INTER OFFICE MEMORANDUM

CITY OF OAKLAND

TO: Edward D. Reiskin
City Administrator

FROM: William Gilchrist
Director, Planning & Building

SUBJECT: Air Quality Plan for Operations of the Custom Goods Facility, 2001 Maritime Street, Suite 100 at the former Oakland Army Base

DATE: January 23, 2023

City Administrator Approval

Date Jan 25, 2023

RECOMMENDATION

Approve the operations-related Air Quality Plan version dated November 4, 2022, for the Custom Goods facility to be located at 2001 Maritime Street, Suite 100 in the New Central Gateway area of the former Oakland Army Base (OAB) in the City of Oakland (City).

EXECUTIVE SUMMARY

Prologis Mesquite LLC (Prologis), one of the developers of the OAB redevelopment project, in association with its sublessee, Custom Goods, has prepared an Air Quality Plan to reduce air quality impacts during operation of the Custom Goods facility that will be located at 2001 Maritime Street on the New Central Gateway parcel of the former OAB. The mitigation measures for the OAB redevelopment project require City Administrator approval of the Air Quality Plan.

BACKGROUND

The Standard Conditions of Approval/Mitigation Monitoring and Reporting Program (SCA/MMRP) identified in the 2012 Initial Study/Addendum for the OAB redevelopment project contains mitigation measures for reducing the potential environmental impacts of the redevelopment project, including requirements for the preparation and implementation of the following plans and strategies to reduce impacts related to air quality and trucking:

- Construction Management Plan (SCA AIR-1)
- Construction-Related Air Pollution Controls (SCA AIR-2)
- Truck Management Plan (Mitigation 4.3-7)
- Maritime and Rail-Related Emissions Reduction Plan (Mitigation 4.4-3b)
- Truck Diesel Emission Reduction Plan (Mitigation 4.4-4)
- Transportation Control Measures (Mitigation 4.4-5)

- Energy-Conserving Fixtures and Designs (Mitigation 4.4-6)
- Demonstration Projects (Mitigation 5.4-1)
- Parking and Transportation Demand Management (SCA TRANS-1)
- Construction Traffic and Parking (SCA TRANS-2)
- Traffic Control Plan – Hazardous Materials (Mitigation 4.3-13)

Mitigation Measure PO-1 (Stakeholder Review of Air Quality Plan and Trucking Plan) requires the City to conduct a public process in the development and review of the air quality and trucking components of these mitigation measures and requires City Administrator approval of these plans.

In 2013, 2016 and 2017, the City Administrator approved plans to comply with air quality mitigation measures for construction of the public infrastructure and for construction of various private improvements at the OAB, including construction of the Custom Goods facility at the 2001 Maritime Street site. The subject of this memorandum and of the submitted Air Quality Plan is for the Custom Goods operations rather than construction.

The Air Quality Plan for Custom Goods is the fourth operational plan that has been submitted for the new development at the OAB. In May 2018, the City Administrator approved an air quality plan for operations of the first new warehouse at the OAB, located at 55 Admiral Toney Way, occupied by the company called PODS (personal storage on demand). In December 2018, the City Administrator approved an air quality plan for operations of a shipping container storage/repair facility operated by ConGlobal and in September 2019, the City Administrator approved an air quality plan for a prepared foods distribution facility operated by Good Eggs.

CONTENT OF THIS AIR QUALITY PLAN AND SUMMARY OF THE PUBLIC INPUT PROCESS

The tenant, Custom Goods, would operate the site as a U.S. Customs and Border Protection (CBP) Centralized Examination Station (CES). Custom Goods specializes in the operation of secure cargo inspection facilities where import/export goods are examined and cleared for transport. In general, a cargo inspection facility is designed to promote safe and efficient inspections and operational support tasks by CBP officers. The overall function of the facility includes the following objectives:

- Maintain physical security standards;
- Enable rapid devanning of cargo at a CES;
- Enable secure storage and movement of cargo at a CES;
- Provide easily accessible cargo for CBP examination;
- Provide easily accessible containerized cargo reload.

Tenant improvements inside the 2001 Maritime Street building would include roughly 3,000 square feet of administrative offices, 11,000 square feet of secure U.S. Customs offices with accessory inspection areas, and approximately 40,000 square feet of cold dock and refrigerated space for cold chain inspections. The remainder of space would be used as dry cargo hold or inspection areas.

The CBP inspection and processing areas are physically secure to prevent unauthorized access. The processing area includes spaces for canine inspections, x-ray screening, and agricultural examinations. During canine inspections, dogs screen the containers. The x-ray screening is conducted by non-intrusive inspection (NII) units. Processing areas generally require unreleased cargo detention areas for safe, secure, temporary cargo detainment.

There would be +/-40 active dock positions where goods are inbound and outbound. Reefer plugs would be provided at 50 trailer positions and at all refrigerated dock doors.

Custom Goods expects that truck traffic would be both Port of Oakland (Port) drayage and over-the-road transportation to other destinations. Approximately 115 trucks are expected to visit the site daily, with up to an estimated 70 drayage trucks inbound from the Port, and an estimated average of 45 over-the-road trucks that would carry outbound product. Truck visits are expected to the site up to 5 days per week.

Products being inspected/held would be moved around by the following material handling equipment (at start of operations):

- Ten 6,000 lb. electric fork trucks;
- Two 12,000 lb. electric fork trucks;
- One high-capacity electric forklift;
- Two diesel yard hostlers (to be converted to electric by 2024).

The entire Custom Goods off-road fleet would be converted to zero-emissions electric equipment between the end of 2023 to mid-2024, depending on equipment availability. This includes replacing both of the diesel yard hostlers with electric equipment. Custom Goods has initiated orders to convert both diesel units to electric equipment. In the interim, the diesel yard hostlers would be utilized on-site, along with the electric equipment outlined above, including fork trucks and forklifts.

The tenant, Custom Goods, would employ less than 40 employees at this facility. In addition, CBP employees, who are federal employees, would access the site in two shifts. The first CBP shift would be 40 to 60 individuals, and the second shift would be an estimated 30 to 40 individuals. Parking would be fully accommodated on-site, as the current site is striped for 139 auto parking spaces.

On April 5, 2021, the City released a 45-day Notice of Preparation of the draft Air Quality Plan to the official stakeholder list per Mitigation Measure PO-1. On May 18, 2021, Prologis submitted its first draft of this Air Quality Plan to the City. The intent of this Notice of Preparation is to provide advance notice before the Plan is released for an official 17-day public review period.

On May 26, 2021, the City held a quarterly meeting attended by air quality stakeholders, including community-based organizations, community residents, and interested government air quality agencies. Prologis and Custom Goods made a presentation, including a detailed description of Custom Goods' operations, presented the components of the Air Quality Plan (March 18, 2021 draft version), and described how such components were based on the list of emission reduction actions developed by the staff of the Bay Area Air Quality Management District (BAAQMD) to the extent applicable. The specific diesel emission reduction actions contained in the draft Air Quality Plan were presented and discussed, so as to provide information and input prior to release of the draft Air Quality Plan for the official 17-day public review period.

Prologis revised the draft Air Quality Plan following input from the Stakeholder meeting and submitted a revised draft Air Quality Plan on June 24, 2021 (see ***Attachment A)***.

On June 25, 2021, the draft Air Quality Plan shown in Attachment A was released to stakeholders for the official 17-day public review period public as required by Mitigation Measure PO-1. The City received comments from BAAQMD and California Air Resources Board (CARB), (see ***Attachment B***). The comments are summarized and discussed in the "Key Issues" section below.

Following the end of the public review period, City staff met with Prologis to discuss enhancements to the draft Air Quality Plan to address the comments from the air quality agencies. In response to these comments, Prologis revised the Plan. The latest version of the Air Quality Plan, dated November 4, 2022, is attached (see ***Attachment C***) along with City staff responses to the public comments on the previous version of the draft Air Quality Plan (see ***Attachment D***).

KEY ISSUES

The purpose of this Air Quality Plan is to reduce diesel emissions during operations of the Custom Goods facility. Emissions during these operations are generated from diesel trucks transporting import/export goods to and from the site and from the forklifts and other off-road equipment used to transport and store these products.

Public comments received on the draft Air Quality Plan are summarized below. Also, refer to the responses to public comment letters prepared by City staff (see ***Attachment D***), which contain detailed response to the public comments.

- <u>Require that Custom Goods include contractual language in tenant lease agreements that requires all trucks accessing the Project site to be completely electric starting no later than 2023</u>: Custom Goods does not propose tenant leasing.

- Require that trucks and onsite equipment be completely zero emission: Custom Goods has agreed to use a high-capacity electric forklift instead of the 35,000lb. capacity diesel forklift previously proposed. In addition, Custom Goods is currently converting on-site equipment to all electric, including yard hostlers, with newer sealed battery technology, which conversion will be completed. Custom Goods has initiated orders on this equipment. Estimated time for full conversion is end of 2023 to mid-2024, which could shift depending on the state of global supply chains and final delivery timeframes from the manufacturers. Ultimately, all on site equipment will be zero emission. These agreements are included in the revised Air Quality Plan.

- Include a table summarizing the cumulative air pollution emissions from the former OAB: A table describing cumulative emissions from the OAB prepared by Dave Mitchell dated October 25, 2021, is added as Attachment B to the Air Quality Plan.

- Require Technology review every two years: The Air Quality Plan requires a technology review on a three-year schedule. All of the existing tenants at the Gateway Industrial District at the former OAB are required to complete a technology review every three years, and it would not be appropriate or equitable to require a different timeline from Custom Goods.

- Limit transport refrigeration units (TRU) idling duration to less than one hour: The Air Quality Plan is revised to restrict idling of TRUs that are not plug-in capable to one-hour, and require that Custom Goods establish on-site enforcement, including but not limited to, monitoring by designated personnel and posting signs near the site entrance and truck parking areas.

- Unless the City prohibits TRUs with a power rating of less than 25 hp from accessing the Project site, the air quality analysis should be revised: As requested, the analysis was revised to reflect percentages of TRUs less than 25 hp and over 25 hp using the CARB 2021 TRU Emission Inventory and based the types of TRUs most likely to be used at the project site.

- City should base the air quality analysis on project-specific trip distances: The revised analysis used the CalEEMod trip lengths for Alameda County, which are 9.5 miles for Commercial-work (C-W) and 7.3 miles for commercial-non work (C-NW) trips. The 2012 Addendum estimated truck emissions based on 20 minutes of travel at an average speed of 15 MPH which results in a trip length of 4.5 miles. The use of the 9.5/7.3-mile trip length is more conservative than the trip length used in the 2012 Addendum and is appropriate for determining consistency with the EIR.

- Require at a minimum of 28 percent of all TRUs visiting the Projects site to plug-in while loading or unloading goods at the Project site: The Revised Air Quality Plan requires that Custom Goods establish a monitoring program that will track the number of trucks equipped with TRU's that are not plug-in capable and demonstrate that a minimum 28% of the total truck/trailers equipped with TRU's are plug-in capable.

- Extend stakeholder review and comment period of Air Quality Plan: The 45-day stakeholder review period is intended to give stakeholders advance notice that an Air Quality Plan is being prepared and will be available for public review. At the end of the 45-day notice, or shortly thereafter, the draft Air Quality Plan is then released for 17-day review and comment period. This 17-day review period is consistent with the required mitigation measure, prior air quality plans for the OAB, and many other public review and comment processes in the City, with City policy to establish the same duration for public review and comment across City departments.

- Include an aggressive schedule to transition the tenant's diesel Tier 4 interim and Tier 4 fleet to zero-emissions equipment and vehicles: Custom Goods has agreed to dis-continue use of its 35,000lb. capacity diesel forklift. In addition, Custom Goods is currently converting on-site equipment to all electric with newer sealed battery technology by mid-2024, which could shift depending on the state of global supply chains and final delivery timeframes from the manufacturers. These commitments are included in the revised Air Quality Plan.

- Require that all trucks entering the OAB property meet 2010 diesel emission standards immediately (i.e., ahead of regulatory deadlines) and all TRU-equipped trucks be electric: Custom Goods does not have its own fleet of trucks and is unable to regulate the third-party trucking companies and independent operators that will come to the site. The Air Quality Plan requires that all diesel trucks coming to the site will meet current laws and regulation. Additionally, TRU requirements regarding idling time and monitoring are added to the revised Air Quality Plan.

CONCLUSION

The stakeholder review requirements for the proposed Air Quality Plan have been satisfied and the Air Quality Plan has been revised in response to comments received from the City, the public and agencies. Staff recommends that the City Administrator approve the Plan.

Pursuant to Mitigation Measure PO-1 (Stakeholder Review of Air Quality and Trucking Plans), following the City Administrator's approval of the Air Quality Plan staff will prepare an informational presentation to the City Council about the Air Quality Plan.

Please contact Corey Alvin, Environmental Coordinator for the OAB, at (510) 238-6316 if you have any questions.

William A. Gilchrist

WILLIAM GILCHRIST
Director, Planning and Building Department

Reviewed by:
Ed Manasse
Deputy Director, Bureau of Planning

Prepared by:
Corey Alvin
Bureau of Planning

Attachments

A. *Draft Air Quality Plan for Operations of the Custom Goods Facility, prepared by Prologis, dated June 24, 2021*
B. *Public Comment Letters Received in Response to Draft Air Quality Plan for the Custom Goods Facility (commenting on the plan version dated June 24, 2021)*
C. *Air Quality Plan Operations of the Custom Goods Facility (November 9, 2022)*
D. *City response to public comment letters (September 19, 2022)*

ATTACHMENT A

Prologis Oakland Global Logistics Center

Air Quality Plan for Operations of Custom Goods

Prepared For:
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Planning & Building Dept.
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Oakland, CA 94612

Prepared By:
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Site Ref: CC-1, New Central Gateway Parcel

Submitted On:
v.0 – May 18, 2021
v.1 – June 24, 2021

Table of Contents

1. INTRODUCTION

Prologis is the leading global owner, operator, and developer of logistics real estate. We serve manufacturers, retailers, e-commerce businesses, transportation companies, and logistics providers with the facilities that support local, regional and global trade. Our buildings are located close to transportation infrastructure such as railways, seaports, highways, and airports. We provide our customers with best-in-class facilities and have a long history of industry-leading corporate governance and transparency.

As the ground lessee of 58 acres of the City's former Oakland Army Base site (OAB) property for the next 66 years, we intend to be good stewards of the land, and recognize the concerns of the West Oakland community we and our tenants will operate in. Prologis is also committed to the success of our business and the success of our customer's businesses who will occupy our warehouse buildings at the OAB.

Working towards the goals for improved air quality will require coordination and collaboration from all tenants of these warehouses to plan and implement emission reduction actions that are impactful, practical, and feasible.

1.1 Purpose of this Air Quality Plan for Operations of the Custom Goods Facility

The purpose of this Air Quality Plan for Operations of the Custom Goods Facility at CC-1 Warehouse (Plan) is to:

- Provide clear direction for tenant of this warehouse regarding operation air quality and energy conservation requirements for Tenant Improvements (TI) and for on-going operations throughout the duration of their lease.
- Provide a documented path of compliance for the Standard Conditions of Approval/Mitigation Monitoring and Report Program (SCA/MMRP) relating to air quality and public outreach as outlined in Mitigation Measure PO-1, which involves public outreach to Oakland Army Base stakeholders.

The Oakland Army Base Redevelopment project was approved by the City of Oakland (City) in 2002, and then revised with an Initial Study/Addendum in 2012 (OAB Project). In both of these documents, the goals and mitigations were very broad, attempting to cast a wide net over a master plan level development that was still in the conceptual stage. One of the objectives of this diesel emission reduction and operational air quality plan for the Custom Goods facility is to clarify and distill which requirements apply to operations of this particular facility, to clarify any vagueness in the applicable SCA/MMs and to comply with the mitigation measures.

1.1.1 : This document applies to the tenant referred to as Custom Goods, which will occupy the 189,038 sf warehouse at the Oakland Global Logistics Center, referred to as CC-1, address: 2001 Maritime Street.

1.1.2 : The tenant is required to comply with all applicable state and regional air quality regulations and is required to implement the components of this document.

1.1.3 : The tenant will be required to demonstrate how compliance is achieved on the specific user level.

1.1.4 : This Plan will become a component of tenant Lease documents.

1.1.5: The City of Oakland, as the lead agency under the California Environmental Quality Act (CEQA), will determine compliance with the applicable mitigation measures and will determine compliance with this Plan.

2. TENANT SUBJECT TO THIS PLAN

2.1 This Plan applies to the tenant referred to as Custom Goods, which will occupy the Prologis warehouse referred to as CC-1 located at 2001 Maritime Street. The shell of the building completed construction in October 2020, with tenant improvements planned to be completed by December 2021.

Description of Operations

The 189,038 sf building and site will be leased solely to Custom Goods, who will operate the site as a U.S. Customs and Border Protection (CBP) Centralized Examination Station (CES). Custom Goods specializes in the operation of secure cargo inspection facilities where import/export goods are examined and cleared for transport. In general, a cargo inspection facility is designed to promote safe and efficient inspections and operational support tasks by CBP officers. The overall function of the facility includes the following objectives:

- Maintain physical security standards.
- Enable rapid devanning of cargo at a CES.
- Enable secure storage and movement of cargo at a CES.
- Provide easily accessible cargo for CBP examination.
- Provide easily accessible containerized cargo reload.

Tenant Improvements inside the building will include roughly 3,000 sf of administrative offices, 11,000 sf of secure U.S. Customs offices with accessory inspection areas, approximately 40,000 sf of cold dock and refrigerated space for cold chain inspections, and remainder of space to be used as dry cargo hold or inspection areas.

The CBP inspection and processing areas are physically secure to prevent unauthorized access. The processing area includes spaces for canine inspections, X-ray screening, and agricultural examinations. During canine inspections, dogs screen the containers. The X-ray screening is conducted by non-intrusive inspection (NII) units. Processing areas generally require unreleased cargo detention areas for safe, secure, temporary cargo detainment.

There will be +/-40 active dock positions where goods are inbounded and outbounded. Reefer plugs will be provided at 50 trailer positions and at all refrigerated dock doors.

Custom Goods expects that truck traffic will be both Port drayage and over the road transportation to other destinations. The Port drayage compliment will, on average and at full capacity, represent approximately 60 to 70 round trips per day, 5 days a week. The average daily over the road drayage compliment will be 45 loads a day, 5 days a week.

Products being inspected/held will be moved around by the following material handling equipment:

- 10 ea. 6,000 lb electric fork trucks
- 2 ea. 12,000 lb electric fork trucks
- 1 ea. 35,000 lb diesel forklift
- 2 ea. diesel yard hostlers

Custom Goods estimates less than 40 employees at this facility, however Customs and Border Protection will have additional onsite staff that will operate in 2 shifts: First shift will be 40 to 60 individuals and Second shift will be 30 to 40 individuals. Parking will be fully accommodated onsite, as the current site is striped for 139 autos.

Figure 1: Site Plan – Overall Site showing building and Custom Goods' lease area subject to this Plan

2.2. Upon termination of the Custom Goods lease, a different Air Quality Plan or an addendum to this Plan may be required as determined by the City. Stakeholder notification will be provided for revisions the City determines to be substantive.

2.3: If an amendment or exception to this Plan is requested or determined to be necessary, the City will evaluate the scope of the amendment/exception and shall determine the necessary process for undertaking such an amendment/exception. Stakeholder notification will be provided for amendments or exceptions which the City determines to be substantive.

3. SCA/MMRP REQUIREMENTS

The OAB project was approved in 2002, and then revised with an Initial Study/Addendum in 2012. The City of Oakland prepared a SCA/MMRP, which was approved by the Oakland City Council on July 16, 2013, superseding a previous version dated October 15, 2012. This Plan focuses on the air quality conditions of approval and mitigation measures (together “MM’s”) identified in the SCA/MMRP. The entirety of the SCA/MMRP is available on the City of Oakland website.

Table 1 below lists the air quality-related MMs applicable to this tenant/building. Prior to receiving the building shell and sitework permits for construction of this building, Prologis prepared (and the City approved) the Construction Management Plan, which addressed the construction related air quality MMs. The table below shows how the applicable air quality MMs are addressed. Additionally, it should be noted that SCA Air-3 and MM 4.4-3b do not apply to the Custom Goods operations. SCA Air-3 applies only to buildings which will contain sensitive receptors (e.g., hospitals, schools, etc.) and MM 4.4-3b applies only to maritime uses at the West Gateway bulk marine terminal.

