Guidelines, which are widely used and accepted by CEQA practitioners in California. As stated in the DEIR, in accordance with OEHHA guidelines, no unusual situations were identified for the proposed project which would warrant an acute HI analysis.[33,34] As a result, the proposed project's impact with respect to the acute hazard index would be less than significant. This conclusion is reinforced by other, similar projects. For example, a recent certified EIR for a project with similar diesel sources prepared the Port of Los Angeles. The 2017 Everport Container Terminal EIR[35] evaluated similar diesel-fueled sources to the proposed Contanda Project (OGVs, tugboats, trucks, locomotives, cargo handling equipment, and construction equipment) and used the same 2015 OEHHA Risk Assessment Guidelines. Because of the Everport project's relatively large quantity of DPM emissions (an "unusual situation"), much greater than that of the Contanda project, the Port of Los Angeles elected to speciate DPM into its toxic components and calculate the acute hazard index along with cancer risk and the chronic hazard index. The Everport HRA predicted absolute cancer risks from the Project (i.e., before subtracting baseline) ranging from 22 to 59 in 1 million. However, the predicted acute hazard indices were small, ranging from 0.11 to 0.27.[36] The Everport results show that, for DPM sources, cancer risk is the dominant health effect and the acute hazard index is small by comparison.

[33] DEIR Appendix E, Page 6.
[34] OEHHA 2015. Appendix D, Page D-3.
[35] Port of Los Angeles, 2017. *Berths 226-236 [Everport] Container Terminal Improvements Project Draft EIS/EIR*. April 2017. Available at: https://www.portoflosangeles.org/environment/environmental-documents.
[36] Port of Los Angeles 2017. Appendix B3, Table B3-5.

Comment ID	Response
AB-50	**The comment claims that the commenter conducted an acute risk assessment for Project construction and found DPM concentrations exceeding the Canadian REL near the Project site.** Please refer to the response to Comment AB-49. The HRA was conducted in accordance with the 2015 OEHHA Risk Assessment Guidelines, not Canadian guidelines. Moreover, the Port does not have the files necessary to check whether the commenter's HRA was done correctly.
AB-51	**The comment claims that the commenter conducted an acute risk assessment for Project operation and found DPM concentrations exceeding the Canadian REL in residential neighborhoods, commercial areas, and Washington Elementary School.** Please refer to the response to Comment AB-49. The HRA was conducted in accordance with the 2015 OEHHA Risk Assessment Guidelines, not Canadian guidelines. Moreover, the Port does not have the files necessary to check whether the commenter's HRA was done correctly. However, the maximum 1-hour DPM concentrations reported by the commenter in Figure 14 of the comment letter suggest that the commenter made an error in the dispersion modeling. For example, the commenter predicted a maximum 1-hour concentration of 228 $\mu g/m^3$ at a receptor that is reasonably close to the maximum residential receptor where the DEIR predicted an annual average concentration of 0.0102 $\mu g/m^3$. In other words, the commenter predicted a maximum 1-hour concentration approximately 22,000 times higher than the annual average concentration. Even if the 1-hour concentrations were zero for every hour of the year except the 1 hour when the concentration is 228 $\mu g/m^3$, this would still produce an annual average concentration of 0.026 $\mu g/m^3$, nearly triple the modeled annual average concentration. This suggests that the commenter has substantially and erroneously overpredicted the 1-hour concentrations.
AB-52	Responses to this summary comment are provided in responses to Comments AB-35 through AB-51.

3 Modifications to the DEIR

This section of the FEIR documents changes and additions to the DEIR that have been made to clarify, correct, or add to the information provided in that document. Text and table changes presented below are incorporated into the FEIR. Deleted text is marked as ~~strikeout~~ and new text is marked as <u>underlined</u>.

3.1 California Environmental Quality Act Guidelines 2018 Update

On December 28, 2018, the California Natural Resources Agency approved a comprehensive update to the CEQA Guidelines. The 2018 CEQA Guideline Update provide direction on numerous issues, including streamlining, tiering, complex environmental document preparation, and climate change. Updated exemptions have been included for transit-centered residential and mixed-use development, along with clarifications to CEQA exemptions for existing facilities and emergencies. The revisions elaborate on the ideas of tiering, streamlining, and baseline conditions. Changes were also made to implement Senate Bill 743 traffic impact analysis, including guidance on Vehicle Miles Traveled screening thresholds, mitigation, and reduction. The new CEQA Guidelines also includes changes to the Appendix G checklist, including two new sections on Energy and Wildfire, the consolidation of several checklist questions for clarity, and edits to other checklist questions to be consistent with recent case law.

Pursuant to Section 15007 of the CEQA Guidelines, these changes to the Guidelines apply only prospectively. However, per guidance released by the Natural Resources Agency, "[p]ublic agencies shall comply with new requirements in amendments to the Guidelines beginning with the earlier of …. [t]he effective date of the agency's procedures amended to conform to the new Guideline amendments; or [t]he 120th day after the effective date of the Guideline amendments." Therefore, the FEIR incorporates the new changes. Appendix A presents a summary of how the DEIR complies with the 2018 updates. There were no changes to findings as a result of the 2018 CEQA Guideline Update.

2.4 Modifications Based on Public Comment

The changes and additions listed in this section are a result of public and agency comments received in response to the DEIR and/or new information that has become available since publication of the DEIR. Any revisions to supporting documentation, such as the references, list of preparers, acronyms and abbreviations, and appendices are also presented. The numbering format from the DEIR is maintained in the sections presented here.

2.5 DEIR Modifications

2.5.1 Section 1: Introduction and Project Purpose

Section 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.
- **Utilities:** The facility's secondary containment system would be in compliance with USEPA SPCC regulations for secondary containment for biodiesel (oil) ASTs. 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. 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.

2.5.2 Section 3.1: Air Quality

Section 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 and truck traffic associated with

development projects, are addressed through SJVAPCD's air quality plans, which are each air quality district's contribution to the SIP. As discussed in Sections 3.1.2.1.1 and 3.1.2.2.1, in federal nonattainment areas, the CAA requires preparation of a 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. Because transportation is often such a large portion of an air basin's emissions, the SIP and the AQMP inherently include transportation planning and reflect inter-basin transportation levels. The SIP and AQMP are then used to inform state and local rules and standards.

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. Because the CEQA thresholds represent localized standards to obtain SIP and AQMP goal, the thresholds are informed, in part, by inter-basin transport studies.

Section 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 shall ~~will~~ require trucks to minimize idling time to 2 minutes while on terminal. Idling restrictions would reduce on-terminal emissions by eliminating unnecessary combustion. Truckers would be required to shut down trucks while waiting longer than 2 minutes while on the terminal or Contanda would implement programs, such as appointment systems in periods of congestion, to ensure trucks move efficiently through the 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 with customers.

Residual Impacts: As shown in Tables 13 and 14, the proposed project's operational emissions are mainly the result of vessel truck and locomotives emissions. CARB's Airborne Toxic Control Measure limits truck idling to 5 minutes. MM-AQ-1 goes above and beyond existing regulatory requirement by requiring limits of 2 minutes. However, MM-AQ-a is not quantified in the analysis, as implementation will be based on actual truck visits and the proposed project does not take credit for this mitigation. In addition, 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. MM-AQ-2 is not quantified in the analysis and the proposed project does not take credit for this mitigation. 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.

2.5.3 Section 3.2: Cultural Resources

Section 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. Therefore, there is a low risk of finding 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: <u>While there is a low risk of finding archeological resources, the following measure would be added to construction specifications for the proposed project</u>:

- ~~**Project Condition**~~ <u>**MM-**</u>**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.

Residual Impact: Less-than-significant impact.

2.5.4 Section 3.4: Geology and Soils

Section 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, prepared to inform project construction, 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). Construction design plans will therefore incorporate design elements from the 2016 California Building Code and American Society of Civil Engineers to address these findings. ~~T To ensure adverse effects from tank settlement are avoided, the following measure 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, and 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: While impacts are less than significant, consistent with the geotechnical report recommendations regarding seismic induced settlement, the following measure would be added to construction specifications for the proposed project:

- **MM_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.
- **MM-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.

Residual Impact: Less-than-significant impact.

2.5.5 Section 4: Cumulative Impacts

Section 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.