Table 1: Summary of Air Quality SCA/MMRP Requirements and the Response Method which addresses each one

SCA/MM #	Description	Response Method
AIR-1	Construction Management Plan	Construction Mgmt Plan/Previously Approved
AIR-2	Construction Related Air Pollution Controls	Construction Mgmt Plan/Previously Approved
TRANS-2	Construction Traffic & Parking	Construction Mgmt Plan/Previously Approved
MM 4.3-13	Traffic Control Plan – Hazmat	Construction Mgmt Plan/NA

MM 4.4-6	Energy Conserving Fixtures/Design	Air Quality Operational Plan
MM 4.4-4	Truck Diesel Emissions Reduction Plan	Air Quality Operational Plan
MM 4.4-5	Transportation Control Measures	Air Quality Operational Plan
TRANS-1	Parking and Transportation Demand Mgmt	Air Quality Operational Plan
MM 5.4-1	Demonstration Projects	Air Quality Operational Plan

4. Elements of this Air Quality Plan for Operations of the Custom Goods Facility

This Plan contains the following components:

4.1) Truck and Equipment Diesel Emission Reduction (MM 4.4-4)
4.2) Encourage, Lobby, and Participate in Emission Reduction Demonstration Projects (MM 5.4-1) 4.3) Technology Review Program (MM 4.4-4)
4.4) Sustainable Design and Construction (MM 4.4-6)
4.5) Transportation Control Measures and Parking/Transportation Demand Management (SCA TRANS-1, MM 4.4-5)
4.6) Quantification of Diesel Emissions (4.4-4)

4.1 Truck and Equipment Diesel Emission Reduction

The requirements listed below will reduce the diesel emissions, including diesel particulate matter and nitrogen oxides, produced during the operation of this warehouse.

Trucks

4.1.1) On-Road Trucks – All diesel trucks with a gross vehicle weight rating over 14,000 pounds entering the site of this warehouse must comply with the Truck and Bus Regulation of CARB which is in effect at the time of operation of the truck(s).

4.1.2) Drayage Trucks [1]– Should Custom Goods receive cargo from the maritime terminals, an intermodal rail yard, or property of the Port of Oakland, the trucks doing so must comply with the Drayage Truck Regulation (DTR) of the California Air Resources Board (CARB) which is in effect at the time of operation of the truck(s). See California Air Resource Board's Drayage Truck Regulation for more details, including truck engine year requirements and truck registry requirements.

[1] Drayage trucks are defined by CARB as diesel-fueled Class 7 or Class 8 Trucks with gross vehicle weight rating 26,001 lbs. or more that transport cargo, containers, or chassis to or from a port or intermodal rail yard in CA.

4.1.3) Trucks with transport refrigeration units (TRUs) – Roughly 40 percent of the trucks arrive at the Custom Goods facility in refrigerated vehicles. Electrical outlets are planned and required to be installed at the loading docks serving the refrigerated portion of the facility so trucks can run refrigeration with electricity while loading and unloading. Custom Goods shall use "good faith" efforts such as posting signs on the loading dock indicating plug-in availability and email notification to vendors encouraging use of plug in capable vehicles at the Custom Goods facility to maximize the number of deliveries with plug-in refrigeration compatible delivery trucks with the goal of 100%. Custom Goods would be responsible for ensuring use of electrical outlets during loading and unloading per Section 4.1.4 below.

4.1.4) Idling Rules for all trucks - All size and types of in-bound and out-bound delivery vehicles shall be prohibited from idling more than 2 minutes when loading and unloading or staging at this site. The idling rules shall be posted in easily-visible locations on-site and shall be enforced by Custom Goods.

4.1.5) Management of Loading Docks or loading/unloading - A dock management or loading/unloading system shall be developed and implemented by Custom Goods for delivery requirements to ensure that truck idling times do not exceed two minutes when the trucks are on site, and that electric capable TRU's are plugged-in, and that on-site TRU diesel engine runtime be no more than fifteen minutes.

4.1.6) Compliance with Truck Routes and with the West Oakland Truck Management Plan – All trucks serving the Custom Goods warehouse must use designated truck routes to arrive and depart from this building. Additionally, such trucks shall comply with the West Oakland Truck Management Plan (approved by the City and Port on April, 2019), or with other City-approved truck regulations in effect at the time of operation of the truck serving this tenancy.

4.1.7) CARB Compliance for Trucks –

a. Compliance with applicable air quality regulations for commercial trucks and vans are required including, but not limited to, the CARB Tractor-Trailer Greenhouse Gas Reduction Regulation, Periodic Smoke Inspection Program, Statewide Truck and Bus Regulation or Drayage Regulation.

b. All truck fleets owned by Custom Goods, or under contract with Custom Goods to provide delivery services to/from this warehouse, shall provide proof of compliance through CARB certificates of compliance or copies of annual smoke test results.

Off-Road Equipment used in the Custom Goods operation

4.1.8) Off-Road Equipment

a. Outdoor off-road equipment over 25 horsepower, including but not limited to yard equipment, exterior forklifts and pallet jacks, shall be zero and near-zero emission equipment. This includes Tier 4i or Tier 4 diesel equipment (or equivalent if Tier system is not applicable to a particular piece of equipment). Such equipment can also be electric, propane, bio-diesel, and alternative-fueled equipment.

b. Indoor off-road equipment including but not limited to interior forklifts, scissor lifts, pallet jacks and “order pickers” shall be electric, propane or alternative-fueled equipment.

c. Custom Goods shall submit an equipment list of all off-road equipment to be used both indoors and outdoors to demonstrate that zero and near-zero emission (including Tier 4 or 4i diesel equipment or equivalent) equipment, or electric, propane, bio-diesel or alternative-fueled equipment will be used during operations.

d. All off-road equipment shall be properly serviced and maintained throughout the life of the equipment.

e. Compliance with all applicable CARB regulations for off-road diesel equipment used at this site is required, including but not limited to the Diesel Off-Road Online Reporting System (DOORS) and the Equipment Identification Number (EIN).

f. Also see Section 4.3 of this Plan related to the Technology Review Program.

4.1.9) Idling Rules for off-road equipment - Diesel off-road equipment shall be prohibited from idling more than 2 minutes when loading and unloading, staging, or when not in active use. See CARB regulation for in-use off-road diesel vehicles for clarification of what is considered idling. The idling rules shall be posted in easily-visible locations on-site.

4.2 Participation in Emissions Reduction Demonstration Projects

Custom Goods shall evaluate emission reduction demonstration projects that promote technological advances in improving air quality. Examples of some demonstration projects include but not limited to: CNG/LNG trucks, energy generation via alternative systems electricity.

Custom Goods is encouraged to utilize innovative and cleaner technology/equipment from operations in other Custom Goods locations.

Custom Goods will provide contact information to the BAAQMD for receipt of information regarding grants, vouchers and other funding opportunities for demonstration opportunities.

Custom Goods will report on demonstration projects considered per the Technology Review Program below.

4.3. Technology Review Program

Custom Goods shall use cleaner technology over time as it becomes more readily available, practical and economically feasible. To accomplish this, Custom Goods shall review new technology every three years and with equipment turnover (prior to acquisition of, or lease of) additional or replacement of Custom Goods fleet trucks or on-site equipment to see if zero or near-zero equipment is economically feasible and practical.

Custom Goods shall investigate and make part of such analysis, any grant, voucher or other type of program that would help offset cost and / or otherwise make such equipment available, practical and economically feasible. Custom Goods shall submit such technology review to the City upon request.

If the technology review demonstrates that new technology/equipment will be effective in substantially reducing emissions, is available, practical and economically feasible as determined by Custom Goods, then Custom Goods shall implement such technology within 12 months.

4.4 Sustainable Design and Construction

Sustainable design of tenant improvements has a beneficial impact on long-term emissions reduction, improved air quality and reduced energy consumption. Tenants are required to comply with all applicable state and regional air quality regulations and are required to implement the following:

4.4.1) LEED Gold – The core and shell of this building achieved a “Gold” level certification per the United States Green Building Council’s (USGBC’s) Leadership in Environmental and Environmental Design (LEED) rating system, which surpassed the requirements of the statewide Title 24 building code requirements and the requirements of the SCA/MMRP. As part of the Gold level Core and Shell certification, it is expected that the tenant improvements (TI) will be performed under a separate scope and includes a provision to include the following sustainable design measures in the TI not a part of the shell build-out.

Custom Goods must follow the design guidelines set forth under LEED Gold Core and Shell system. This LEED addenda shall be included by Prologis as an exhibit to the tenant's lease. In 2018, requirements of LEED Gold include items such as:

- Bike storage, changing rooms and showers
- Low flow plumbing fixtures
- Energy efficient lighting, including light emitting diode fixtures (LED)
- Natural ventilation

Custom Goods is also encouraged, but not required, to obtain LEED-CI (Commercial Interiors) certification, preferably also at a Gold level.

4.4.2) Title 24 Compliance – Tenant construction and improvements shall meet Title 24 (Building Energy Efficiency Program) of the International Building Code (IBC)/California Code of Regulations (CCR) to satisfy Mitigation Measure 4-4.6. This will be required in order to obtain a building or TI permit from the City of Oakland.

4.4.3) Renewable Energy and Infrastructure for charging Electric Trucks and Off-Road Equipment–
a. The City encourages use of a renewable energy system or combination of systems (solar/wind/mechanical/tidal/hydrogen) designed to offset 20% of building's annual electrical consumption. Custom Goods and Prologis are currently working on providing solar panels to offset electricity demand with the plan to install once the exact refrigeration and electrical loads are determined.
b. Rooftop solar photovoltaic (PV) power is preferred and is in the planning stages.
c. The shell building roof structure of this warehouse building has been designed to support solar panel load.
d. The electrical room has been sized for additional future solar PV infrastructure.

4.5 Transportation Control Measures & Parking/Transportation Demand Management

Transportation Control Measures (TCMs) in MM4.4-5 are intended to provide alternative ways for employees to commute to work at this warehouse.

Transportation Control Measures

In addition to the fair share program implemented by the City and the Port for the OAB project, Custom Goods is required to implement TCMs 9, 11, and 13 per MM 4.4-5:

9 – Provide preferential parking for carpool and vanpool vehicles per City of Oakland and LEED standards.
11 – Secure, weather protected bicycle parking shall be provided on-site, such as through bike lockers.
13 – Showers and lockers will be provided part of the tenant improvements.

Additionally, electrical vehicle charging station infrastructure for cars will be installed in the parking lot of this warehouse and as well as necessary infrastructure in place for future truck charging stations.

4.5.1) Fair Share Participation – The developer of this building is participating in the City's defined "fair share" program and has contributed to its fair share funded TCM programs, as described in the Fair Share Program. The City shall take lead on implementing the fair share program.

4.5.2) Parking and Transportation Demand Management – Custom Goods shall prepare and implement a Parking and Transportation Demand Management Plan per SCA TRANS-1, consistent with the number of onsite employees, with the goal of reducing drive-alone commute trips during the peak traffic periods.

4.6 Quantification of Diesel Emissions

The 2012 Initial Study/Addendum analyzed whether the OAB Project (as defined in Chapter 2 of the Initial Study/Addendum) would result in total OAB Project emissions which exceed 1999 BAAQMD Significance Thresholds as specified in the 2012 Addendum. Such Thresholds are established for reactive organic gases, nitrogen oxides (NOx), particulate matter (PM) 10 and PM2.5; the applicable Threshold for each of these pollutants as clarified on page 132 of the Initial Study/Addendum was 15 tons per year. Table 3.3-8 on page 150 of the Initial Study/Addendum shows that OAB Project emissions of NOx exceed the Threshold of Significance, while also showing that the other pollutants do not exceed the Threshold of Significance.

Operations of the Custom Goods facility shall, as stated in MM 4.4-4, "strive to reduce contributions to West Oakland diesel emissions to less than significant levels", using the thresholds of significance identified in the 2012 Initial Study/Addendum. Reducing diesel emissions will have two benefits: reducing NOx and reducing PM2.5, which is a toxic air contaminant.

To determine if the diesel emission reduction actions required by this Plan will reduce emissions associated with operations of the Custom Goods facility to a less than significant level, such emissions are quantified below.

This was done by quantifying the emissions from diesel trucks which will serve the Custom Goods facility using the Institute of Transportation Engineers (ITE) Trip Generation 10th edition OR actual verifiable data of the Custom Goods daily truck and passenger vehicle trips, and the most recent California Emissions Model (CalEEMod) to quantify emissions per ton per year for their operations.

RESULTS: This quantification of emissions was undertaken in May 2021 using data from Custom Goods on the daily truck and passenger vehicle trips and the CalEEMod 2016.3.2 model and EMFAC 2017. This analysis looked at two different points in time: 1) At launch, 2022; and at 2024, with fleet turnover, retrofit or replacement per ARB motor vehicle regulations. A separate analysis was prepared to quantify the onsite TRU emissions associated with the project. The TRU NOx emissions will be: 0.10 tons per year in 2022 and 2024. The total NOx emissions including vehicles and TRUs will be: 0.43 tons per year in 2022, and 0.37 tons per year in 2024. This amount is below the Threshold of Significance for NOx which, per the 2012 Initial Study/Addendum, was 15 tons of NOx per year. As stated previously, the 2012 Initial Study / Addendum found that PM2.5 emissions associated with the trucks from this facility fall below the individual project threshold of 10 tons per year from the newer BAAQMD 2011 Guidelines. In addition, diesel particulate matter impacts at the nearest offsite receptor location would fall below the threshold for increased cancer risk: less than 10 cases per million, non-cancer hazard index less than 1.0, and PM2.5 level of less than 0.3 ug/m^3 annual average.

4.6.1 As other uses and facilities are constructed at the OAB, the required operational air quality plan for each individual project will quantify its individual emissions and provide a calculation for the cumulative emissions of all permanent projects at the OAB based on the prior operational air quality plans against the Thresholds.

4.6.2 If emissions per tenant exceed the Threshold of Significance when added together with other permanent operations under way at the OAB, then all tenants will meet and discuss with the City what other feasible measures can be implemented to further reduce emissions from operations. Any measures agreed to by both City and tenants shall be implemented within a reasonable time period agreed upon by the City and the tenant(s).

5. PLAN IMPLEMENTATION

Custom Goods shall provide Prologis with all required annual compliance documentation, in the appropriate format, for subsequent timely submission by Prologis to the City's Environmental Review Officer for each element of this Plan per table 2 below. The City will be responsible for reviewing and approving the compliance.

Such compliance shall be subject to audit at City's discretion, not more than one per year, other than the Technology Review which is to be submitted to the City every three years. The City shall give 30-day notice prior to audit. The results of the compliance audit shall be available upon request and posted to the City's website.

Table 2 – Operational AQ Plan Compliance Summary Table Example

ID	Description of Plan Element	Compliance Method/Description	Required Date of Compliance
4.1	**T/E Diesel Emission**		

	Reduction		
	4.1.1 – Drayage Trucks	[provide truck or truck fleet compliance certificate]	If operations change such that drayage trucks are used; upon audit.
	4.1.2 – On Road Trucks	[provide truck fleet compliance certificate]	Prior to occupancy and upon audit.
	4.1.4 – Off Road Equipment	[provide off-road equipment fleet info; participate in CARB DOORS program]	Prior to occupancy and upon audit.
	4.1.6 – Idling Rules	[provide idling policy signage]	Prior to occupancy
	4.1.7 – Dock Management	[provide a plan to monitor truck deliveries and potential queuing]	Prior to occupancy
	4.1.8 – CARB Compliance	[provide fleet info]	Continuous; upon audit
4.2	**Sustainable TI Design**		
	4.2.1 – LEED Gold Compliance	[reference plan sheets or submittals where LEED Addenda items are shown]	Prior to occupancy
	4.2.2 – Title 24 Compliance	[provide statement on sheet indicating T24 compliance]	Prior to issuance of building permit for TI
	4.2.3 – Renewable Energy	[describe solar PV or other onsite renewable energy system – KW generation]	If proposed, prior to occupancy or per Technology Review
4.3	**Transportation Control Measures**		
	4.3.1 – Fund Fair Share Programs	[City assessed fair share]	Paid by Prologis in full
	4.3.2 – Parking/TDM Program	[provide a plan to reduce employee single-driver traffic]	Prior to occupancy
4.4	**Demonstration Projects**		
	4.4.1 – Demo Projects Participation	[provide any demonstration projects]	Continuous
4.5	**Technology Review**		
	4.5.1 – Technology Review Program	[provide periodic updates over time]	Continuous

4.6	Quantification of NOx emissions If cumulative threshold exceeded, Tenants and City will meet and discuss other feasible reduction measures to be implemented within an agreed upon time frame.		As needed

Timing to implement most of these plan elements will happen as the tenant improvements are constructed or as operations begin. However, Prologis nor the tenant controls the implementation timing of the fair share program elements. The fair share elements are City-led programs.

From time to time, tenant may be required to provide reporting on the progress or maintenance of various plan elements (for example, updating truck fleet as new vehicles are purchased). Any update requests shall be initiated by the City and tenant shall provide the requested information.

Exhibit A

This is a Summary of the report done by Mitchell Air Quality in May 2021 submitted to the City and is included in this plan as Exhibit B.

Quantification of Diesel Emissions for the Custom Goods facility at OGLC-3

In order to determine if the diesel emission reduction actions required by the *Air Quality Plan for Operations of the Custom Goods Facility at the OGCL-3 Warehouse* will reduce NOx emissions below the Thresholds of Significance specified in the Initial Study/Addendum for development at the Oakland Army Base Project, the emissions associated with operations of the Custom Goods facility was quantified. This quantification of NOx emissions was undertaken in May 2021 using data from Custom Goods on the daily truck and passenger vehicle trips and the CalEEMod 2016.3.2 model and the ARB EMFAC 2017 model. The analysis includes emissions from Transportation Refrigeration Units (TRU) and onsite material handling equipment (MHE). Specifically, the Custom Goods estimates that 40 percent of the trucks at the facility will be equipped with TRUs. As such, Custom Goods expects approximately 140 daily diesel-powered Drayage Trucks per day (70 two-way trips per day) and approximately 90 diesel powered over-the-road trucks per day at full capacity (45 two-way trips per day). Based on this information, the project is expected to generate 307 average annual two-way trips per day including all trucks and cars used for incoming and outgoing deliveries and employee trips per day at full operation for 5 days per week. The project also includes two-yard hostlers and 1 35,000-pound capacity diesel forklift.

The project building would be used for processing incoming material from ships at the port and outgoing material for export through customs and inspections. The truck trips used to haul the material to and from the port are existing trips that occur without the project. The material is currently processed at other locations outside of the port and OGLC after leaving the waterfront. The only new emissions that would occur are from employee compute trips to and from the project building, material handling equipment used to position trailers and containers onsite, and additional transportation refrigeration unit (TRU) use while the trucks are parked at the project site.

This analysis showed NOx emissions will be 0.43 tons of NOx per year which is well below emissions estimated in 2012 for a transloading warehouse for this site (6.60 tons per year), well below the Threshold of Significance which is 15 tons per year.

Tenant	Size of lease area	Number of daily truck trips	Number of daily employee trips	NOx emissions estimated in 2012 for a transloading warehouse of this size (tons/year)	NOx emissions estimated in in 2024 based on Custom Goods use[2] (tons/year)	Threshold of Significance for NOx in tons/year[3]
Custom Goods	189,038	164	143	6.60	0.43	15

As stated in Section 4.6 of the *Air Quality Plan for Operations of the Custom Goods,* other tenants at the OAB Project will be required to quantify the emissions associated with their operations. These estimates will form a calculation for the cumulative emissions for all permanent projects at the OAB to determine if cumulative emissions stay below the Threshold of Significance. See Section 4.6 for more details.

Toxic Air Contaminants

Diesel particulate matter (DPM) emissions associated with the trucks serving this facility would not exceed the individual project threshold of increased cancer risk: less than 10 cases per million, the non-cancer hazard index less than 1.0, and PM2.5 level of less than - 0.3ug/m^3 annual average. As shown in the following table, PM2.5 emissions from the Custom Goods facility in 2022 would not exceed the 1999 BAAQMD criteria pollutant emission threshold which is used as a surrogate for DPM.