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

- **MM-AQ-1: Truck Idling Reductions.**
- **MM-AQ-2: Use of Clean Trucks.**

Residual Impacts: As shown in Tables 13 and 14, the proposed project's operational emissions are mainly the result of vessel truck and locomotives emissions. CARB's Airborne Toxic Control Measure limits truck idling to 5 minutes. MM-AQ-1 goes above and beyond existing regulatory requirement by requiring limits of 2 minutes. However, MM-AQ-1 is not quantified in the analysis because implementation will be based on actual truck visits and the proposed project does not take credit for this mitigation. In addition, 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. MM-AQ-2 is not quantified in the analysis and the proposed project does not take credit for this mitigation. Therefore, impacts are considered significant.

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.

2.5.6 Appendix E: Air Quality and Greenhouse Gas Study

Section 3: Health Risk Assessment

Impacts to off-site worker receptors are as follows:

Receptor Type	Construction/ Operation	Annual Average DPM Concentration (µg/m^3)	UTM Location (m)	Cancer Risk
Worker	Construction	6.50E-01	647370, 4201245	1.61E-06
Worker	Operation	8.54E-02	647050, 4201400	5.07E-06
			Total Risk	**6.68E-06 6.7 in 1 million**
			Significance Threshold	20 in 1 million
			Significant?	No

Appendix A
2018 CEQA Guidelines Update

1 Introduction

The State of California recently released revised California Environmental Quality Act (CEQA) Guidelines, and the Natural Resources Agency adopted final text, which was approved by the Office of Administrative Law and filed with the Secretary of State on December 28, 2018. The 2018 CEQA Guideline Update provides direction on numerous issues, including streamlining, tiering, complex environmental document preparation, and climate change. Updated exemptions have been included for transit-centered residential and mixed-use development, along with clarifications to CEQA exemptions for existing facilities and emergencies. The revisions elaborate on the ideas of tiering, streamlining, and baseline conditions. Changes were also made to implement Senate Bill 743 traffic impact analysis, including guidance on Vehicle Miles Traveled (VMT) screening thresholds, mitigation, and reduction. The new CEQA Guidelines also include changes to the Appendix G checklist, including two new sections on Energy and Wildfire, the consolidation of several checklist questions for clarity, and edits to other checklist questions to be consistent with recent case law.

This document presents an analysis of how the Draft Environmental Impact Report's (DEIR's) analysis of the Contanda Renewable Diesel Bulk Liquid Terminal Development Project (proposed project) (January 2019) is consistent with the 2018 CEQA Guidelines Update, confirming that the new Guidelines do not alter the impacts analysis in the DEIR. Because the DEIR used Appendix G, Environmental Checklist Form, of the State CEQA Guidelines as the basis of analysis, this document presents the changes to Appendix G in underline to denote new text and ~~strikeout~~ to denote text deletions and then considers whether findings remain the same as presented in the DEIR.

1.1 CEQA Appendix G Checklist

1.1.1 Aesthetics

1.1.1.1 Text Changes

c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? ~~Substantially degrade the existing visual character or quality of the site and its surroundings~~

1.1.1.2 Analysis

The change to text including public views and urban zoning does not change the findings. The visual character of the study area or quality of public views of the site and its surroundings 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. As discussed in the Section 1.4 of the DEIR, The City of Stockton's (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. Therefore, the DEIR findings are consistent with the 2018 CEQA Guidelines Update

1.1.2 Air Quality

1.1.2.1 Text Changes

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~~

b. ~~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)~~?

c. ~~d.~~ Expose sensitive receptors to substantial pollutant concentrations?

d. ~~e.~~ Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? ~~Create objectionable odors affecting a substantial number of people?~~

1.1.2.2 Analysis

The text changes in the air quality section are largely a consolidation and clarification. The DEIR includes a full analysis of consistency with air quality plans and there are no additional emissions beyond odors (which were analyzed in the DEIR) that would result from the proposed project. Therefore, the DEIR findings are consistent with the 2018 CEQA Guidelines Update.

1.1.3 Biological Resources

1.1.3.1 Text Changes

b. Have a substantial adverse effect on state or 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?