Tenant	Size of lease area	Mobile Source Emissions (tons/year)	TRU Emissions (tons/year)	Total Emissions (tons/year)	Threshold of Significance for PM2.5 in tons/year[3]
Custom Goods	189,038	0.045	0.004	0.046	15

The Air Quality Plan includes two measures to reduce PM2.5 emissions from the project from onsite trucks. The first measure requires the loading docks to be electrified so that trucks and trailers with TRUs with plug in capability can run their refrigeration systems on electricity instead of using diesel power. TRU PM2.5 emissions are zero when operating on electricity. The loading dock and trailer stall electrification measure would provide a PM emission reduction from TRU use of 1.31 pounds per year in 2022. The second measure provides a commitment to prohibit idling for more than 2 minutes when the trucks are onsite. This provides a 60 percent reduction in idling emissions when compared with compliance with the ARB's idling regulation which limits idling to 5 minutes. This measure would reduce PM2.5 emissions by 0.60 pounds per year. Although the reductions appear small, they provide substantial benefits for people working on or near the loading docks and parked trucks.

[2] Quantification of emissions from diesel trucks serving the Custom Goods facility was done based on data from Custom Goods estimating the daily truck and passenger vehicle trips, and the current California Emissions Model (CalEEMod) 2016.3.2. and EMFAC 2017.

[3] Thresholds of Significance are as specified in the 2012 Initial Study/Addendum, pages 132 and 133.

Exhibit B

Quantification of Diesel Emissions for the Custom Goods Facility at Building 3 Warehouse in Oakland, California

Mitchell Air Quality Consulting

May 17, 2021

Cory Alvin, Environmental Coordinator
City of Oakland, Bureau of Planning
250 Frank H. Ogawa, Suite 3315
Oakland, CA 94612

Subject: Quantification of Motor Vehicle Emissions for the Oakland Global Logistics Center Building 3 Project in Oakland, California

Dear Mr. Alvin:

Mitchell Air Quality Consulting (MAQC) prepared an assessment to determine the truck and passenger vehicle emissions associated with Oakland Global Logistics Center (OGLC) Building 3 including transportation refrigeration units (TRU) and yard hostlers. The purpose of the assessment is to determine if the diesel emission reduction actions required by the *Air Quality Plan for Operations of Custom Goods* will reduce NOx emissions below the Thresholds of Significance specified in the Initial Study/Addendum for development at the Oakland Army Base Project. The analysis focuses on oxides of nitrogen (NOx) which exceeded the Bay Area Air Quality Management (BAAQMD) threshold of significance in the 2002 EIR and 2012 IS/Addendum studies. The assessment also quantified $PM_{2.5}$ which is used as a surrogate for diesel particulate matter (DPM). PM_{10} was also provided in the analysis for information only.

Project Assumptions

The project building would be used for processing incoming material from ships at the port and outgoing material for export through customs and inspections. The truck trips used to haul the material to and from the port are existing trips that occur without the project. The material is currently processed at other locations outside of the port and OGLC after leaving the waterfront. The only new emissions that would occur are from employee compute trips to and from the project building, material handling equipment used to position trailers and containers onsite, and additional transportation refrigeration unit (TRU) use while the trucks are parked at the project site. The analysis also assessed the overall emissions that would occur including all new and existing sources accounting for existing emissions. The new emissions include only employee commute trip emissions, onsite idling emissions, onsite TRU emissions, and onsite material handling equipment (MHE) emissions.

The analysis assessed emissions at the expected date of first operations in 2022. A second set of model runs were prepared for 2024 to match analyses prepared for previous projects for use in showing cumulative progress in staying within emission budgets. The results include the benefits of mitigation measures to reduce project emissions. The emissions represent the net increase from existing conditions. The project uses CalEEMod 2016.3.2 and ARB EMFAC 2017 model to estimate emissions. Vehicle trip generation rates were provided by the future tenant (Custom Goods, Inc.). Offroad mobile equipment emission estimates use Offroad 2017 and CalEEMod emission factors.

Analysis Results

The existing plus project emission results and the new project emissions results are included in Appendix A. Table 1 presents a summary of the new emissions that would occur as the result of the project in 2022.

Table 1: 2022 OGLC-3 Annual Air Pollutant Emissions during Operations

Emissions Source	Emissions (tons per year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Port Drayage Trucks Idling	0.00	0.17	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.03	0.00	0.00
Transportation Refrigeration Units (TRU)	0.00	0.10	0.00	0.00
Yard Hostlers and Forklift	0.02	0.09	0.00	0.00
Employee Commute	0.03	0.04	0.15	0.04
Total	**0.04**	**0.43**	**0.16**	**0.05**
BAAQMD threshold for1999	**15**	**15**	**15**	**15**
Exceed Threshold?	No	No	No	No

Notes:

ROG = reactive organic gases NO_X = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter

Source: CalEEMod output and spreadsheet calculations (Appendix A).

The analysis showed that the increase in NOx emissions from OGLC-3 will be 0.43 tons of NOx per year in 2022 with mitigation. Project emissions are well below the BAAQMD 1999 Threshold of Significance which is 15 tons per year. The analysis also found that exhaust PM10 emissions including TRUs at full operations in 2022 will be 0.16 tons/year with mitigation, which fall well below the threshold of significance for PM10 of 15 tons/year, and $PM_{2.5}$ emissions will be 0.05 tons/year (there was not a Threshold of Significance for $PM_{2.5}$ applicable to the 2012 project). Although there was not an applicable threshold for $PM_{2.5}$, it should be noted that emissions for $PM_{2.5}$ will not exceed the BAAQMD 2011 $PM_{2.5}$ Threshold of Significance which is 10 tons per year. The results reflect compliance with mitigation measures to reduce project emissions from vehicle idling and from TRU operation.

A second set of modeling runs was performed to show the emissions that would occur in 2024 with continued implementation of ARB motor vehicle regulations and vehicle fleet turnover as newer cleaner models are purchased and old models are retrofitted to meet fleet requirements. NOx emissions are expected to decline by nearly 20 percent in just two years during this period.

Table 2: 2024 OGLC-3 Annual Air Pollutant Emissions during Operations

Emissions Source	Emissions (tons per year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Port Drayage Trucks Idling	0.00	0.12	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.03	0.00	0.00
Transportation Refrigeration Units (TRU)	0.00	0.10	0.00	0.00
Yard Hostlers and Forklift	0.02	0.09	0.00	0.00
Employee Commute	0.02	0.03	0.15	0.04
Total	**0.04**	**0.37**	**0.16**	**0.05**
BAAQMD threshold	**15**	**15**	**15**	**15**
Exceed Threshold?	No	No	No	No

Notes:

ROG = reactive organic gases NO_X = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter

Source: CalEEMod output and spreadsheet calculations (Appendix A).

The analysis used CalEEMod 2016.3.2 to estimate project emissions with trip generation rates based on information provided by the Custom Goods for truck trips and numbers of employees that will work at the project site at full operations. The tenant indicated that at full operation the project would generate 70 incoming and 70 outgoing Drayage Truck trips per day that operate only at the port and 45 incoming and 45 outgoing trips by over the road trucks (T7 Tractor) that travel to and from offsite destinations. The facility is expected to employ 100 people at full operation which would generate 100 incoming and 100 outgoing trips per day during their commute to work and home, assuming no carpooling or transit use. The analysis used EMFAC 2017 emission factors for the truck emissions using the composite vehicle age distribution for 2022 and 2024 and the composite vehicle speed. Modeling assumptions and modeling runs used in the analysis are provided in Appendix A.

The project will include trucks equipped with transportation refrigeration units (TRU) powered by diesel engines. The tenant estimates that 40 percent of the trucks will be equipped with TRUs (46 trucks/trailers). There are a wide variety of TRU designs installed on refrigerated trucks. The most common are powered by a small diesel engine (average is about 34 horsepower (HP) and they operate when the vehicle or trailer is parked and when moving. Some configurations use a diesel generator that runs the cooling system with electricity. Some of these systems can plug in at loading docks using grid power to operate the cooling system or they can operate on power from the diesel engine when no plug in is available. The project loading docks will have plug in capability, so those trucks would have no TRU emissions while at the loading docks. The ARB estimates that approximately 60 percent of semi-trucks are plug-in capable. The analysis assumed that all TRUs would be diesel powered and an average of 28 trucks with TRUs would be plugged in at the loading docks each day. The onsite semi-truck TRU emissions would be reduced by 60 percent based on these assumptions. Over time, more and more TRUs are expected to include plug in capability to take advantage of fuel savings and to comply with regulations.

A TRU emission analysis was prepared for the project for NOx and PM emissions. The analysis uses ARB emission factors for TRUs. The ARB Airborne Toxic Control Measure for in-use Diesel Fueled TRU and TRU Generator Sets, and Facilities Where TRUs Operate requires the retrofit or replacement of all TRUs with units meeting Ultra-Low Emission standards by 2019 (0.02 g/bhp-hr) to reduce diesel particulate matter. This means that all trucks with TRUs accessing the site will meet this standard in 2022. The TRU NOx emission factor used in the analysis is 4.43 g/bhp-hr based on ARB offroad emission factors for 2010 model year TRUs. TRUs for the 2020 model year have an emission factor of 2.7 g/bhp-hr, showing that emissions will decline as newer TRUs replace older higher emitting models. The TRUs are assumed to run 50 percent of the time to maintain the appropriate temperature. The onroad TRU use is considered part of the existing conditions since the trucks equipped with TRUs currently travel directly to the port from a location outside the Prologis development area. The on-road operating time to determine existing emissions was based on the time to travel the average trip length within the community (CalEEMod default 7.3 miles at 30 mph). The time of TRU operation onsite was estimated at 1 hour per day per TRU based on assumptions used for other projects. After vehicles are unloaded, no TRU operation is needed. The results for TRU use presented in Table 1 and Table 2 represent onsite TRU use only. The analysis of existing plus project TRU use is provided in Appendix A.

The loading dock electrification measure would provide a 60 percent reduction in TRU use. The measure provides a PM emission reduction from TRU use of 0.0007 tons per year in 2022. NOx reductions from this measure are 0.15 tons per year in 2022. The results of the TRU analysis are provided in Table 3.

Table 3: OGLC-3 Project TRU Emissions

Source	PM lbs/year	PM (tons/year)	NOx lbs/year	NOx (tons/year)
On Site Use Drayage and T7 Trucks	2.183	0.0011	483.6	0.242
Reduction from Electric Plug In	1.31	0.0007	290.15	0.1451
On-Site TRU Emissions with Mitigation	**0.87**	**0.0004**	**193.15**	**0.0967**
Notes [1] Modeling assumptions and emission calculations are provided in Appendix A.				

The project's Air Quality Plan includes a commitment to prohibit idling for more than 2 minutes when the trucks are onsite. This provides a 60 percent reduction in idling emissions when compared with compliance with the ARB's idling regulation which limits idling to 5 minutes. Compliance with this measure would reduce NOx emissions by 0.57 tons per year and PM emissions by 0.0002 tons per year.

The project includes offroad material handling equipment to position trailers and containers onsite. The project includes two diesel powered yard hostlers and one 35,000-pound capacity forklift. The yard hostlers and forklift are considered offroad mobile equipment. The yard hostlers are assumed to operate 2 hours per day. The forklift is assumed to operate 7 hours per day. The emission factors are based on emission factors for equipment meeting Tier 4 emission standards. The emissions from the equipment are included in Tables 1 and 2.

OGLC-3 project emissions based on project specific information and the emissions allocated to this building in the 2012 Addendum are shown in the following Table. The reductions in TRU emissions from use of electric plug ins and from the idling reduction measure are included in the results.

The project reactive organic gas (ROG) emissions in the 2012 Addendum did not exceed the BAAQMD 1999 threshold (15 tons per year); therefore, the impact was less than significant and no mitigation measures were required to reduce ROG. Modeling results presented in the Table 4 for the project at maximum operations levels in 2022 show that ROG emissions would amount to 0.12 tons per year which is only 1.2 percent of the 1999 threshold.

Table 4: OGLC Building 3 (Cold Storage) Project NOx Emissions

Tenant	Lease Area (sf)	Annual Average Daily Truck Delivery Trips	Annual Average Daily Employee/ Other Trips	Emissions (tons/year)		
				NO_X (2012 EIR Transload Warehouse	NO_X (2022 Based on Project Data)	BAAQMD 1999 NOx Threshold
OGLC 3 Cold Storage	189,038	164	143	6.60	0.43	15[1]

Notes
[1] Thresholds of Significance are as specified in the 2012 Initial Study/Addendum, pages 132 and 133.
[2] Quantification of emissions from diesel trucks serving the facility uses information provided by Custom Goods including: estimated number of daily truck and employee vehicle trips. Emissions were calculated using CalEEMod 2016.3.2 with EMFAC 2017 Emission Factors for diesel trucks.

Toxic Air Contaminants

MAQC reviewed the air quality discussion contained in the 2012 IS/Addendum (for the OAB Project) and the 2002 EIR (which analyzed a larger redevelopment project, see Project Description in the 2002 EIR). The health risk discussion in the 2012 IS/Addendum referring to the results of the 2002 EIR assessment indicated that increased cancer risk from emissions for the entire OAB project were 10 in a million at receptor locations in West Oakland and 62 in a million at the property line. The BAAQMD project level threshold of 10 in a million increase in cancer risk applies to the most impacted offsite receptor. The current project no longer includes day care facilities or schools within the project site. The 2012 EIR did not include a receptor location map or an impact contour map to show the location of receptors used to determine the impact. However, the 2012 project is assumed to have included onsite receptors at day care facilities within the Research and Development/Office component that is no longer part of the project. A recreational receptor was also included for people fishing at the waterfront areas, but that receptor is located upwind of the OGLC and City of Oakland Port project area and would receive most of its impacts from ships and trucks loaded at the port. Therefore, the most impacted receptor for the current project would be located in West Oakland approximately 2,300 feet from the project boundary. DPM emissions have dropped substantially since 2002 and the health risk impacts would be proportionally lower with the reduction in DPM emissions. The analysis includes onsite DPM emissions from trucks equipped with TRUs. The TRUs add about 0.87 pounds per year of DPM at full project operation in 2022. Yard hostlers and forklifts are estimated to contribute approximately 7.9 pounds per year of DPM in 2022. Onsite truck idling contributes 0.27 pounds per year of DPM. The total project onsite DPM emissions are estimated at 9.0 pounds per year, which at 2,300 feet from the receptor would not add significantly to cancer risk in the community because of the effects of dispersion on the pollutant concentrations. The on-road emissions are considered part of the existing conditions and would not increase the risk to the neighboring community. Therefore, the impacts associated with toxic air contaminants for the OGLC-3 project would also fall below the thresholds of significance for toxic air contaminants.

Summary and Conclusion

Project emissions are well below all BAAQMD thresholds of significance for these pollutants. Toxic emissions at the most impacted receptor location is now expected to be less than significant. The project's emissions will continue to decline as fleets serving the project comply with new regulations and adopt new technologies. The project will achieve additional reductions from implementation of onsite measures included in the facility's Air Quality Plan to reduce idling beyond ARB regulation from 5 minutes to 2 minutes and to install electric plug-ins at loading docks to reduce TRU use. The reduced idling measure provides a 60 percent reduction in idling emissions. The loading dock electrification measure reduces onsite semi-truck/trailer TRU use by 60 percent.

If you have any questions regarding this analysis, please call me at 559.246.3732, or via email at dmitchell@mitchellaq.com

Sincerely,

David M. Mitchell

David M. Mitchell, Owner
Mitchell Air Quality Consulting
1164 E. Decatur Avenue
Fresno, CA 93720

APPENDIX A: Modeling Assumptions and Results

OAB NOx Emissions in tons per year for transport trucks and passanger vehicles, allocated per Building

Prepared by Dave Mitchell, Mitchell Air Quality Consulting
April 16, 2018

2012 EIR Addendum Traffic Study Trip Generation. Data is from table in Appendix B of 2012 Addendum

OAB City Area	Site Ref 2012	Allowable building square footage	Daily Trips (cars and trucks)	Trips/KSF	Daily Car Trips	Truck Percent	Daily Truck Trips	Truck Trip Percent of Gateway Area	CalEEMod VMT	Share of 2012 Truck NOx Emissions (tons/yr)	Share of 2012 Car NOx Emisions (tons/yr)	Total 2012 NOx Emissions by Building (tons/yr)	Emissions to Achieve BAAQMD 1999 Threshold	NOx Reductions Required per Building (tons/yr)	2012 NOx Emissions/KSF
CW1	WGW	146,000	547	3.75	438	20.0%	109	8.3%		3.43	0.49	3.92	0.39	3.524	0.027
CC1	CC1	50,000	216	4.32	173	20.0%	43.2	3.3%		1.35	0.19	1.55	0.16	1.391	0.031
CC2	CC2	160,000	591	3.69	473	20.0%	118.2	9.0%		3.70	0.53	4.23	0.43	3.807	0.026
CE1		105,000	335	3.19	268	20.0%	67	5.1%		2.10	0.30	2.40	0.24	2.158	0.023
CE2		63,000	205	3.25	164	20.0%	41	3.1%		1.28	0.18	1.47	0.15	1.321	0.023
CE3		275,000	877	3.19	702	20.0%	175.4	13.3%		5.49	0.79	6.28	0.63	5.650	0.023
CC3		161,000	594	3.69	475	20.0%	118.8	9.0%		3.72	0.54	4.25	0.43	3.827	0.026
CC4		91,000	347	3.81	278	20.0%	69.4	5.3%		2.17	0.31	2.49	0.25	2.236	0.027
CC5		38,000	145	3.81	116	20.0%	29.0	2.2%		0.91	0.13	1.04	0.10	0.934	0.027
CC6,7,8, 9	Truck Stop 10 acres	37,000	1366	36.92	902	34.0%	464.44	35.2%		14.54	1.02	15.56	1.56	13.991	0.420
CN3	Truck Pkg 5 acres	0	124		82	34.0%	42.16	3.2%		1.32	0.09	1.41	0.14	1.270	0.282
CN1	CWS	206,000	284	1.38	261	8.0%	22.72	1.7%		0.71	0.29	1.01	0.10	0.904	0.005
CN2	CASS	174,000	240	1.38	221	8.0%	19.2	1.5%		0.60	0.25	0.85	0.09	0.764	0.005
Total OAB City Area		**1,506,000**	**5,871**		**4,551**		**1,320**	100.0%	**2,094,102**	**41.3**	**5.1**	**46.45**	**4.67**	**41.78**	

ITE 9th Edition Trip Generation with Current Site Plan Reference

OAB City Area	Site Reference 2017	Allowable building SF	Truck Percent from EIR	ITE 9th Ed Trip Gen Rate (trips/KSF)	Current Site Plan Daily Trips (cars and trucks)	Daily Car Trips	Daily Truck Trips	Trips/KSF for CalEEMod Run Cars Only	Trips/KSF for CalEEMod Run Trucks Only	Car Emissions (tons/yr)	Truck Emissions (tons/yr.)	2017 Site Plan Allocation New Modeling: CalEEMod Total Emissions per Building Tons/yr	2017 Site Plan Allocation New Modeling: Emissions to Achieve BAAQMD 1999 Threshold (tons/yr)	2017 Site Plan Allocation New Modeling: Nox Reductions Required per Building (tons/yr)	2017 Site Plan w/2012 Emission Rates: Emissions Based on 2012 Rate and 2017 Site Plan (tons/yr)	2017 Site Plan w/2012 Emission Rates: Emissions to Achieve BAAQMD 1999 Threshold (tons/yr)	2017 Site Plan w/2012 Emission Rates: Nox Reductions Required per Building (tons/yr)
CW1	WGW	146,000	20.0%	1.68	245	196	49			0.065	0.751	0.816	0.39	0.422	3.92	0.39	3.52
CC1	MH-1	188,000	20.0%	1.68	316	253	63			0.084	0.967	1.051	0.59	0.466	5.82	0.59	5.23
CC2	MH-1	0	20.0%	0.00	0	0	0			0.000	0.000	0.000	0.00	0.000	0.00	0.00	0.00
CE1	CE-1	256,000	20.0%	1.68	430	344	86			0.114	1.317	1.431	0.59	0.843	5.85	0.59	5.26
CE2	CE-2	232,000	20.0%	1.68	390	312	78			0.104	1.193	1.297	0.54	0.753	5.41	0.54	4.86
CE3	New Central GW	289,000	20.0%	1.68	486	388	97			0.129	1.487	1.616	0.66	0.952	6.60	0.66	5.94
CC3	New Central GW	0	20.0%	0.00	0	0	0			0.000	0.000	0.000	0.00	0.000	0.00	0.00	0.00
CC4	New Central GW	0	20.0%	0.00	0	0	0			0.000	0.000	0.000	0.00	0.000	0.00	0.00	0.00
CC5	New Central GW	0	20.0%	0.00	0	0	0			0.000	0.000	0.000	0.00	0.000	0.00	0.00	0.00
CC6,7,8, 9	Truck Services	37,000	34.0%	EIR Rate	1,366	902	464			0.299	7.111	7.410	1.56	5.845	15.56	1.56	13.99
CN3	Truck Parking	5	34.0%	0.00	124	82	42			0.027	0.645	0.673	0.14	0.531	1.41	0.14	1.27
CN1	CWS	210,000	8.0%	1.38	290	267	23			0.089	0.355	0.443	0.10	0.340	1.03	0.10	0.92
CN2	CASS	185,000	8.0%	1.38	255	235	20			0.078	0.313	0.391	0.09	0.300	0.90	0.09	0.81
Total OAB City Area		**1,543,005**			**3,902**	**2,978**	**924**	**1.930**	**0.599**	**0.99**	**14.14**	**15.13**	**4.68**	**10.45**	**46.49**	**4.68**	**41.81**

OAB Port Area		Allowable building square footage	Daily Trips (cars and trucks)	Trips/KSF	Daily Car Trips	Truck Percentage	Truck Trips	Truck Trip Percent of Port Area	CalEEMod VMT	Share of 2012 Truck NOx Emissions (tons/yr)	Share of 2012 Car NOx Emisions (tons/yr)	Total 2012 NOx Emissions by Building (tons/yr)	Emissions to Achieve BAAQMD 1999 Threshold	Reductions Required per Building (tons/yr)	2012 Emissions/KSF
PL1, PL2 PL3, PL4		130,000	495	3.81	396.0	20.00%	99	10.1%		3.10	0.45	3.55	0.36	3.189	0.027
PL5, PL6		101,000	398	3.94	318.4	20.00%	79.6	8.1%		2.49	0.36	2.85	0.29	2.564	0.028
PL7		303,000	1023	3.38	818.4	20.00%	204.6	20.8%		6.41	0.92	7.33	0.74	6.590	0.024
PL8		139,000	522	3.76	417.6	20.00%	104.4	10.6%		3.27	0.47	3.74	0.38	3.363	0.027
PL9		173,000	631	3.65	504.8	20.00%	126.2	12.8%		3.95	0.57	4.52	0.45	4.065	0.026
PL10	Truck Pkg 7 acres	18,000	173	9.61	114.2	34.00%	58.82	6.0%		1.84	0.13	1.97	0.20	1.772	0.109
PL11	Truck Pkg 8 acres	18,000	198	11.00	130.7	34.00%	67.32	6.8%		2.11	0.15	2.25	0.23	2.028	0.125
PR1	OG TIC Railyard	155 employees	715	4.61	471.9	34.00%	243.1	24.7%		7.61	0.53	8.14	0.82	7.323	0.053
Total OAB Port		**882,000**	**4,155**		**3,172**		**983.04**	100.0%	**1,355,197**	**30.78**	**3.57**	**34.35**	**3.46**	**30.89**	
Total City & Port OAB			**10,026**		**7,723**		**2,303**			**72.1**	**8.7**	**80.80**	**8.13**	**72.67**	
Total Project 2012 NOx operational emissions including trucks, cars, ships, tub boats & trains, per Table 3.3-8 of 2012 Addendum												**149.10**	**15**		

OAB Port Area	Site Reference 2017	Allowable Building SF	Truck Percent from EIR	ITE 9th Ed Trip Gen Rate (trips/KSF)	Current Site Plan Daily Trips (cars and trucks)	Daily Car Trips	Daily Truck Trips	Trips/KSF for CalEEMod Run Cars Only	Trips/KSF for CalEEMod Run Trucks Only	Car Emissions (tons/yr)	Truck Emissions (tons/yr.)	CalEEMod Total Emissions per Building Tons/yr	Emissions to Achieve BAAQMD 1999 Threshold	Nox Reductions Required per Building (tons/yr)	Emissions Based on 2012 Rate (tons/year)	Emissions to Achieve BAAQMD 1999 Threshold (tons/yr)	Nox Reductions Required per Building (tons/yr)
PL1, PL2 PL3, PL4	PL1, PL2 PL3, PL4	130,000	20.0%	1.68	218.4	174.7	43.7			0.097	0.896	0.993	0.36	0.636	3.55	0.36	3.19
PL5, PL6	PL5, PL6	101,000	20.0%	1.68	169.7	135.7	33.9			0.076	0.696	0.771	0.29	0.485	2.85	0.29	2.56
PL7	PL7	303,000	20.0%	1.68	509.0	407.2	101.8			0.227	2.087	2.314	0.74	1.577	7.33	0.74	6.59
PL8	PL8	139,000	20.0%	1.68	233.5	186.8	46.7			0.104	0.957	1.062	0.38	0.685	3.74	0.38	3.36
PL9	PL9	173,000	20.0%	1.68	290.6	232.5	58.1			0.130	1.192	1.321	0.45	0.867	4.52	0.45	4.06
PL10	PL10	18,000	34.0%	EIR Rate	173	114.2	58.8			0.064	1.206	1.270	0.20	1.071	1.97	0.20	1.77
PL11	PL11	18,000	34.0%	EIR Rate	198	130.7	67.3			0.073	1.380	1.453	0.23	1.226	2.25	0.23	2.03
PR1	PR1	155	34.0%	EIR Rate	715	471.9	243.1			0.263	4.984	5.247	0.82	4.428	8.14	0.82	7.32
Total OAB Port		**882,155**			**2507.28**	**1,853.8**	**653.5**	**2.101**	**0.741**	**1.03**	**13.40**	**14.4**	**3.46**	**10.98**	**34.35**	**3.46**	**30.89**
Total City & Port OAB											**27.54**	**29.6**	**8.13**	**21.43**	**80.84**	**8.13**	**72.71**
											Totals	**98.6**	**15**		**149.1**	**15**	

Used EIR Trip numbers for pads with truck parking only

Total Emissions for cars and trucks for 2012 from EIR Addendum Table 3.3-8
Daily trips from EIR Addendum

2012 Total Nox	**161.1**
2012 Truck and Car	**80.8**
2012 Other	**80.30**
Existing Emissions	**12**
2012 Net Increase	**149.10**

2018 Truck and Car	**29.56**
2018 Other	**81**
2018 Total Nox	**110.56**
Existing Emissions	**12**
2018 Increase	**98.56**

	Square Feet	Truck trips per KSF	Truck Trips/Day	CalEEMod VMT/Year	CalEEMod VMT
Prologis Bldg CE-1 Project	256,136	0.31263232	80.1	135,989	**135,989**
Bldg CE- 1 Proj SCAQMD Trip Rate		0.233	59.7		**108,915**
OARB	1,000,000	0.983	983.0	1,355,197	
Gateway	1,000,000	1.320	1,319.9	2,094,102	
			2,303.0	3,449,299	

Used 1 million square feet to simplify the CalEEMod analysis since truck trips are known from traffic study and some land uses are based on acres.

	Miles
Average Trip Length from 2012 EIR	5

Transport Truck NOx Emissions

		NOx	PM10	PM2.5	PM2.5 ex
OARB Area		20.70	0.61	0.19	0.03
Entire Gateway Dev Area		31.73	0.94	0.30	0.05
Total Truck Emissions OARB and Gateway		**52.43**	**1.55**	**0.49**	**0.09**
Oakland Bldg 1	1.4 mile Trip Length	**1.17**	**0.01**	**0.00**	
Oakland Bldg 1	SCAQMD Trip Gen	**1.54**	**0.05**	**0.014**	**0.003**
Fraction of Total Truck Emissions EIR		**0.021**	**0.046**	**0.024**	
Fraction of Total Truck Emissions CalEEMod		0.029	0.029	0.029	
Oakland Bldg 1	ITE 8th Ed	**2.060**	**0.061**	**0.019**	**0.004**
Project Fraction of Truck Emis CalEEMod		**0.039**	**0.039**	**0.039**	
Project Fraction of Truck Emissions		**0.029**	**0.061**	**0.032**	
Project Fraction of Total Ops Emissions		**0.013**	**0.022**	**0.007**	
2012 EIR Truck Emissions		**72.10**	**1.00**	**0.60**	
2012 EIR Operational Emissions		**161.10**	**2.80**	**2.70**	

CalEEMod Emissions from Site Ref 2017

	NOx Car Only	NOx Truck Only	Total
Gateway	0.99	14.14	15.13
Port Area	1.03	13.40	14.43
			29.56

Used 5 mile truck trip length from EIR
CalEEMod 2016 Trip Gen based on ITE 150 9th edition

Trip Length Estimate

Distance to Waterfront	2.35
Distance to I880	0.5
Average Trip Length (50/50 split)	**1.425**

		All Trips	Truck Trips (20%)	Size (KSF)	Trips/KSF	Truck Trips/KSF
2012 EIR	CE1, CE2, CE3	1,417	283.4	443	3.1986456	0.312632322
	Entire Gateway	7,695				

OARB NOx Emission Analysis in Tons per Year for Transport Trucks and Passenger Vehicles Using Current Project Information

Prepared by Dave Mitchell, Mitchell Air Quality Consulting
May 11, 2021

	KSF[3]	Truck Trips (Daily)	Truck Trips/KSF[1]	Employees	Employee Trips	Emp Trips/KSF[1]	1st Op Yr Truck NOx[6]	1st Op Year Car NOx[6]	Total NOx	2024 Truck Only	2024 Car NOx	2024 Total NOx
PODS Storage Facility (CE-1) 2018[2]	256	60.0	0.234	20	40	0.156	0.85	0.01	**0.87**	0.76	0.01	**0.76**
Good Egg (CE2 2019 Half)	116	343.0	0.454	300	543		0.64	0.02	**0.66**	0.56	0.11	**0.68**
CE2 2020 Half	116	52.7	0.454		116	1.00	0.62	0.03	**0.65**	0.43	0.02	**0.45**
NCGW (CC-1) OGLC-3 2022[8]	189	143.0	0.757	100	200	0.76	0.39	0.04	**0.43**	0.34	0.03	**0.37**
NCGW (CC-1)	0	0.0	0		0	0.00	0.00	0.00	**0.00**	0.00	0.00	**0.00**
NCGW Con Global Container Storage[4]	3											
MH1 Bulk rail to Drayage Truck 2019[7]	100	45.4	0.454		100	1.00	0.57	0.03	**0.60**	0.37	0.02	**0.39**
CW-1 Bulk Terminal 2021	146	66.3	0.454		146	1.00	0.73	0.03	**0.77**	0.54	0.02	**0.56**
Total Prologis/CCIG	**926**	**710.3**			**1145**				**3.97**			**3.21**
Port Project												
Port 2019 Part 1	220	99.9	0.454		220	1.00	1.26	0.09	**1.35**	0.82	0.03	**0.85**
Port 2020 Part 2	220	99.9	0.454		220	1.00	1.18	0.05	**1.24**	0.82	0.03	**0.85**
Port 2023 Part 3	221	100.3	0.454		221	1.00	0.83	0.06	**0.89**	0.82	0.03	**0.85**
Port 2024 Part 4 (5 yr lease on existing)	221	100.3	0.454		221	1.00	0.82	0.05	**0.87**	0.82	0.03	**0.85**
Total Port OAB	**882**	**400.4**			**882**				**4.34**			**3.40**
Truck Parking 2020[5]	0	464.4			902		7.78	0.22	**8.00**	5.36	0.13	**5.49**
Truck Services 2020[5]	37	42.2			82		0.50	0.02	**0.52**	0.40	0.01	**0.42**
CWS 2020[5]	210	23.2			267		0.20	0.05	**0.24**	0.14	0.02	**0.16**
CASS 2020[5]	185	20.4			235		0.17	0.04	**0.21**	0.11	0.03	**0.14**
Total Truck Prkg & Recyclers @City's OAB		**550.2**			**1485**				**8.97**			**6.20**
Grand Total for Trucks and Passenger Vehicles		**1,661.0**			**3512**				**17.28**			**12.81**

Notes:

1. Based on ITE 10th edition trip rates for high-cube warehouses, transloading use.
2. Based on truck trip and employee data from PODS (tenant with 10-year lease) based on their operations at other sites
3. Based on Prologis actual development projections for warehouse sizes and typical leasing timing.
4. Conglobal container storage yard - truck trips are already at Port of Oakland, no new employee or trucks trips were modeled.
5. Based on 2012 Addendum trip generation numbers, not ITE rates.
6. Varies based on year building will begin operations
7. MH1 building is 100,000 SF out of 188,000 sf allowed
8. OGLC-3 provides freight services for trucks already accessing and working at the port. Analysis includes employee and onsite activities only.

Cumulative NOx Emissions in Tons per Year for Transport Trucks and Passenger Vehicles 2018 to 2024

Prepared by Dave Mitchell, Mitchell Air Quality Consulting May 11, 2021

	2018	2019	2020	2021	2022	2023	2024	2024	2012 EIR[1]	Red. need to LTS[2] in 2024	Red need to LTS[2] in 1st Op yr
CE-1 (Tenant: Pods)	0.87	0.85	0.83	0.82	0.80	0.78	0.76	0.76	0.59	0.18	0.28
CE-2 Part 1		0.66	0.66	0.66	0.84	0.76	0.68				
CE-2 Part 2			0.65	0.61	0.57	0.53	0.45	1.12	0.54	0.58	0.77
NCGW Part 1 (OGLC-3 Tenant Custom Goods)				0.49	0.46	0.43	0.36	0.41	0.66	-0.25	-0.20
NCGW Part 2 (no longer split in 2 parts)				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MH-1 Bulk Silicon Pellets		0.60	0.56	0.52	0.47	0.43	0.39	0.39	0.59	-0.20	0.02
CW-1 Bulk Terminal				0.77	0.72	0.67	0.56	0.56	0.39	0.17	0.37
Totals for Gateway Projects	**0.87**	**2.11**	**2.71**	**3.87**	**3.86**	**3.59**	**3.20**	**3.25**	**2.77**	**0.48**	**1.23**
Port Area Pt 1		1.35	1.25	1.15	1.05	0.95	0.85	0.85			
Port Area Pt 2			1.24	1.14	1.04	0.95	0.85	0.85			
Port Area Pt 3						0.89	0.85	0.85			
Port Area Pt 4							0.85	0.85			
Total Port Area		**1.35**	**2.48**	**2.29**	**2.09**	**2.78**	**3.40**	**3.4**	**3.46**	**-0.06**	**0.86**
Cumulative Total Logistics Projects	**0.87**	**3.45**	**5.19**	**6.15**	**5.95**	**6.37**	**6.61**	**6.65**	**6.23**	**0.42**	**2.10**
Threshold for LTS Logistics Projects	**6.24**	**6.24**	**6.24**	**6.24**	**6.24**	**6.24**	**6.24**				
Gateway Non-Logistics Projects											
Truck Services[5]			8.00	7.37	6.74	6.12	5.49	5.49	1.56	3.92	6.43
Truck Parking[5]			0.52	0.50	0.47	0.44	0.42	0.42	0.14	0.27	0.38
CWS[5]			0.24	0.22	0.20	0.18	0.16	0.16	0.10	0.05	0.14
CASS[5]			0.21	0.19	0.17	0.16	0.14	0.14	0.09	0.05	0.12
Total for Non-Logistics Proj			**8.97**	**8.28**	**7.59**	**6.89**	**6.20**	**6.20**	**1.90**	**5.61**	**7.07**
Threshold for Non-Logistics Proj			**1.9**	**1.9**	**1.9**	**1.9**	**1.9**				
Cumulative Total Gateway and Port	**0.87**	**3.45**	**14.16**	**14.43**	**13.53**	**13.27**	**12.81**	**12.85**	**8.13**	**6.03**	**9.16**
Threshold for Trucks and Cars	**8.14**	**8.14**	**8.14**	**8.14**	**8.14**	**8.14**	**8.14**				

Notes:

1.2012 EIR -Nox Emissions per Building calculated using 2012 Oakland Army Base Project Initial Study/Addendum

2. LTS = Less than Significant

Comparison of EMFAC 2017 Emission Factors for Specfic Model Years and Aggregated Fleets

		NOx Running Emissions (g/mile)	NOx Idling Emissions (g/veh/day)	NOx Starting Emission (g/trip)	
T7 Tractor Aggregated Model Years	2018	**5.90**	28.85	0.98	Average Emissions all Ages in 2018 Fleet
T7 Tractor Aggregated Model Years	2020	**4.58**	27.55	1.23	Average Emissions all Ages in 2020 Fleet
T7 Tractor Aggregated Model Years	2024	**2.02**	22.21	1.86	Average Emissions all Ages in 2024 Fleet
T7 Tractor 2007 Model Year Only	2007	**10.58**	30.46	0.00	Emissions from 2007 Model Year Trucks
T7 Tractor 2010 Model Year Only	2010	**7.61**	33.23	0.26	Emissions from 2010 Model Year Trucks

The average truck in 2018 is cleaner than trucks of the 2007 model year	0.44182925	**44.10%**
The average truck in 2018 is cleaner than trucks of the 2010 model year	0.17094232	**17.10%**

Emission factors from ARB EMFAC 2017 Web Database

Trip Generation Rates from SCAQMD for High Cube Warehouse (New ITE 10th Edition)

	Weighted Avg Daily Trips per KSF				
	All Veh.	**Cars**	**All Trucks**	**5 Axle+ Trucks**	**Trucks less than 5 axle**
Transload & Short Term Storage	1.432	1.000	0.454	0.233	0.221
Truck Services (Trips/Day)	1366	902	464.4	0.5132	0.4868
37,000 sf building area		24.37	12.55		

OGLC 3 Cold Storage Building

Project Information

Building Size (Sq Ft)	189,038	189.038 KSF		
	142.86			
			Trips/day	**Round Trips**
Port Drayage Trucks	60-70 Round Trips 5 days per week		140	70
Over the Road Non Drayage	45 loads/day 5 days per week		90	45
Refrigerated Trucks	40%			
Port trucks meet Clean Truck Standard				
Employees	1st Shift	2nd Shift		
	40 to 60	30 to 40		
Employee Commute Estimate	100/day			
Onsite Equipment				
Forklifts	10 6k Elec	2 12k Elec	1 35k Diesel	2 Diesel Yard Hostlers
Warehouse Cooling	Freon			
Distance to Nearest Receptor	2,300 Feet			

Expected 2022 Maritime Deliveries

Avg Daily Pos	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**	**Weekly**	**ADD**	**AADT**	**Fleet Fraction**	
Drayage	70	70	70	70	70	0	0	**350**	50.00	100.00	0.609	HHD Drayage POAK
T7 Tractor	45	45	45	45	45	0	0	**225**	32.14	64.29	0.391	HHD T7 Tractor
	115							**575**	**82.14**	164.29	1.000	

Employee Count	100	
Employee Trips/Day	2	
Trips/Weekday	200	
Days per Week	5	260 Days/Year
AADT	142.86	
Trips/KSF	0.756	
Trips per KSF Truck and Emp	1.62	

Fleet Mix for Single CalEEMod Run

	2022	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Default Fleet Mix Alameda County	Refrigerated W	0.560371	0.039285	0.190378	0.108244	0.016023	0.005202	0.023981	0.0452	0.002184	0.002561	0.005524	0.000326	0.000721
											0.002561	0.005524	0.000326	0.000721

	LDA	LDT1	LDT2	MDV	Total
Employee Passenger Vehicle Fleet Fraction	0.560371	0.039285	0.190378	0.108244	0.898278
Trips/Day	89.12	6.25	30.28	17.21	142.86
CalEEMod Fleet Mix Emp Only					

2012 Addendum Nox Emissions

	Miles/Trip	**Trips/day**	**Miles**	**G/Mi**	**g/day**	**g/lb**	**lbs/day**	**Ton/year**
Trucks	7.8	1438	11216.4	7.66	85917.624	453.592	189.416092	24.624092

lbs/day	189.4
g/mi	7.66
g/day	85,910
mi/day	11,215
Trips	1438
mi/trip	7.80

	Truck Fleet Mix for CalEEMod Run
	HHD
Truck ADT	164.29
Fleet Fraction for CalEEMod	1

	Passenger Vehicle Fleet Mix				
	LDA	LDT1	LDT2	MDV	
Default Leet Mix	0.560371	0.039285	0.190378	0.108244	0.898278
Employee Trips	89.12	6.25	30.28	17.21	142.86
Fleet Fraction	0.623828035	0.04373368	0.211936617	0.120501671	1