1.1.3.2 Analysis

As described in the DEIR, the proposed project will not affect any state or federal wetlands including, but not limited to, marshes, vernal pools, coastal wetlands, etc. Therefore, the text changes do not change the analysis and the DEIR findings are consistent with the 2018 CEQA Guidelines Update.

1.1.4 Cultural Resources

1.1.4.1 Text Changes

a. Would the project cause a substantial adverse change in the significance of a historical resource ~~as defined in~~ pursuant to Section 15064.5?

~~c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?~~

1.1.4.2 Analysis

The text changes were made for consistency ("pursuant to" is used throughout the document) and removed a question, which is also included in another section, for streamlining purposes. Therefore, the DEIR findings are consistent with the 2018 CEQA Guidelines Update

1.1.5 Energy

1.1.5.1 Text Changes

a: Would the project result in a potentially significant environmental impact due to wasteful, inefficient or unnecessary consumption of energy resources during project construction or operation?

b: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

1.1.5.2 Analysis

The 2018 CEQA Guidelines were revised to include Energy as a separate category of analysis under Appendix G. However, CEQA Appendix F and a series of court decisions already clearly required analysis of energy impacts (For example, see *California Clean Energy Committee v. City of Woodland* [2014] 225 Cal.App.4th 173). Therefore, the updated Guidelines simply memorialize the existing state of the law. Accordingly, the two questions were addressed in other sections of the DEIR, namely Section 3.5 Greenhouse Gas Emissions, which analyzed consistency with the regional climate action plan, and Section 5.2 Significant Irreversible Changes, which addresses project consumption of electricity and other energy. The proposed project would not waste or unnecessarily consume energy. As discussed in the DEIR, the proposed project will facilitate implementation of the state's Low Carbon Fuel Standard (LCFS) by providing storage of domestically sourced renewable diesel for

distribution in the Northern California market. Therefore, the DEIR findings are consistent with the 2018 CEQA Guidelines Update.

1.1.6 Geological Resources

1.1.6.1 Text Changes

A: Would the project ~~expose people or structures to~~ directly or indirectly 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?

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

1.1.6.2 Analysis

These changes clarify that risks from geological hazards are unique in that there may be direct and indirect impacts from earthquakes and other geological land movements. However, as discussed in the DEIR, 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. Therefore, the DEIR findings are consistent with the 2018 CEQA Guidelines Update.

1.1.7 Hazards and Hazardous Materials

e. 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 or excessive noise 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: Would the project expose people or structures, either directly or indirectly 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?

1.1.7.1 Analysis

The text changes add excessive noise to consideration if a project is within an airport land use plan area, removes redundant text for streamlining and expands the analysis of wildfire risk to include direct and impacts. However, as discussed in the DEIR, the proposed project is not located within an

airport land use plan area or in or adjacent to wildlands. Therefore, the changes are not applicable to the proposed project and the DEIR findings are consistent with the 2018 CEQA Guidelines Update.

1.1.8 Hydrology and Water Quality

1.1.8.1 Text Changes

a: Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

b. Would the project substantially decrease ~~plete~~ groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? ~~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 or through the addition of impervious surfaces, in a manner that would: ~~result in substantial erosion or siltation onsite or offsite~~

i. Result in substantial erosion or siltation onsite or offsite? ~~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?~~

ii. Substantially increase the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite? ~~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~~?

iii. 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?

v. Impede or redirect flood flows?

d. In flood hazard tsunami, or seiche zones, risk release of pollutants due to project inundation? ~~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?~~

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? ~~Place within a 100-year flood hazard area structures that would impede or redirect flood flows?~~

~~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?~~

~~Contribute to inundation by seiche, tsunami, or mudflow?~~

1.1.8.2 Analysis

As discussed in the DEIR, the facility will operate with active and passive spill control measures, including secondary containment and regular system inspections. In addition, Contanda has an Spill Prevention Control and Countermeasure Plan (SPCC) plan for the facility. Spill responses are also addressed in the facility's Crisis Management Plan (CMP), which incorporates its Emergency Action Plan (required by the California Division of Occupational Safety and Health [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. 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 of Stockton (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. 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, best management practices (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, and the DEIR findings are consistent with the 2018 CEQA Guidelines Update.