Idling Emissions Semis and Drayage T7 Trucks

	2022		Days/Year	Vehicle Type	Trucks/Day	Fuel	NOX (g/day/truck)	Nox (g/year)	NOx (lb/Year)	Nox (Tons/Year)	PM10 (g/day)	PM10 (g/year)	PM10 (lbs/year)	PM10 (Tons/year)
Idling Emissions Grams/Day Drayage			260	T7 Drayage	70	Diesel	43.28	787,747.87	1,736.68	0.8683	0.0145	264.45	0.5830	0.0003
Idling Emissions Grams/day OTR			260	T7 Tractor	45	Diesel	25.76	75,355.63	166.13	0.0831	0.0039	45.09	0.0994	0.0000
Idling per T7 Tractor vehicle per day (fraction)		0.25	Assumed 1/4 of daily idling occurs onsite for T7 Trucks					**863,103.50**	**1,902.82**	**0.9514**		**309.53**	**0.6824**	**0.0003**
Drayage Truck Idling 50% at Port 50% onsite		1												
convert grams to pounds		0.00220462												

	2022	Trucks/Day	Idling Min/Truck	Nox Emissios (g/yr)	Nox Emissions Lbs/Year	Nox Emissions Tons/Year	PM Emissions g/Year	PM Emissions lbs/year	PM Emissions Tons/Year	Nox Emission Reduction Idling (tons/yr)	
Compliance with ARB Idling Reg		115.00	5	863,103.50	1902.82	0.95	309.53	0.682	**0.0003**	0.52	Drayage
AQ Plan Measure		115	2	345,241.40	761.13	0.38	123.81	0.273	**0.0001**	0.05	T7
Emission Reduction					1141.69	0.57		0.41	**0.0002**	0.57	Total
Reduction Fraction					0.60			0.60			
convert grams to pounds		0.00220462									
Emission Factors from EMFAC 2017											

2022	Nox (tons/year)	PM (tons/year)	2022	Nox (tons/year)	PM (tons/year)
Drayage Truck Idling at Port	0.4342	0.0001	Drayage Truck Idling at OGLC-3	0.4342	0.0001
T7 Truck Idling at Port	0.0000	0.0000	T7 Truck Idling at OGLC-3	**0.0831**	0.0000
Total	**0.4342**	**0.0001**	**Total**	**0.5172**	0.0002

	Drayage (g/day)	Reduction	T7 (g/day)	Reduction
2024 Nox	30.98	0.28	22.21	0.78
2024 PM10	0.01	0.23	0.01	0.48

	2024		Days/Year	Vehicle Type	Trucks/Day	Fuel	NOX (g/day/truck)	Nox (g/year)	NOx (lb/Year)	Nox (Tons/Year)	PM10 (g/day)	PM10 (g/year)	PM10 (lbs/year)	PM10 (Tons/year)
Idling Emissions Grams/Day Drayage			260	T7 Drayage	**70**	**Diesel**	**30.9810**	563,854.85	1,243.09	0.6215	0.0112	203.07	0.4477	0.0002
Idling Emissions Grams/day OTR			260	T7 Tractor	**45**	**Diesel**	**22.2116**	64,968.92	143.23	0.0716	0.0080	93.59	0.2063	0.0001
Idling per T7 Tractor vehicle per day (fraction)		0.25	Assumed 1/4 of daily idling occurs onsite for T7 Trucks					**628,823.77**	**1,386.32**	**0.6932**		**296.66**	**0.6540**	**0.0003**
Drayage Truck Idling 100% onsite		1	50% drayage truck idling occurs onsite 50% at Port											
convert grams to pounds		0.00220462												

	2024	Trucks/Day	Idling Min/Truck	Idling Hrs/Yr	Nox Emissions (g/yr)	Nox Emissions Lbs/Year	Nox Emissions Tons/Year	PM Emissions g/Year	PM Emissions lbs/year	PM Emissions Tons/Year	Nox Emission Reduction Idling (tons/yr)	
Compliance with ARB Idling Reg		115	5	2491.67	628,823.77	1386.32	0.69	**296.6634**	0.654	**0.0003**	0.37	Drayage
AQ Plan Measure		115	2	996.67	251,529.51	554.53	0.28	118.67	0.262	**0.0001**	0.04	T7
Emission Reduction						831.79	0.42		0.39	**0.0002**	0.42	Total
Reduction Fraction						0.60			0.60			

	2024	Nox (tons/year)	PM (tons/year)
Drayage Truck Idling at Port		0.3108	0.0001
T7 Truck Idling at Port		0.0000	0.0000
Total		**0.3108**	**0.0001**

2024	Nox (tons/year)	PM (tons/year)
Drayage Truck Idling at OGLC-3	0.3108	0.0001
T7 Truck Idling at OGLC-3	**0.0716**	0.0001
Total	**0.3824**	0.0002

TRU Emissions Estimates

Diesel Semi Truck TRU Assumptions

			2015 MY	2020 MY
Average HP	36			
Average On Time	50%			
Load Factor (ARB Offroad TRU)	0.46			
ARB PM Standard with ATCM Compliance	0.02	g/bhp-hr		
ARB Nox Emission Factor for TRU 2010 MY	4.43	g/bhp-hr	3.08	2.7
Emission factors from ARB Offroad Emission Tool.				

CalEEMod Default Trip Length	7.3	miles
Average Speed over Travel Distance	30	MPH
Time required for 7.3 miles (hrs)	0.243	
ADT for HHDT 2022	164.29	
ADT for Trucks with TRUs (40%)	65.71	

On Road PM	PM (grams/day	PM (lbs/day)	PM lbs/year	PM (tons/year)
Semi TRU PM Emissions 2022	2.648	0.006	1.518	0.001

convert grams to pounds 0.00220462

PM Emission Calc Formula = HP*% Time Running*load factor*emission factor*hours/trip*avg daily Trips

On Road Nox	NOx (grams/day	NOx (lbs/day)	NOx lbs/year	NOx (tons/year)
Semi TRU NOx Emissions 2022	586.537	1.293	336.204	0.168

TRU Onsite Emissions

	2022	Trucks	Trucks w/TRU	TRU Op Time Per Load	Truck Time at Loading Dock (hours/day)	Total TRU Op Time (hrs/day)
HDT Trucks Per Day		115	46	0.5	1	23.00

40% of HDT trucks have TRUs

One hour parked at loading dock per truck
50% TRU Operating Time

PM Emission Calc Formula = HP*% Time Running*load factor*emission factor*hours/trip*avg daily Trips

On Site PM	**PM (grams/day**	**PM (lbs/day)**	**PM lbs/year**	**PM (tons/year)**
Semi TRU PM Emissions 2022 Unmitigated	3.809	0.008	2.183	0.001
Semi TRU PM Emissions 2022 Mitigated	1.524	0.003	0.873	0.000
convert grams to pounds	0.00220462			
TRUs with plug in capability can plug in at loading dock				

On Site Nox	**NOx (grams/day**	**NOx (lbs/day)**	**NOx lbs/year**	**NOx (tons/year)**
Semi TRU Nox Emissions 2022 Unmitigated	843.649	1.860	483.581	0.242
Semi TRU Nox Emissions 2022 Mitigated	337.460	0.744	193.432	0.097

Phase in schedule for TRUs meeting the ARB TRU ATCM

Table II-3: >25 HP TRU and TRU Gen Set Engines
Proposed In-Use Compliance Dates for In-Use Standards

Engine MY	In-Use Compliance Year'													
	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
'01 & Older		L	L	L	L	L	L	L	U	U	U	U	U	U
'02			L	L	L	L	L	L	L	U	U	U	U	U
'03				U or L	U or L	U or L	U or L	U or L	U or L	U or L	U	U	U	U
'04					U	U	U	U	U	U	U	U	U	U
'05						U	U	U	U	U	U	U	U	U
'06							U	U	U	U	U	U	U	U
'07								U	U	U	U	U	U	U
'08									U	U	U	U	U	U
'09										U	U	U	U	U
'10'											U	U	U	U
'11												U	U	U
'12													U	U
'13														U

ARB Initial Statement of Reasons for TRU ATCM 2010
U = Ultralow Emissions Standard of 0.02 g/bhp-hr

TRU Emissions Summary

2022 Emissions	**PM (lbs/year)**	**PM (tons/year)**	**NOx (lbs/year)**	**NOx (tons/year)**
On Road Use Semis	1.518	0.001	336.2	0.168
On Site Use Semis	0.873	0.000	483.6	0.242
Total On Road and On Site 2022	**2.391**	**0.001**	**819.8**	**0.410**

TRU Onsite Mitigation with Electric Plug Ins

	2022
Semi TRUs with Plug-In Capability	60%
Semi Trucks with TRUs	40%
Semi Trucks per Day 2022	115
Semi Trucks with TRUs	46
Semi Trucks with Plug In TRUs	27.6
Percent Reduction from Plug In	60%

Onsite TRU Emission Reductions

	PM lbs/year Unmitigated	PM lbs/year Mitigated	PM tons/year Mitigated	NOx lbs/year Unmitigated	NOx lbs/year Mitigated	Nox tons/year Mitigated
2022 Semi Trucks	2.183	0.87	0.0004	483.6	193.43	0.0967
Emission Reduction		1.31	0.0007		290.15	0.1451

Yard Truck (Hostler) Emissions	**Emission Rates g/bhp-hr**		
ARB Offroad Emission Factors	**2010**	**2015**	**2020**
Nox	2.66	0.64	0.12
PM	0.1	0.03	0.01
Total Hydrocarbon (THC)	0.17	0.08	0.06
Load Factor	0.39		

Emission Calculations

	Trucks	Hours/Year	Load Factor	Horsepower	Nox (g/year)	PM (g/year)	THC (g/year)
2015 Yard Hostler Emissions	2	500	0.39	200	49920	2340	6240
					Nox (lbs/year)	**PM (lbs/year)**	**THC (lbs/year)**
					110.0546	5.1588	13.7568
					Nox (tons/year)	**PM (tons/year)**	**(tons/year)**
					0.0550	0.0026	0.0069

convert grams to pounds 0.00220462
Estimated 2 hours/day of operation for each Hostler
Emission factors from ARB's Offroad Emission Calculator Tool

Diesel Forklift Emissions

Forklift with 35,000 lb lift capacity
Example Equipment: CAT DP 160N1 Diesel Forkift 16,000kg (35,274 lb) Capacity
129 kW (172 HP)

Offroad Emission Factors for Forklifts

	ROG	Nox	PM10	PM2.5
Emission Factor g/bhp-hr 121-175 HP	0.14	0.5	0.02	0.02
HP	172			
Load Factor	0.2			
Hours of Operation/Day	7			
Days/Year	260			
Convert g/lbs	0.00220462			

Emission factors are from the CalEEMod 2016.3.2 User Guide Appendix E

Forklift Emissions Results	**ROG**	**Nox**	**PM10**	**PM2.5**
Emissions (pounds per day)	0.0743	0.2654	0.0106	0.0106
Emissions (pounds/year)	19.3238	69.0134	2.7605	2.7605
Emissions (tons/year)	0.0097	0.0345	0.0014	0.0014

Total Forklift and Hostler Emissions	**ROG**	**Nox**	**PM10**	**PM2.5**
Emissions (tons/year)	0.0165	0.0895	0.0040	0.0040
Emissions (pounds/year	33.0806	179.0681	7.9193	7.9193

Onsite Emission Summary

Onsite Emissions 2022 Unmitigated			Tons/Year	
	ROG	NOX	PM10	PM2.5
POAK Drayage Trucks Idling	0.0000	0.4342	0.0001	0.0001
T7 Tractor Idling	0.0000	0.0831	0.0000	0.0000
TRU Ops Onsite	0.0000	0.2418	0.0004	0.0004
Yard Hostlers and Forklift	0.0165	0.0895	0.0040	0.0040
Employee Commute	0.0283	0.0401	0.1535	0.0414
Total Onsite Emissions	**0.0448**	**0.8887**	**0.1581**	**0.0460**

Onsite Emissions 2022 Mitigated			Tons/Year	
	ROG	NOX	PM10	PM2.5
POAK Drayage Trucks Idling	0.0000	0.1737	0.0001	0.0001
T7 Tractor Idling	0.0000	0.0332	0.0000	0.0000
TRU Ops Onsite	0.0000	0.0967	0.0002	0.0002
Yard Hostlers and Forklift	0.0165	0.0895	0.0040	0.0040
Employee Commute	0.0283	0.0401	0.1535	0.0414
Total Onsite Emissions	**0.0448**	**0.4332**	**0.1577**	**0.0456**

Onsite Emissions 2024 Unmitigated			Tons/Year	
	ROG	NOX	PM10	PM2.5
POAK Drayage Trucks Idling	0.0000	0.3108	0.0001	0.0001
T7 Tractor Idling	0.0000	0.0716	0.0001	0.0001
TRU Ops Onsite	0.0000	0.2418	0.0004	0.0004
Yard Hostlers and Forklift	0.0165	0.0895	0.0040	0.0040
Employee Commute	0.0240	0.0325	0.1534	0.0414
Total Onsite Emissions	**0.0405**	**0.7462**	**0.1580**	**0.0460**

Onsite Emissions 2024 Mitigated			Tons/Year	
	ROG	NOX	PM10	PM2.5
POAK Drayage Trucks Idling	0.0000	0.1243	0.0000	0.0000
T7 Tractor Idling	0.0000	0.0286	0.0000	0.0000
TRU Ops Onsite	0.0000	0.0967	0.0002	0.0002
Yard Hostlers and Forklift	0.0165	0.0895	0.0040	0.0040
Employee Commute	0.0240	0.0325	0.1534	0.0414
Total Onsite Emissions	**0.0405**	**0.3717**	**0.1576**	**0.0456**

OGLC-3 Criteria Pollutant Modeling Results

Unmitigated Existing Plus Project

2022		Tons/Year		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks	0.03	1.91	0.01	0.00
T7 Tractor Trucks	0.05	1.37	0.09	0.03
TRU	0.00	0.76	0.00	0.00
Yard Hostlers and Forklift	0.02	0.23	0.01	0.01
Employee Commute	0.03	0.04	0.15	0.04
Total	**0.13**	**4.30**	**0.27**	**0.09**

Note: PM2.5 and PM10 results inlcude fugitive dust

Mitigated Existing Plus Project

2022		Tons/Year		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks	0.03	1.39	0.01	0.00
T7 Tractor Trucks	0.05	1.32	0.09	0.03
TRU	0.00	0.61	0.00	0.00
Yard Hostlers and Forklift	0.02	0.23	0.01	0.01
Employee Commute	0.03	0.04	0.15	0.04
Total	**0.13**	**3.58**	**0.27**	**0.09**

Idling Mitigation Measure to Reduce idling from 5 to 2 min 60%

Nox Emission Reduction Idling (tons/yr)		**TRU Nox Reduction (tons/yr)**	**TRU PM10 Reduction**
0.52	Drayage	0.15	0.000655
0.05	T7		
0.57	Total		

Unmitigated Existing Plus Project

2024		Tons/Year		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks	0.02	1.40	0.01	0.00
T7 Tractor Trucks	0.04	1.07	0.09	0.03
TRU	0.00	0.76	0.00	0.00
Yard Hostlers and Forklift	0.02	0.23	0.01	0.01
Employee Commute	0.02	0.03	0.15	0.04
Total	**0.10**	**3.48**	**0.27**	**0.09**

Note: PM2.5 and PM10 results inlcude fugitive dust

Mitigated Existing Plus Project

2024		Tons/Year		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks	0.02	1.02	0.01	0.00
T7 Tractor Trucks	0.04	0.90	0.09	0.03
TRU	0.00	0.61	0.00	0.00
Yard Hostlers and Forklift	0.02	0.23	0.01	0.01
Employee Commute	0.02	0.03	0.15	0.04
Total	**0.10**	**2.79**	**0.27**	**0.09**

Nox Emission Reduction Idling (tons/yr)		**TRU Nox Reduction (tons/yr)**	**TRU PM10 Reduction**
0.37	Drayage	0.15	0.000655
0.17	T7		
0.54	Total		

Project Onsite Emissions

Unmitigated

	2022	**Tons/Year**		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks Idling	0.00	0.43	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.08	0.00	0.00
TRU Onsite	0.00	0.24	0.00	0.00
Yard Hostlers and Forklift	0.02	0.09	0.00	0.00
Employee Commute	0.03	0.04	0.15	0.04
Total	**0.04**	**0.89**	**0.16**	**0.05**

Note: PM2.5 and PM10 results inlcude fugitive dust

Mitigated

	2022	**Tons/Year**		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks Idling	0.00	0.17	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.03	0.00	0.00
TRU Onsite	0.00	0.10	0.00	0.00
Yard Hostlers and Forklift	0.02	0.09	0.00	0.00
Employee Commute	0.03	0.04	0.15	0.04
Total	**0.04**	**0.43**	**0.16**	**0.05**

Idling Mitigation Measure to Reduce idling from 5 to 2 min 60%

Project Onsite Emissions

Unmitigated

	2024	**Tons/Year**		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks Idling	0.00	0.31	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.07	0.00	0.00
TRU Onsite	0.00	0.24	0.00	0.00
Yard Hostlers and Forklift	0.02	0.09	0.00	0.00
Employee Commute	0.02	0.03	0.15	0.04
Total	**0.04**	**0.75**	**0.16**	**0.05**

Mitigated

	2024	**Tons/Year**		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks Idling	0.00	0.12	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.03	0.00	0.00
TRU Onsite	0.00	0.10	0.00	0.00
Yard Hostlers and Forklift	0.02	0.09	0.00	0.00
Employee Commute	0.02	0.03	0.15	0.04
Total	**0.04**	**0.37**	**0.16**	**0.05**

OGLC Bldg 3 Employee Travel

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Operations Only

Construction Phase -

Off-road Equipment - Ops only.

Vehicle Trips - 142.86 100 employees 5 days per week

Fleet Mix - Employee passenger vehicles and light trucks only.

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.56	0.62
tblFleetMix	LDT1	0.04	0.04
tblFleetMix	LDT2	0.19	0.21
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.2020e-003	0.00
tblFleetMix	MCY	5.5240e-003	0.00
tblFleetMix	MDV	0.11	0.12
tblFleetMix	MH	7.2100e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.1840e-003	0.00
tblFleetMix	SBUS	3.2600e-004	0.00
tblFleetMix	UBUS	2.5610e-003	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	1.68	142.86
tblVehicleTrips	SU_TR	1.68	142.86
tblVehicleTrips	WD_TR	1.68	142.86

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**5.2100e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**5.2100e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0283	0.0401	0.4173	1.4400e-003	0.1525	9.7000e-004	0.1535	0.0405	8.9000e-004	0.0414	0.0000	130.6364	130.6364	2.7700e-003	0.0000	130.7057
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0328**	**0.0410**	**0.4181**	**1.4500e-003**	**0.1525**	**1.0400e-003**	**0.1535**	**0.0405**	**9.6000e-004**	**0.0415**	**0.2642**	**138.8769**	**139.1411**	**0.0219**	**2.6000e-004**	**139.7678**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0283	0.0401	0.4173	1.4400e-003	0.1525	9.7000e-004	0.1535	0.0405	8.9000e-004	0.0414	0.0000	130.6364	130.6364	2.7700e-003	0.0000	130.7057
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0328**	**0.0410**	**0.4181**	**1.4500e-003**	**0.1525**	**1.0400e-003**	**0.1535**	**0.0405**	**9.6000e-004**	**0.0415**	**0.2642**	**138.8769**	**139.1411**	**0.0219**	**2.6000e-004**	**139.7678**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	10/21/2021	10/27/2021	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.2100e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.2100e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0283	0.0401	0.4173	1.4400e-003	0.1525	9.7000e-004	0.1535	0.0405	8.9000e-004	0.0414	0.0000	130.6364	130.6364	2.7700e-003	0.0000	130.7057
Unmitigated	0.0283	0.0401	0.4173	1.4400e-003	0.1525	9.7000e-004	0.1535	0.0405	8.9000e-004	0.0414	0.0000	130.6364	130.6364	2.7700e-003	0.0000	130.7057

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	142.86	142.86	142.86	417,081	417,081
Total	142.86	142.86	142.86	417,081	417,081

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.623830	0.043730	0.211937	0.121194	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
NaturalGas Mitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
NaturalGas Unmitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4374	7.5500e-003	1.8000e-004	0.6802
Unmitigated	0.4374	7.5500e-003	1.8000e-004	0.6802

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

OGLC Bldg 3 Employee Travel

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Operations Only

Construction Phase -

Off-road Equipment - Ops only.

Vehicle Trips - 142.86 100 employees 5 days per week

Fleet Mix - Employee passenger vehicles and light trucks only.

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.56	0.62
tblFleetMix	LDT1	0.04	0.04
tblFleetMix	LDT2	0.19	0.21
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	5.1570e-003	0.00
tblFleetMix	MCY	5.4600e-003	0.00
tblFleetMix	MDV	0.11	0.12
tblFleetMix	MH	6.9000e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.2210e-003	0.00
tblFleetMix	SBUS	3.4300e-004	0.00
tblFleetMix	UBUS	2.3580e-003	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblVehicleTrips	ST_TR	1.68	142.86
tblVehicleTrips	SU_TR	1.68	142.86
tblVehicleTrips	WD_TR	1.68	142.86

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**5.2100e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.2100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**5.2100e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0240	0.0325	0.3551	1.3300e-003	0.1525	9.4000e-004	0.1534	0.0405	8.6000e-004	0.0414	0.0000	120.6716	120.6716	2.2400e-003	0.0000	120.7276
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0285**	**0.0334**	**0.3558**	**1.3400e-003**	**0.1525**	**1.0100e-003**	**0.1535**	**0.0405**	**9.3000e-004**	**0.0415**	**0.2642**	**128.9120**	**129.1762**	**0.0214**	**2.6000e-004**	**129.7898**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0240	0.0325	0.3551	1.3300e-003	0.1525	9.4000e-004	0.1534	0.0405	8.6000e-004	0.0414	0.0000	120.6716	120.6716	2.2400e-003	0.0000	120.7276
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0285**	**0.0334**	**0.3558**	**1.3400e-003**	**0.1525**	**1.0100e-003**	**0.1535**	**0.0405**	**9.3000e-004**	**0.0415**	**0.2642**	**128.9120**	**129.1762**	**0.0214**	**2.6000e-004**	**129.7898**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	10/21/2021	10/27/2021	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

<u>Trips and VMT</u>

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.2100e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.2100e-003**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0240	0.0325	0.3551	1.3300e-003	0.1525	9.4000e-004	0.1534	0.0405	8.6000e-004	0.0414	0.0000	120.6716	120.6716	2.2400e-003	0.0000	120.7276
Unmitigated	0.0240	0.0325	0.3551	1.3300e-003	0.1525	9.4000e-004	0.1534	0.0405	8.6000e-004	0.0414	0.0000	120.6716	120.6716	2.2400e-003	0.0000	120.7276

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	142.86	142.86	142.86	417,081	417,081
Total	142.86	142.86	142.86	417,081	417,081

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.623830	0.043730	0.211937	0.121194	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
NaturalGas Mitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
NaturalGas Unmitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4374	7.5500e-003	1.8000e-004	0.6802
Unmitigated	0.4374	7.5500e-003	1.8000e-004	0.6802

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

OGLC 3 Drayage Trucks 2022

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Truck only run

Construction Phase -

Vehicle Trips - 70 trucks/140 trips per day for Port Drayage

Fleet Mix - Drayage Truck Only

Vehicle Emission Factors - EMFAC 2017 Emission Factors for NOx, PM10, and PM2.5

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.05	1.00
tblFleetMix	LDA	0.56	0.00

OGLC 3 Drayage Trucks 2022 - Alameda County, Annual

tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.19	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.2020e-003	0.00
tblFleetMix	MCY	5.5240e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	7.2100e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.1840e-003	0.00
tblFleetMix	SBUS	3.2600e-004	0.00
tblFleetMix	UBUS	2.5610e-003	0.00
tblVehicleEF	HHD	20.78	43.28
tblVehicleEF	HHD	3.57	6.40
tblVehicleEF	HHD	20.10	1.14
tblVehicleEF	HHD	0.02	0.01
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.02	0.04
tblVehicleEF	HHD	5.1000e-005	0.00
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8950e-003	9.0000e-003
tblVehicleEF	HHD	0.01	0.04
tblVehicleEF	HHD	4.7000e-005	0.00
tblVehicleTrips	CC_TL	7.30	0.50
tblVehicleTrips	CNW_TL	7.30	0.50
tblVehicleTrips	CW_TL	9.50	0.50

tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	140.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.7600e-003	3.8200e-003	4.5400e-003	1.0000e-005	0.0000	2.4000e-004	2.4000e-004	0.0000	2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.7600e-003	3.8200e-003	4.5400e-003	1.0000e-005	0.0000	2.4000e-004	2.4000e-004	0.0000	2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0316	1.9085	0.2023	2.1800e-003	7.7200e-003	1.3200e-003	9.0400e-003	2.1200e-003	1.2600e-003	3.3900e-003	0.0000	210.0700	210.0700	0.0353	0.0000	210.9516
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0361**	**1.9094**	**0.2030**	**2.1900e-003**	**7.7200e-003**	**1.3900e-003**	**9.1100e-003**	**2.1200e-003**	**1.3300e-003**	**3.4600e-003**	**0.2642**	**218.3104**	**218.5746**	**0.0544**	**2.6000e-004**	**220.0137**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0316	1.9085	0.2023	2.1800e-003	7.7200e-003	1.3200e-003	9.0400e-003	2.1200e-003	1.2600e-003	3.3900e-003	0.0000	210.0700	210.0700	0.0353	0.0000	210.9516
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0361**	**1.9094**	**0.2030**	**2.1900e-003**	**7.7200e-003**	**1.3900e-003**	**9.1100e-003**	**2.1200e-003**	**1.3300e-003**	**3.4600e-003**	**0.2642**	**218.3104**	**218.5746**	**0.0544**	**2.6000e-004**	**220.0137**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	10/21/2021	10/27/2021	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0316	1.9085	0.2023	2.1800e-003	7.7200e-003	1.3200e-003	9.0400e-003	2.1200e-003	1.2600e-003	3.3900e-003	0.0000	210.0700	210.0700	0.0353	0.0000	210.9516
Unmitigated	0.0316	1.9085	0.2023	2.1800e-003	7.7200e-003	1.3200e-003	9.0400e-003	2.1200e-003	1.2600e-003	3.3900e-003	0.0000	210.0700	210.0700	0.0353	0.0000	210.9516

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	140.00	0.00	0.00	18,200	18,200
Total	140.00	0.00	0.00	18,200	18,200

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	0.50	0.50	0.50	59.00	0.00	41.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
NaturalGas Mitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
NaturalGas Unmitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4374	7.5500e-003	1.8000e-004	0.6802
Unmitigated	0.4374	7.5500e-003	1.8000e-004	0.6802

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

OGLC 3 Drayage Trucks 2022

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Truck only run

Construction Phase -

Vehicle Trips - 70 trucks/140 trips per day for Port Drayage

Vehicle Emission Factors - EMFAC 2017 Emission Factors for NOx, PM10, and PM2.5

Fleet Mix - Drayage Truck Only

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.05	1.00
tblFleetMix	LDA	0.56	0.00

tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.19	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	5.1570e-003	0.00
tblFleetMix	MCY	5.4600e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	6.9000e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.2210e-003	0.00
tblFleetMix	SBUS	3.4300e-004	0.00
tblFleetMix	UBUS	2.3580e-003	0.00
tblVehicleEF	HHD	14.17	30.98
tblVehicleEF	HHD	1.99	4.16
tblVehicleEF	HHD	20.08	1.76
tblVehicleEF	HHD	5.8810e-003	0.01
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	6.0910e-003	0.02
tblVehicleEF	HHD	5.1000e-005	0.00
tblVehicleEF	HHD	5.6260e-003	0.01
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8990e-003	9.0000e-003
tblVehicleEF	HHD	5.8270e-003	0.02
tblVehicleEF	HHD	4.7000e-005	0.00
tblVehicleTrips	CC_TL	7.30	0.50
tblVehicleTrips	CNW_TL	7.30	0.50
tblVehicleTrips	CW_TL	9.50	0.50

tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	140.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.7600e-003	3.8200e-003	4.5400e-003	1.0000e-005	0.0000	2.4000e-004	2.4000e-004	0.0000	2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.7600e-003	3.8200e-003	4.5400e-003	1.0000e-005	0.0000	2.4000e-004	2.4000e-004	0.0000	2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0210	1.3957	0.1615	2.0600e-003	7.7200e-003	7.9000e-004	8.5000e-003	2.1200e-003	7.5000e-004	2.8800e-003	0.0000	198.5925	198.5925	0.0257	0.0000	199.2361
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0256**	**1.3966**	**0.1622**	**2.0700e-003**	**7.7200e-003**	**8.6000e-004**	**8.5700e-003**	**2.1200e-003**	**8.2000e-004**	**2.9500e-003**	**0.2642**	**206.8330**	**207.0971**	**0.0449**	**2.6000e-004**	**208.2982**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0210	1.3957	0.1615	2.0600e-003	7.7200e-003	7.9000e-004	8.5000e-003	2.1200e-003	7.5000e-004	2.8800e-003	0.0000	198.5925	198.5925	0.0257	0.0000	199.2361
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0256**	**1.3966**	**0.1622**	**2.0700e-003**	**7.7200e-003**	**8.6000e-004**	**8.5700e-003**	**2.1200e-003**	**8.2000e-004**	**2.9500e-003**	**0.2642**	**206.8330**	**207.0971**	**0.0449**	**2.6000e-004**	**208.2982**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	10/21/2021	10/27/2021	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0210	1.3957	0.1615	2.0600e-003	7.7200e-003	7.9000e-004	8.5000e-003	2.1200e-003	7.5000e-004	2.8800e-003	0.0000	198.5925	198.5925	0.0257	0.0000	199.2361
Unmitigated	0.0210	1.3957	0.1615	2.0600e-003	7.7200e-003	7.9000e-004	8.5000e-003	2.1200e-003	7.5000e-004	2.8800e-003	0.0000	198.5925	198.5925	0.0257	0.0000	199.2361

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	140.00	0.00	0.00	18,200	18,200
Total	140.00	0.00	0.00	18,200	18,200

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	0.50	0.50	0.50	59.00	0.00	41.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
NaturalGas Mitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
NaturalGas Unmitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4374	7.5500e-003	1.8000e-004	0.6802
Unmitigated	0.4374	7.5500e-003	1.8000e-004	0.6802

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

OGLC 3 T7 Tractor Trucks 2022

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 63

Climate Zone 5 **Operational Year** 2022

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 641.35 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Truck only run

Construction Phase -

Vehicle Trips - 45 trucks/90 trips per day for T7 Tractors

Vehicle Emission Factors - EMFAC 2017 Emission Factors for NOx, PM10, and PM2.5

Fleet Mix - Drayage Truck Only

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.05	1.00
tblFleetMix	LDA	0.56	0.00

tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.19	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.2020e-003	0.00
tblFleetMix	MCY	5.5240e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	7.2100e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.1840e-003	0.00
tblFleetMix	SBUS	3.2600e-004	0.00
tblFleetMix	UBUS	2.5610e-003	0.00
tblVehicleEF	HHD	20.78	25.76
tblVehicleEF	HHD	3.57	2.99
tblVehicleEF	HHD	20.10	1.56
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.02	0.04
tblVehicleEF	HHD	5.1000e-005	0.00
tblVehicleEF	HHD	0.01	0.01
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8950e-003	9.0000e-003
tblVehicleEF	HHD	0.01	0.04
tblVehicleEF	HHD	4.7000e-005	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00

tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	90.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.7600e-003	3.8200e-003	4.5400e-003	1.0000e-005	0.0000	2.4000e-004	2.4000e-004	0.0000	2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.7600e-003	3.8200e-003	4.5400e-003	1.0000e-005	0.0000	2.4000e-004	2.4000e-004	0.0000	2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0484	1.3654	0.3118	4.5500e-003	0.0853	9.2900e-003	0.0946	0.0235	8.8900e-003	0.0324	0.0000	439.4675	439.4675	0.0309	0.0000	440.2391
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0529**	**1.3663**	**0.3126**	**4.5600e-003**	**0.0853**	**9.3600e-003**	**0.0947**	**0.0235**	**8.9600e-003**	**0.0324**	**0.2642**	**447.7080**	**447.9722**	**0.0500**	**2.6000e-004**	**449.3012**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0484	1.3654	0.3118	4.5500e-003	0.0853	9.2900e-003	0.0946	0.0235	8.8900e-003	0.0324	0.0000	439.4675	439.4675	0.0309	0.0000	440.2391
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0529**	**1.3663**	**0.3126**	**4.5600e-003**	**0.0853**	**9.3600e-003**	**0.0947**	**0.0235**	**8.9600e-003**	**0.0324**	**0.2642**	**447.7080**	**447.9722**	**0.0500**	**2.6000e-004**	**449.3012**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	10/21/2021	10/27/2021	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0484	1.3654	0.3118	4.5500e-003	0.0853	9.2900e-003	0.0946	0.0235	8.8900e-003	0.0324	0.0000	439.4675	439.4675	0.0309	0.0000	440.2391
Unmitigated	0.0484	1.3654	0.3118	4.5500e-003	0.0853	9.2900e-003	0.0946	0.0235	8.8900e-003	0.0324	0.0000	439.4675	439.4675	0.0309	0.0000	440.2391

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	90.00	0.00	0.00	201,193	201,193
Total	90.00	0.00	0.00	201,193	201,193

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
NaturalGas Mitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
NaturalGas Unmitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

6.0 Area Detail

6.1 Mitigation Measures Area

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4374	7.5500e-003	1.8000e-004	0.6802
Unmitigated	0.4374	7.5500e-003	1.8000e-004	0.6802

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

OGLC 3 T7 Tractor Trucks 2024

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2024
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Truck only run

Construction Phase -

Vehicle Trips - 45 trucks/90 trips per day for T7 Tractors

Vehicle Emission Factors - EMFAC 2017 Emission Factors for NOx, PM10, and PM2.5

Fleet Mix - T70 Truck Only

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.05	1.00
tblFleetMix	LDA	0.56	0.00

tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.19	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	5.1570e-003	0.00
tblFleetMix	MCY	5.4600e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	6.9000e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.2210e-003	0.00
tblFleetMix	SBUS	3.4300e-004	0.00
tblFleetMix	UBUS	2.3580e-003	0.00
tblVehicleEF	HHD	14.17	22.21
tblVehicleEF	HHD	1.99	2.02
tblVehicleEF	HHD	20.08	1.86
tblVehicleEF	HHD	5.8810e-003	7.9990e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	6.0910e-003	0.03
tblVehicleEF	HHD	5.1000e-005	0.00
tblVehicleEF	HHD	5.6260e-003	7.6530e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8990e-003	9.0000e-003
tblVehicleEF	HHD	5.8270e-003	0.03
tblVehicleEF	HHD	4.7000e-005	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00

tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	90.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.7600e-003	3.8200e-003	4.5400e-003	1.0000e-005	0.0000	2.4000e-004	2.4000e-004	0.0000	2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	5.7600e-003	3.8200e-003	4.5400e-003	1.0000e-005	0.0000	2.4000e-004	2.4000e-004	0.0000	2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0322	1.0682	0.2672	4.3300e-003	0.0853	6.4900e-003	0.0918	0.0235	6.2100e-003	0.0297	0.0000	418.7850	418.7850	0.0245	0.0000	419.3964
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0367**	**1.0691**	**0.2679**	**4.3400e-003**	**0.0853**	**6.5600e-003**	**0.0919**	**0.0235**	**6.2800e-003**	**0.0298**	**0.2642**	**427.0255**	**427.2896**	**0.0436**	**2.6000e-004**	**428.4586**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	7.8764	7.8764	3.3000e-004	8.0000e-005	7.9092
Mobile	0.0322	1.0682	0.2672	4.3300e-003	0.0853	6.4900e-003	0.0918	0.0235	6.2100e-003	0.0297	0.0000	418.7850	418.7850	0.0245	0.0000	419.3964
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.3640	0.4374	7.5500e-003	1.8000e-004	0.6802
Total	**0.0367**	**1.0691**	**0.2679**	**4.3400e-003**	**0.0853**	**6.5600e-003**	**0.0919**	**0.0235**	**6.2800e-003**	**0.0298**	**0.2642**	**427.0255**	**427.2896**	**0.0436**	**2.6000e-004**	**428.4586**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	10/21/2021	10/27/2021	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

<u>Trips and VMT</u>

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2021

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.5000e-004	3.8200e-003	4.5400e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7600e-003**	**3.8200e-003**	**4.5400e-003**	**1.0000e-005**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0322	1.0682	0.2672	4.3300e-003	0.0853	6.4900e-003	0.0918	0.0235	6.2100e-003	0.0297	0.0000	418.7850	418.7850	0.0245	0.0000	419.3964
Unmitigated	0.0322	1.0682	0.2672	4.3300e-003	0.0853	6.4900e-003	0.0918	0.0235	6.2100e-003	0.0297	0.0000	418.7850	418.7850	0.0245	0.0000	419.3964

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	90.00	0.00	0.00	201,193	201,193
Total	90.00	0.00	0.00	201,193	201,193

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.9324	6.9324	3.1000e-004	6.0000e-005	6.9596
NaturalGas Mitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
NaturalGas Unmitigated	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17690	1.0000e-004	8.7000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9440	0.9440	2.0000e-005	2.0000e-005	0.9496
Total		**1.0000e-004**	**8.7000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9440**	**0.9440**	**2.0000e-005**	**2.0000e-005**	**0.9496**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23830	6.9324	3.1000e-004	6.0000e-005	6.9596
Total		**6.9324**	**3.1000e-004**	**6.0000e-005**	**6.9596**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4374	7.5500e-003	1.8000e-004	0.6802
Unmitigated	0.4374	7.5500e-003	1.8000e-004	0.6802

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.4374	7.5500e-003	1.8000e-004	0.6802
Total		**0.4374**	**7.5500e-003**	**1.8000e-004**	**0.6802**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

Gavin Newsom, Governor
Jared Blumenfeld, CalEPA Secretary
Liane M. Randolph, Chair

July 14, 2021

Corey Alvin
Environmental Coordinator
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Dear Corey Alvin:

Thank you for providing the California Air Resources Board (CARB) with the opportunity to comment on the Air Quality Plan (Plan) for the operations of the Custom Goods Facility (Project) located in the City of Oakland (City). The Project consists of the operation of a 189,038 square foot warehouse facility located within an area designated as CC-1or New Central Gateway Parcel in the former Oakland Army Base (OAB). The Plan is required as part of the 2013 approved Standard Conditions of Approval/Mitigation Monitoring and Reporting Program (SCA/MMRP) prepared for the 2012 OAB Redevelopment Initial Study Addendum (IS/Addendum). The SCA/MMRP was adopted by the City to mitigate the significant health and air quality impacts in the West Oakland Community and the impacts to regional air quality resulting from the redevelopment of the former OAB.

Prologis is the lessee of the 58 acre Project site for the next 66 years. The 189,038 square foot warehouse facility will be leased solely to Custom Goods, who will operate the site as a Unite States Customs and Border Protection Centralized Examination Station. Tenant Improvements inside the building will include roughly 3,000 square feet of administrative offices, 11,000 square feet of secure U.S. Customs offices with accessory inspection areas, approximately 40,000 square feet of cold dock and refrigerated warehouse space for cold chain inspections, and a remainder of space to be used as dry cargo hold or inspection areas. Once fully operational, the Project is anticipated to add 307 daily vehicle trips, including 140 daily diesel-powered drayage trucks and 90 diesel-powered over the road heavy-duty trucks, along local roadways. Approximately 46 of the trucks serving the Project are anticipated to be equipped with 34 horsepower (hp) transportation refrigeration units (TRU). The Project also includes the operation of two diesel-powered yard hostlers and one diesel-powered forklift.

Freight facilities, like the described in the Plan, can result in high volumes of heavy-duty diesel trucks, and operation of on-site equipment (e.g., forklifts and yard tractors) that emit toxic diesel emissions, and contribute to regional air pollution and global climate change.[1]

1 With regard to greenhouse gas emissions from this project, CARB has been clear that local governments and project proponents have a responsibility to properly mitigate these impacts. CARB's guidance, set out in detail

Governor Gavin Newsom signed Executive Order N-79-20 on September 23, 2020. The executive order states: "It shall be a goal of the State that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. It shall be a further goal of the State that 100 percent of medium and heavy-duty vehicles in the State be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks. It shall be further a goal of the State to transition to 100 percent zero emission off-road vehicles and equipment by 2035 where feasible." The executive order further directs the development of regulations to help meet these goals. To ensure that lead agencies, like the City, stay in step with evolving scientific knowledge to protect public health from adverse air quality and greenhouse gas impacts from the transportation sector, which serves as the basis of the Governor's Executive Order N-79-20, CARB urges the City to require all trucks, TRUs, and cargo handling equipment servicing the Project to transition to zero emission prior to start of operations.