1.1.9 Land Use and Planning

1.1.9.1 Text Changes

<u>b. Cause a significant environmental impact due to</u> Conflict with <u>conflict with a</u>ny 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?~~

1.1.9.2 Analysis

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.

1.1.10 Noise

1.1.10.1 Text Changes

a. Generation of a substantial temporary or permanent increase in ambient ~~Expose persons to or generate~~ noise levels in the vicinity of the project 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~~ Generation of 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?~~

c. ~~e.~~ Be located within the vicinity of a private airstrip or 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?~~

1.1.10.2 Analysis

Text changes in the Noise Section were largely consolidation of repetitive questions. Therefore, the DEIR findings are consistent with the 2018 CEQA Guidelines Update.

1.1.11 Population and Housing

1.1.11.1 Text Changes

a. Induce substantial unplanned 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 people or housing units, necessitating the construction of replacement housing elsewhere?

~~c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere~~

1.1.11.2 Analysis

As discussed in the DEIR, the proposed project will not affect planned or unplanned population growth, or displace people or housing units. Therefore, the DEIR findings are consistent with the 2018 CEQA Guidelines Update.

1.1.12 Traffic and Transportation

1.1.12.1 Text Changes

a. Conflict with a program ~~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 transi~~t addressing the circulation system including transit, roadway, bicycle and pedestrian facilities?

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~~ or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b).

~~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 risk~~

c. ~~d~~. Substantially increase hazards because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

d. ~~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?~~

1.1.12.2 Analysis

Traffic and Transportation represents one of the biggest areas of change to the CEQA Guidelines in order to implement Senate Bill (SB) 743, Section 15064.3(b), which describes specific considerations for evaluating a project's transportation impacts and requires the use of VMT instead of Level of

Service (LOS) to measure transportation impacts. Under the updated Guidelines, the CEQA analysis must consider the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. However, because transportation planning is done on a regional level, lead agencies will have a grace period until July 1, 2020, before the VMT metric for analyzing transportation impacts becomes mandatory on a statewide basis. As discussed in the DEIR, truck trips would increase as a result of the proposed project, but at levels less than currently required by the San Joaquin Council of Governments (SJCOG) to perform a traffic analysis. SJCOG is forming a SB 743 Technical Working Group to discuss topics including but not limited to: 1) shifting from LOS to VMT in local agency and SJCOG CEQA analysis; and 2) adapting related SJCOG programs such as the Regional Congestion Management Program (RCMP) and Regional Transportation Impact Fee (RTIF), if necessary. The Working Group will report on progress and deliverables to the SJCOG Technical Advisory Committee throughout 2018. Because SJCOG has not yet updated its guidelines, no new analysis is required.

1.1.13 Utilities

1.1.13.1 Text Changes

~~a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?~~

a.~~ b.~~ Require or result in the relocation or construction of new or expanded water~~ or~~, wastewater treatment facilities, stormwater drainage, electrical power, natural gas or telecommunications facilities ~~or expansion of existing facilities~~, the construction or relocation 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?~~

b.~~ d.~~ Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? ~~from existing entitlements and resources, or would new or expanded entitlements be needed?~~

c.~~ 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

d.~~ f.~~Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals? ~~Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?~~

e. ~~g~~ Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

1.1.13.2 Analysis

As noted in the DEIR, the proposed project would not generate solid waste or wastewater in excess of local standards. 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, and the DEIR findings are consistent with the 2018 CEQA Guidelines Update.

1.1.14 Wildfire

1.1.14.1 Text Changes

a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

b. Would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d. Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

1.1.14.2 Analysis

Wildfire is a new section under the 2018 CEQA Guidelines update and has been included to identify a proposed project's potential to increase the risk of wildfires or impede an emergency response plan. While this section is new, these issues were addressed in the DEIR. As discussed in Section 3.6 of the DEIR, Contanda would maintain and implement as needed a CMP 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. Furthermore, safety and environmental control measures are integrated into the facility's design and operation. 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 Union Pacific Railroad and BNSF Railway have developed emergency response plans as part of their hazardous material management programs. Additionally, 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. These plans ensure the proposed project is cognizant of regional emergency planning and risks are minimized on site in case of an accident that could spark a fire. In addition, 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. Therefore, there are no impacts related to Wildfire.