The Project Would Increase Exposure to Air Pollution in Disadvantaged Communities

The Project, in conjunction with the operation of the other industrial development at the former OAB, will expose nearby disadvantaged communities to increased levels of air pollution. Addressing the disproportionate impacts that air pollution has on disadvantaged communities is a pressing concern across the State, as evidenced by statutory requirements compelling California's public agencies to target these communities for clean air investment, pollution mitigation, and environmental regulation. The following three pieces of legislation need to be considered and included in the Plan when developing a project like this near a disadvantaged community:

Senate Bill 535 (De León, 2012)

Senate Bill 535 (De León, Chapter 830, 2012)[2] recognizes the potential vulnerability of low-income and disadvantaged communities to poor air quality and requires funds to be spent to benefit disadvantaged communities. The California Environmental Protection Agency (CalEPA) is charged with the duty to identify disadvantaged communities. CalEPA bases its identification of these communities on geographic, socioeconomic, public health, and environmental hazard criteria (Health and Safety Code, section 39711, subsection (a). In this capacity, CalEPA currently defines a disadvantaged community, from an environmental hazard and socioeconomic standpoint, as a community that scores within the top 25 percent of the census tracts, as analyzed by the California Communities Environmental Health

in the Scoping Plan issued in 2017, makes clear that in CARB's expert view, local mitigation is critical to achieving climate goals and reducing greenhouse gases below levels of significance.

2 Senate Bill 535, De León, K., Chapter 800, Statutes of 2012, modified the California Health and Safety Code, adding § 39711, § 39713, § 39715, § 39721and § 39723.

Screening Tool Version 3.0 (CalEnviroScreen).[3] This Project is located with the boundary of the West Oakland Community. The maximum CalEnviroScreen score for the West Oakland Community is in the top 15 percent, indicating that the area is home to some of the most vulnerable neighborhoods in the State. The air pollution levels in the West Oakland Community routinely exceed state and federal air quality standards. CARB urges the City to ensure that the Project does not adversely impact neighboring disadvantaged communities.

Senate Bill 1000 (Leyva, 2016)

Senate Bill 1000 (SB 1000) (Leyva, Chapter 587, Statutes of 2016)[4] amended California's Planning and Zoning Law. SB 1000 requires local governments that have identified disadvantaged communities to incorporate the addition of an environmental justice element into their general plans upon the adoption or next revision of two or more elements concurrently on or after January 1, 2018. SB 1000 requires environmental justice elements to identify objectives and policies to reduce unique or compounded health risks in disadvantaged communities. Generally, environmental justice elements will include policies to reduce the community's exposure to pollution through air quality improvement. SB 1000 affirms the need to integrate environmental justice principles into the planning process to prioritize improvements and programs that address the needs of disadvantaged communities.

Assembly Bill 617 (Garcia, 2017)

The State of California has emphasized protecting local communities from the harmful effects of air pollution through the passage of Assembly Bill 617 (AB 617) (Garcia, Chapter 136, Statutes of 2017).[5] AB 617 requires CARB to develop the process that creates new community-focused and community-driven action to reduce air pollution and improve public health in communities that experience disproportionate burdens from exposure to air pollutants. In response to AB 617, CARB established the Community Air Protection Program with the goal of reducing exposure in communities heavily impacted by air pollution. As part of its role in implementing AB 617, CARB must annually consider the selection of communities for development and implementation of community air monitoring plans and/or community emission reduction programs for those communities affected by a high cumulative exposure burden. The West Oakland Community is one of 15 communities statewide chosen thus far for inclusion in the Community Air Protection Program.

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3 "CalEnviroScreen 3.0." Oehha.ca.gov, California Office of Environmental Health Hazard Assessment, June 2018, *https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30*

4 Senate Bill 1000, Leyva, S., Chapter 587, Statutes of 2016, amended the California Health and Safety Code, § 65302.

5 Assembly Bill 617, Garcia, C., Chapter 136, Statutes of 2017, modified the California Health and Safety Code, amending § 40920.6, § 42400, and § 42402, and adding § 39607.1, § 40920.8, § 42411, § 42705.5, and § 44391.2.

The West Oakland Community was selected the development of a Community Emissions Reduction Plan (CERP) due to its high cumulative exposure burden, the presence of a significant number of sensitive populations (children, elderly, and individuals with pre-existing conditions), and the socioeconomic challenges experienced by its residents. CARB approved the West Oakland Community Action Plan (WOCAP) in December 2019, which included 89 strategies to achieve emission and exposure reductions throughout this community, including significantly reducing or eliminating emissions from heavy-duty mobile sources and industrial stationary sources.

Health-harming emissions, including particulate matter (PM), toxic air contaminants, and diesel PM generated from the proposed increase in heavy and light industrial development in the Project area will negatively impact the community, which is already disproportionally impacted by air pollution from existing freight operations as well as stationary sources of air pollution. Part of the AB 617 process required CARB and the Bay Area Air Quality Management District (BAAQMD) to create a highly-resolved inventory of air pollution sources within this community.

The City and Prologis Must Implement All Feasible Mitigation Measures to Reduce the Project's Potentially Cumulatively Considerable Impact on Air Quality and Public Health

As previously mentioned, the Project is located within the former OAB. Based on the air quality impact analysis presented in the 2012 IS/Addendum, which included the Project, the operation of the development proposed within the OAB would emit nitrogen oxide (NOx) emissions that would exceed the BAAQMD's significance thresholds. Consequently, the City concluded in the 2012 IS/Addendum that the development proposed within the OAB would result in a cumulatively considerable impact on air quality. Furthermore, the City concluded in the 2012 IS/Addendum that the combined operation of the industrial developments within the OAB, which includes the Project, would expose nearby residences within the West Oakland that would result in significant and unavoidable impact. Outside of the OAB area, the Project is also located near other air pollutant emission sources such as the Port of Oakland and Union Pacific Rail Yard.

The Plan includes a series of measures to reduce the Project's contribution to regional and local cumulative air quality and health risk impacts. CARB has reviewed the measures presented in the Plan and have the following comments:

All TRUs Accessing the Project Site Should be Required to be Plug-In Capable

According to the Plan, approximately 40 percent of the trucks arriving at the Project site will be equipped with TRUs. TRUs on trucks and trailers can emit large quantities of diesel exhaust while operating within the Project-site. Residences and other sensitive receptors (e.g., daycare facilities, senior care facilities, and schools) located near where these TRUs could be operating would be exposed to diesel exhaust emissions resulting in significant cancer risk. To reduce the air pollutant emissions emitted during the operation of these TRUs, the Plan requires the installation of electrical outlets to serve the plug-in capable TRUs and a requirement that plug-in capable TRUs are plugged in while loading or unloading goods either in loading docks or non-dock parking spaces. However, the Plan state's that a "good faith" effort will be made to encourage the use of these electrical outlets by posting signs on the loading docks indicating plug-in availability and email notifications to vendors. Although the Plan includes the infrastructure to support plug-in capable TRUs, there is no plan or enforcement mechanism to require that they are used by all plug-in capable TRUs visiting the Project site. To this end, CARB urges the City to include in the Plan that would require Custom Goods to have contractual language in tenant lease agreements that requires all TRUs entering the Project site to be plug-in capable and to plug-in while at loading/unloading docks.

The City Should Require all Project-related Trucks and On-site equipment to be Zero-Emission

The Project would include the operation of diesel-powered trucks and onsite equipment. These trucks and onsite equipment, and others operating at industrial facilities within the OAB, will increase air pollutions exposure in the West Oakland Community. As previously discussed, the Project would result in 140 daily diesel-powered drayage truck trips and 90 daily diesel-powered on-road truck trips. The Plan also states that the operation of the Project would include the operation of one 35,000 pound capacity diesel forklift and two diesel yard hostlers. To reduce the Project's air pollutant emissions and be consistent with Executive Order N-79-20, CARB urges the City to require the trucks and onsite equipment serving the Project to be completely zero emission.

The City can obtain a list of commercially available zero-emission trucks from the Hybrid and Zero Emission Truck and Bus Voucher Incentive Project (HVIP).[6] The HVIP is a part of California Climate Investments to incentivize the purchase of zero emission trucks. According to the emission calculations presented in the Plan, the drayage trucks would consist of heavy-duty drayage, and the on-road trucks would consist of heavy heavy-duty T7 Trucks. Based on CARB review of the zero emission trucks listed in the HVIP, electric trucks such as the Kenworth T680E Battery Electric Truck or BYD 8TT Class 8 Battery Electric Truck could meet the cargo transportation needs of the Project today. Yard tractors and forklifts are also commercially available and can be purchased using incentive funding from CARB's Clean Off-Road Equipment Voucher Incentive Project (CORE) administered by CALSTART[7] or the HVIP.

Although the Plan does include a Technology Assessment Program that commits Custom Goods to search out cleaner technology that could be implemented into the Project every

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6 Zero-Emission Truck and Bus Voucher Incentive Project. Accessible at: *https://californiahvip.org/*
7 Clean Off-Road Equipment Voucher Incentive Project. Accessible at: *https://californiacore.org/how-to-participate/*

three years, the technology for zero emission trucks is readily available today. To guarantee that the Project does not increase air pollution emissions in the West Oakland Community, the Plan should include a measure requiring the use of electric trucks. CARB urges the City to include in the Plan, a requirement that Custom Goods should include contractual language in tenant lease agreements that requires all trucks accessing the Project site to be completely electric starting no later than 2023.

The Plan Should Include Cumulative Air Pollutant Emissions from the OAB Development

The Plan includes a measure that would require the City and tenants to evaluate feasible emission reduction measures in the event cumulative air pollutant emissions from the combined operation of the OAB exceed the BAQMD's significance thresholds. This measure further states that "any measures agreed to by both City and tenants shall be implemented within a reasonable time period agreed upon by the City and the tenant(s)." For complete transparency to the public, specifically the West Oakland Community, the City should define, in the Plan, the criteria that would be used to determine if an emission reduction measure is feasible or not, and what constitutes a reasonable period of time in which a measure would be implemented. The Plan also includes a measure that would require the City to calculate the cumulative air pollutant emissions of all permanent projects at the OAB, based on the prior operational air quality plans, and compare them against the BAAQMD's significance thresholds. However, the Plan does not appear to include the cumulative air pollutant emissions of industrial developments in the OAB to date. CARB urges the City to a table in the revised Plan summarizing the cumulative air pollution emissions from the OAB.

The Technology Review Program Should Evaluate New Technologies Every Two Years.

The Plan commits Custom Goods to implement a Technology Review Program. As part of this program, Custom Goods will identify the cleanest commercially available technologies every three years. Custom Goods will implement the technologies within 12 months if the identified technologies are practical and economically feasible. Given the rate of advancement in technology, the City should require that these technology reviews occur every two years and be submitted to the City for evaluation and approval, in consultation with BAAQMD and CARB.

The Plan Should Include Substantial Evidence to Support the Assumptions Used in the Project's Air Pollutant Emissions Calculations.

CARB has reviewed the air pollution emission calculations presented in Exhibit A of the Plan and has concerns regarding the assumptions used to estimate the Project's PM and NOx emissions.

The City assumed all TRUs visiting the Project site would not idle longer than one hour. Data obtained by CARB staff indicates that TRUs can operate for as long as two hours per visit, which is well above the one-hour duration assumed in the Project’s air quality analysis. Unless the City restricts TRU idling durations to less than one hour, the Project’s air pollutant emission estimates should be revised. The revised air pollutant calculations should assume a TRU idling duration legitimized by substantial evidence.

The City assumed 40 percent of the trucks assessing the Project site would be equipment with TRUs. It is unclear in the Plan how this estimate was derived. Due to the large size of the proposed warehouse development, CARB is concerned that the number of TRUs visiting the Project site may be underestimated in the Project’s air quality analysis. CARB urges the City to provide substantial evidence to support this assumption.

The City assumed the TRUs accessing the Project site would have an average power rating of 34 hp. TRUs with a power rating of less than 25 hp have a higher PM emission rate (0.3 g/bhp-hr) than those greater than 25 hp (0.02 g/bhp-hr). Unless the City prohibit TRUs with a power rating of less than 25 hp from accessing the Project site, the Project’s air quality analysis should be revised. The revised Plan should assume a conservative percentage of the TRUs entering the Project site will have a power rating of less than 25 hp, legitimized by substantial evidence.

The Plan used CalEEMod's 9.5-mile default trip distance to model the Project's mobile emissions from the 90 daily over the road trucks trips leaving the Project site. According to the Plan, port drayage trucks would transport goods to the Project site and over the road trucks would transport the inspected goods to other destinations. It is unclear in the Plan how far outbound trucks would travel from the Project. CARB urges the City to base the Project’s air quality analysis on Project-specific trip distances in the revised Plan.

The air pollutant emission calculations presented in the Plan assumed 28 percent of the total daily TRUs visiting the Project site would be plug-in capable and will be connect to electrical outlets while at loading/unloading docks. Unless the Plan includes a measure that would require at a minimum of 28 percent of the all TRUs visiting the Projects site to plug-in while loading or unloading goods at the Project site, the Project’s air pollutant emission estimates should be revised assuming none of the TRUs are plug-in capable.

Conclusion

To reduce the exposure of toxic diesel PM emissions in disadvantaged communities already impacted by air pollution, the final design of the Project should include all existing and emerging zero-emission technologies to minimize diesel PM and NOx emissions, as well as the greenhouse gas emissions that contribute to climate change. CARB encourages the City to implement the recommendations listed in this comment letter to reduce the Project’s operational air pollution emissions.

CARB also urges the City to extend the 17-day review and comment period for this and future air quality plans within the OAB to at least 45 days. An extension of the review and comment period will allow stakeholders and members of the community more time to review the plans submitted by the City.

Given the breadth and scope of projects subject to review under the California Environmental Quality Action (CEQA) throughout California that have air quality and greenhouse gas impacts, coupled with CARB's limited staff resources to substantively respond to all issues associated with a project, CARB must prioritize its substantive comments here based on staff time, resources, and its assessment of impacts. CARB's deliberate decision to substantively comment on some issues does not constitute an admission or concession that it substantively agrees with the lead agency's findings and conclusions on any issues on which CARB does not substantively submit comments.

CARB appreciates the opportunity to comment on the Plan for the Project and can provide assistance on zero-emission technologies and emission reduction strategies, as needed. If you have questions, please contact Stanley Armstrong, Air Pollution Specialist via email at *stanley.armstrong@arb.ca.gov*.

Sincerely,

Robert Krieger, Branch Chief, Risk Reduction Branch

cc: See next page.

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Bay Area Air District:

July 15, 2021

Corey Alvin
Environmental Coordinator
City of Oakland Planning and Building Department
250 Frank H. Ogawa Plaza, Suite 3315
Oakland, CA 94612

RE: Air Quality Plan for the Operations of Custom Goods

Dear Mr. Corey Alvin:

Bay Area Air Quality Management District (Air District) staff has reviewed the Air Quality Plan for Operations (Plan) for Custom Goods (Project). The Project will occupy 189,038 square feet of warehouse at the Oakland Global Logistics Center, located at 2001 Maritime Street and referred to as the CC-1 Warehouse. The CC-1 Warehouse is part of the Oakland Army Base (OAB) and subject to Standard Conditions of Approval (SCAs) and Mitigation Measures (MM) adopted by the Oakland City Council (City) and Port of Oakland (Port) to lessen the significant air quality impacts anticipated with OAB buildout. The OAB also is adjacent to West Oakland, which suffers from disproportionately high exposure to toxic air contaminants (TACs) and particulate matter (PM) emissions.

Due to TACs and PM emissions in the community, West Oakland is the focus of substantial efforts by the Air District and others to reduce public exposure to these emissions. For example, West Oakland was selected for the first AB 617 Community Health Protection Action Plan in the Bay Area. Approved by the State Legislature in 2017, AB 617 established the Community Air Protection Program to improve conditions in communities like West Oakland. Co-led by the Air District and the West Oakland Environmental Indicators Project, *Owning Our Air: The West Oakland Community Action Plan*, illustrates both the community's disproportionate exposure to emissions and strategies to reduce emissions and exposure.

Air District staff recognizes that the tenant, Custom Goods, has committed to the following measures that mitigate Project emissions:

- Limiting idling to two minutes for all in-bound and out-bound delivery vehicles,
- Developing a dock management program,
- Implementing zero and near-zero emissions off-road equipment,
- Installing LEED gold features, including bike storage, low-flow plumbing fixtures, energy-efficient lighting, and natural ventilation,
- Using renewable energy, including on-site solar photovoltaic power, and
- Encouraging delivery trucks with electrified transport refrigeration units to plug in during loading and unloading at the dock.

While these actions will mitigate Project emissions, many of the other actions cited in the Plan simply require the tenant to comply with existing regulations. Complying with existing regulations, such as the California Air Resources Board Truck and Bus Regulation, Drayage

Truck Regulation, Tractor-Trailer Greenhouse Gas Reduction Regulation, and City of Oakland truck routes and other truck regulations, is extremely important. However, regulatory compliance is not considered a mitigation.

To meet the spirit of *Owning Our Air* and to reduce emissions beyond what is required by law, staff strongly recommends the Plan also should *require*:

- An aggressive schedule to transition the tenant's diesel Tier 4 interim and Tier 4 fleet to zero-emissions equipment and vehicles,
- All trucks entering the OAB property to meet 2010 diesel emission standards immediately (i.e., ahead of regulatory deadlines), and
- All trucks with transport refrigeration units to be electric plug-in ready and to plug in when at the loading dock.

In addition, Air District staff encourages the tenant to take advantage of the following Air District programs to reduce emissions from vehicles and equipment:

- **Incentives and Grants:** To learn more about the Air District's incentive programs which may be available to help Custom Goods fund equipment replacements, visit the website baaqmd.gov/funding-and-incentives.
- **Demonstration Projects:** To support demonstration projects, please contact Areana Flores (aflores@baaqmd.gov), Senior Staff Specialist in our Technology Implementation Office to learn about how the Air District can assist Custom Goods with projects that demonstrate alternative energy generation, including on-site solar photovoltaic power.

Air District staff continues to be willing and ready to work with the City, Port, developers, and tenants to develop an Air Quality Plan for Operations that will do more to protect the health of the West Oakland community. If you have any questions or would like to discuss Air District recommendations further, please contact Alison Kirk, Principal Environmental Planner, at akirk@baaqmd.gov.

Sincerely,

Greg Nudd
Deputy Air Pollution Control Officer

cc: BAAQMD Secretary John J. Bauters
BAAQMD Director Pauline Russo Cutter
BAAQMD Director David Haubert
BAAQMD Director Nate Miley

ATTACHMENT C

FIRSTCARBON SOLUTIONS™

Air Quality Plan for Operations of Custom Goods Prologis Oakland Global Logistics Center Project City of Oakland, Alameda County, California

Lead Agency:
City of Oakland
Planning and Building Department
250 Frank Ogawa Plaza
Oakland, CA 94612

Contact: Corey Alvin

Prepared for:
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Contact: Jason Brandman, Project Director
Phil Ault, Project Manager

Report Date v.0: May 18, 2021
Revised Date v.1: June 24, 2021
Revised Date v.2: June 22, 2021
Revised Date v.3: November 4, 2022
Revised Date v.4: January 9, 2022

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Tables

Exhibits

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius (Centigrade)
°F	degrees Fahrenheit
$\mu g/m^3$	micrograms per cubic meter
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
CBP	Customs and Border Protection
CEQA	California Environmental Quality Act
CES	Centralized Examination Station
DOORS	Diesel Off-Road Online Reporting System
DPM	diesel particulate matter
EIN	Equipment Identification Number
EV	electrical vehicle
ITE	Institute of Transportation Engineers
LED	light-emitting diode
LEED®	Leadership in Energy and Environmental Design
MHE	material handling equipment
NII	on-intrusive inspection
NO_X	nitrogen oxide
OAB	Oakland Army Base
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PV	photovoltaics
ROG	reactive organic gases
SCA	Standard Conditions of Approval
TAC	toxic air contaminant
TCM	Transportation Control Measures
TI	Tenant Improvements
TRU	Transport Refrigeration Unit
USGBC	United States Green Building Council

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SECTION 1: INTRODUCTION

Prologis is the leading global owner, operator, and developer of logistics real estate. Prologis serves manufacturers, retailers, e-commerce businesses, transportation companies, and logistics providers with the facilities that support local, regional, and global trade. Prologis buildings are located close to transportation infrastructure such as railways, seaports, highways, and airports. Prologis provides customers with best-in-class facilities and have a long history of industry-leading corporate governance and transparency. As the ground lessee of 58 acres of the City's former Oakland Army Base (OAB) property for the next 66 years, Prologis is committed to being a good steward of the land and recognizes the concerns of the West Oakland Community in which Prologis and associated tenants operate from.

Working toward the goals for improved air quality will require coordination and collaboration from all tenants of these warehouses to plan and implement emission reduction actions that are impactful, practical, and feasible.

1.1 - Purpose of this Air Quality Plan for Operations of the Custom Goods Facility

The purpose of this Air Quality Plan for Operations of the Custom Goods Facility at CC-1 Warehouse (Plan) is to:

- Provide clear direction for tenant of this warehouse regarding operation air quality and energy conservation requirements for Tenant Improvements (TI) and for ongoing operations throughout the duration of their lease.
- Provide a documented path of compliance for the Standard Conditions of Approval/Mitigation Monitoring and Reporting Program (SCA/MMRP) relating to air quality and public outreach as outlined in Mitigation Measure (MM) PO-1, which involves public outreach to OAB stakeholders.

The OAB Redevelopment Plan and associated Final Environmental Impact Report (EIR) was approved by the City of Oakland (City) in 2002. The project was then revised with an Initial Study/Addendum in 2012 (OAB Project). In both environmental documents, the goals and mitigations were very broad, attempting to cast a wide net over a master plan level development that was still in the conceptual stage. One of the objectives of this diesel emission reduction and operational Air Quality Plan for the Custom Goods facility is to clarify and distill which requirements apply to operations of this particular facility, to clarify any vagueness in the applicable SCA/MMs, and to comply with the mitigation measures.

1.1.1 This document applies to the tenant referred to as Custom Goods, which would occupy the 189,038-square-foot warehouse at the Oakland Global Logistics Center, referred to as CC-1, address: 2001 Maritime Street.

1.1.2 The tenant is required to comply with all applicable State and regional air quality regulations and is required to implement the components of this document.

1.1.3 The tenant shall be required to demonstrate how compliance is achieved on the specific user level.

1.1.4 This Plan shall become a component of tenant lease documents.

1.1.5 The City of Oakland, as the lead agency under the California Environmental Quality Act (CEQA), shall determine compliance with the applicable mitigation measures and shall determine compliance with this Plan.

SECTION 2: TENANT SUBJECT TO THIS PLAN

2.1 - Tenant Subject to the Plan

This Plan applies to the tenant referred to as Custom Goods, which will occupy the Prologis warehouse referred to as CC-1 located at 2001 Maritime Street. Exhibits 1 and 2 illustrate the regional project location and the local project vicinity. The shell of the building completed construction in October 2020, with tenant improvements planned to be completed by late 2022.

2.2 - Description of Tenant Operations

The 189,038-square-foot building and site (Exhibit 3) would be leased solely to Custom Goods, who would operate the site as a U.S. Customs and Border Protection (CBP) Centralized Examination Station (CES). Custom Goods specializes in the operation of secure cargo inspection facilities where import/export goods are examined and cleared for transport. In general, a cargo inspection facility is designed to promote safe and efficient inspections and operational support tasks by CBP officers. The overall function of the facility includes the following objectives:

- Maintain physical security standards.
- Enable rapid devanning of cargo at a CES.
- Enable secure storage and movement of cargo at a CES.
- Provide easily accessible cargo for CBP examination.
- Provide easily accessible containerized cargo reload.

Tenant improvements inside the building would include roughly 3,000 square feet of administrative offices, 11,000 square feet of secure U.S. Customs offices with accessory inspection areas, and approximately 40,000 square feet of cold dock and refrigerated space for cold chain inspections. The remainder of space would be used as dry cargo hold or inspection areas.

The CBP inspection and processing areas are physically secure to prevent unauthorized access. The processing area includes spaces for canine inspections, x-ray screening, and agricultural examinations. During canine inspections, dogs screen the containers. The x-ray screening is conducted by non-intrusive inspection (NII) units. Processing areas generally require unreleased cargo detention areas for safe, secure, temporary cargo detainment.

There would be +/-40 active dock positions where goods are inbounded and outbounded. Reefer plugs would be provided at 50 trailer positions and at all refrigerated dock doors.

Custom Goods expects that truck traffic would be both Port of Oakland (Port) drayage and over-the-road transportation to other destinations. Approximately 115 trucks are expected to visit the site daily, with up to an estimated 70 drayage trucks inbound from the Port, and an estimated average of 45 over-the-road trucks that would carry outbound product. Truck visits are expected to the site up to 5 days per week.

Products being inspected/held would be moved around by the following material handling equipment (at start of operations):

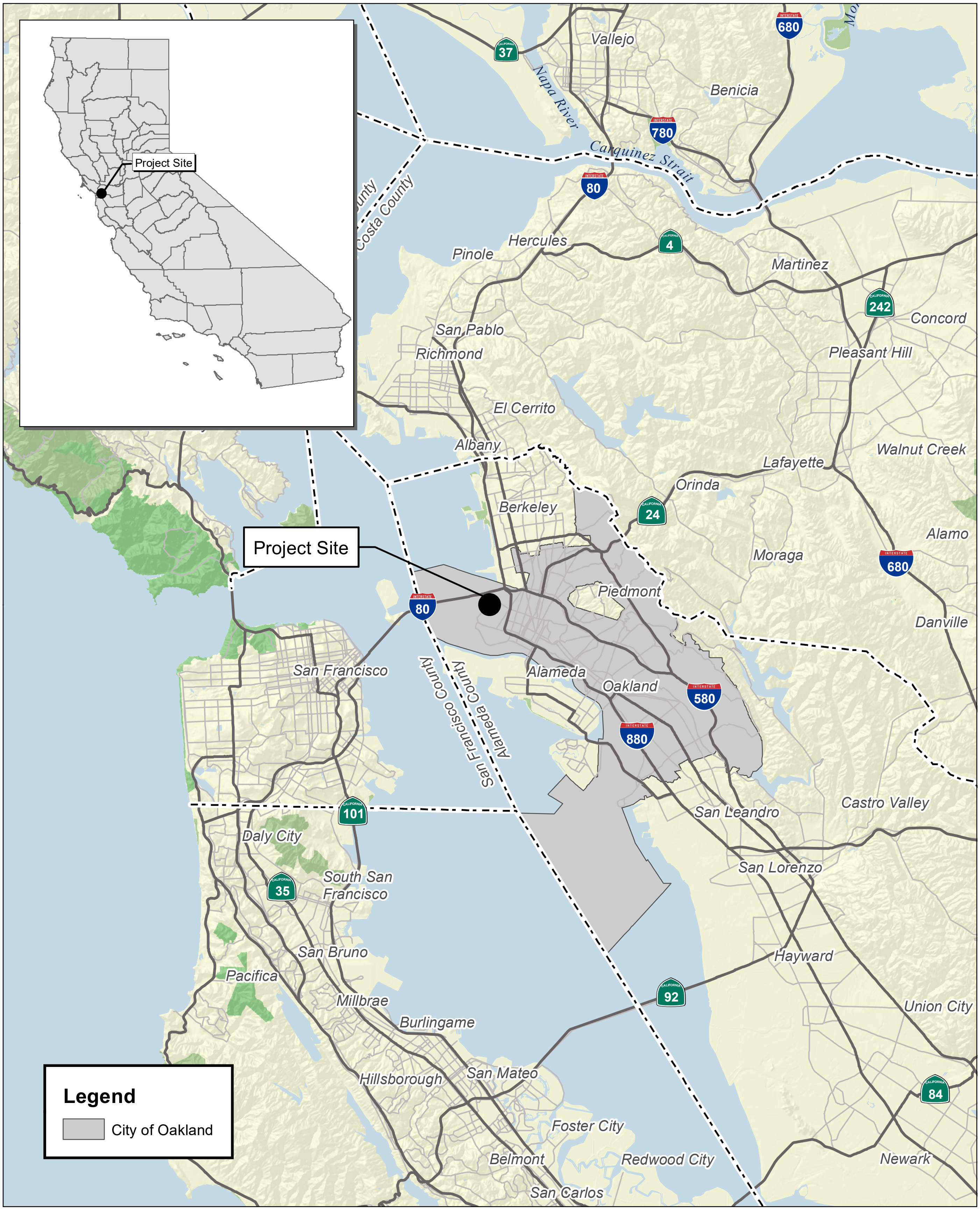
- Ten 6,000 lb. electric fork trucks
- Two 12,000 lb. electric fork trucks
- One high-capacity electric forklift
- Two diesel yard hostlers (to be converted to electric by 2024)

The entire Custom Goods off-road fleet would be converted to zero-emissions electric equipment between the end of 2023 to mid-2024, depending on equipment availability. This includes replacing both of the diesel yard hostlers with electric equipment. Custom Goods has initiated orders to convert both diesel units to electric equipment. In the interim, the diesel yard hostlers would be utilized on-site, along with the electric equipment outlined above, including fork trucks and forklifts. Ultimately, all on-site off-road equipment would be zero emissions equipment.

The tenant, Custom Goods, would employ less than 40 employees at this facility. There would be additional employees accessing the site, which are not employed by Custom Goods: CBP would employ additional staff that would operate in two shifts. The first CBP shift would be 40 to 60 individuals, and the second shift would be an estimated 30 to 40 individuals. Parking would be fully accommodated on-site, as the current site is striped for 139 autos.

2.2 Upon termination of the Custom Goods lease, a different Air Quality Plan or an addendum to this Plan may be required as determined by the City. Stakeholder notification will be provided for revisions the City determines to be substantive.

2.3 If an amendment or exception to this Plan is requested or determined to be necessary, the City will evaluate the scope of the amendment/exception and shall determine the necessary process for undertaking such an amendment/exception. Stakeholder notification will be provided for amendments or exceptions which the City determines to be substantive.



Source: Census 2000 Data, The California Spatial Information Library (CaSIL).

Exhibit 1
Regional Location Map

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Source: Bing Aerial Imagery.

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1,000 500 0 1,000 Feet

Exhibit 2
Local Vicinity Map

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PROLOGIS - OAKLAND GLOBAL LOGISTICS CENTER
OPERATIONAL AIR QUALITY PLAN FOR CUSTOM GOODS

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Source: Google Earth, 9/26/2020.

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Exhibit 3
Site Plan

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SECTION 3: SCA/MMRP REQUIREMENTS

The OAB Project was approved in 2002, and then revised with an Initial Study/Addendum in 2012. The City of Oakland prepared a SCA/MMRP, which was approved by the Oakland City Council on July 16, 2013, superseding a previous version dated October 15, 2012. This Plan focuses on the air quality conditions of approval and mitigation measures identified in the SCA/MMRP. The entirety of the SCA/MMRP is available on the City of Oakland website: https://www.oaklandca.gov/topics/oakland-army-base-environmental-documents.

Table 1 below lists the air quality related mitigation measures applicable to this tenant/building. Prior to receiving the building shell and sitework permits for construction of this building, Prologis prepared (and the City approved) the Construction Management Plan, which addressed the construction-related air quality mitigation measures. The table below shows how the applicable air quality mitigation measures are addressed. Additionally, it should be noted that SCA Air-3 and MM 4.4-3b do not apply to the Custom Goods operations. SCA Air-3 applies only to buildings that would contain sensitive receptors (e.g., hospitals, schools, etc.) and MM 4.4-3b applies only to maritime uses at the West Gateway bulk marine terminal.

Table 1: Summary of Air Quality SCA/MMRP Requirements and the Response Method Which Addresses Each One

SCA/MM Number	Description	Response Method
SCA AIR-1	Construction Management Plan	Construction Management Plan/Previously Approved
SCA AIR-2	Construction Related Air Pollution Controls	Construction Management Plan/Previously Approved
SCA TRANS-2	Construction Traffic and Parking	Construction Management Plan/Previously Approved
MM 4.3-13	Traffic Control Plan–Hazmat	Construction Management Plan/NA
MM 4.4-6	Energy Conserving Fixtures/Design	Air Quality Operational Plan
MM4.4-4	Truck Diesel Emissions Reduction Plan	Air Quality Operational Plan
MM 4.4-5	Transportation Control Measures	Air Quality Operational Plan
SCA TRANS-1	Parking and Transportation Demand Management	Air Quality Operational Plan
MM 5.4-1	Demonstration Projects	Air Quality Operational Plan
Notes: SCA = Standard Conditions of Approval MM = Mitigation Measure		

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SECTION 4: ELEMENTS OF THIS AIR QUALITY PLAN FOR OPERATIONS OF THE CUSTOM GOODS FACILITY

This Plan contains the following components:

4.1) Truck and Equipment Diesel Emission Reduction (MM 4.4-4)

4.2) Encourage, Lobby, and Participate in Emission Reduction Demonstration Projects (MM 5.4-1)

4.3) Technology Review Program (MM 4.4-4)

4.4) Sustainable Design and Construction (MM 4.4-6)

4.5) Transportation Control Measures and Parking/Transportation Demand Management (SCA TRANS-1, MM 4.4-5)

4.6) Quantification of Diesel Emissions (MM 4.4-4)

4.1 - Truck and Equipment Diesel Emission Reduction

The requirements listed below shall reduce the diesel emissions, including diesel particulate matter (DPM) and nitrogen oxides (NO_X), produced during the operation of this warehouse.

Trucks

4.1.1 On Road Trucks

All diesel trucks with a gross vehicle weight rating over 14,000 pounds entering the site of this warehouse must comply with the Truck and Bus Regulation of the California Air Resources Board (ARB) in effect at the time of operation of the truck(s).

4.1.2 Drayage Trucks

Should Custom Goods receive cargo from the maritime terminals, an intermodal rail yard, or property of the Port, the drayage trucks[1] doing so must comply with the ARB Drayage Truck Regulation in effect at the time of operation of the truck(s). See ARB's Drayage Truck Regulation for more details, including truck engine year requirements and truck registry requirements.[2]

4.1.3 Trucks with Transport Refrigeration Units

All refrigerated product coming from the Port shall be transported on reefer containers that are equipped with electric Transport Refrigeration Units (TRUs) which are plug-in capable and shall be plugged in upon arrival to outlets on pedestals or the dock wall.[3] With respect to outbound trucks,

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[1] Drayage trucks are defined by the ARB as diesel-fueled Class 7 or Class 8 Trucks with gross vehicle weight rating 26,001 lbs. or more that transport cargo, containers, or chassis to or from a port or intermodal rail yard in California.

[2] California Air Resources Board (ARB). 2022. Drayage Truck Regulatory Documents. Website: https://ww2.arb.ca.gov/our-work/programs/drayage-trucks-seaports-railyards/drayage-truck-regulatory-documents. Accessed August 18, 2022.

[3] The TRU calculations are included in an emissions spreadsheet attached to this Plan. A copy of the TRU Inventory document is also attached to this Plan.

Custom Goods estimates that on a daily basis, approximately 16 truck/trailers with TRUs would not be plug-in capable. Therefore, Custom Goods has designed the seals at the loading doors to keep dock temperatures modulated so that TRUs do not need to be run continuously. Additionally, Custom Goods shall restrict on-site runtime of non-electric TRUs to a maximum of 1 hour, and shall establish on-site enforcement, including tracking the number of trucks originating from the Port out of the total amount of trucks arriving at the project site to demonstrate that a minimum 28% of the total truck/trailers equipped with TRUs are plug-in capable; posting signs with the TRU use restrictions near the site entrance and truck parking areas; and monitoring non-electric TRUs for compliance.

4.1.4 Idling Rules for All Trucks

All size and types of inbound and outbound delivery vehicles shall be prohibited from idling more than 2 minutes when loading and unloading or staging at this site. The idling rules shall be posted in easily visible locations on-site and shall be enforced by Custom Goods.

4.1.5 Management of Loading Docks of Loading/Unloading

A dock management or loading/unloading system shall be developed and implemented by Custom Goods for delivery requirements to ensure that truck idling times do not exceed 2 minutes when the trucks are on-site, that electric-capable TRUs are plugged in, and that on-site TRU diesel engine runtime be no more than 1 hour, as outlined in Section 4.1.3 above.

4.1.6 Compliance with Truck Routes and with the West Oakland Truck Management Plan

All trucks serving the Custom Goods warehouse must use designated truck routes to arrive and depart from this building. Additionally, such trucks shall comply with the West Oakland Truck Management Plan (approved by the City and Port in April 2019), or with other City-approved truck regulations in effect at the time of operation of the truck serving this tenancy.

4.1.7 ARB Compliance for Trucks

a) Compliance with applicable air quality regulations for commercial trucks and vans are required including, but not limited to, the ARB Tractor-Trailer Greenhouse Gas Reduction Regulation, Periodic Smoke Inspection Program, Statewide Truck and Bus Regulation or Drayage Regulation.

b) All truck fleets owned by Custom Goods, or under contract with Custom Goods to provide delivery services to/from this warehouse, shall provide proof of compliance through ARB certificates of compliance or copies of annual smoke test results.

Off-Road Equipment Used in the Custom Goods Operation

4.1.8 Off-road Equipment

a) Outdoor off-road equipment over 25 horsepower, including but not limited to yard equipment, exterior forklifts and pallet jacks, shall be zero and near-zero emission equipment. This includes Tier 4 interim, or Tier 4 diesel equipment (or equivalent if Tier system is not applicable to a particular piece of equipment). Such equipment can also be electric, propane, bio-diesel, and alternative-fueled equipment.

b) Indoor off-road equipment including but not limited to interior forklifts, scissor lifts, pallet jacks and “order pickers” shall be electric, propane or alternative-fueled equipment.

c) Custom Goods shall submit an equipment list of all off-road equipment to be used both indoors and outdoors to demonstrate that zero and near-zero emission (including Tier 4 or 4i diesel equipment or equivalent) equipment, or electric, propane, bio-diesel or alternative-fueled equipment shall be used during operations.

d) All off-road equipment shall be properly serviced and maintained throughout the life of the equipment.

e) Compliance with all applicable ARB regulations for off-road diesel equipment used at this site is required, including but not limited to the Diesel Off-Road Online Reporting System (DOORS) and the Equipment Identification Number (EIN).

f) Also see Section 4.3 of this Plan related to the Technology Review Program.

4.1.9 Idling Rules for Off-Road Equipment

Diesel off-road equipment shall be prohibited from idling more than 2 minutes when loading and unloading, staging, or when not in active use. See ARB regulation for in-use off-road diesel vehicles for clarification of what is considered idling. The idling rules shall be posted in easily visible locations on-site.

4.2 - Participation in Emissions Reduction Demonstration Projects

Custom Goods shall evaluate emission reduction demonstration projects that promote technological advances in improving air quality. Examples of some demonstration projects include but not limited to: Compressed natural gas or liquified natural gas-powered trucks, and energy generation via alternative systems electricity.

Custom Goods is encouraged to utilize innovative and cleaner technology/equipment from operations in other Custom Goods locations.

Custom Goods shall provide contact information to the Bay Area Air Quality Management Department (BAAQMD) for receipt of information regarding grants, vouchers and other funding opportunities for demonstration opportunities. The BAAQMD contact that Custom Goods is in touch with is Areana Flores (aflores@baaqmd.gov), Senior Staff Specialist in BAAQMD’s Technology Implementation Office. To learn more about BAAQMD’s incentive programs which may be available to help Custom Goods fund equipment replacements, visit the website baaqmd.gov/funding-and-incentives.

Custom Goods shall report on demonstration projects considered per the Technology Review Program below.

4.3 - Technology Review Program

Custom Goods shall use cleaner technology over time as it becomes more readily available, practical, and economically feasible. To accomplish this, Custom Goods shall review new technology every 3 years and with equipment turnover (prior to acquisition of, or lease of) additional or replacement of Custom Goods fleet trucks or on-site equipment to see if zero or near-zero equipment is economically feasible and practical.

Custom Goods shall investigate and make part of such analysis, any grant, voucher or other type of program that would help offset cost and/or otherwise make such equipment available, practical and economically feasible. Custom Goods shall submit such technology review to the City upon request.

If the technology review demonstrates that new technology/equipment will be effective in substantially reducing emissions, is available, practical and economically feasible as determined by Custom Goods, then Custom Goods shall implement such technology within 12 months.

4.4 - Sustainable Design and Construction

Sustainable design of tenant improvements has a beneficial impact on long-term emissions reduction, improved air quality and reduced energy consumption. Tenants are required to comply with all applicable State and regional air quality regulations and are required to implement the following:

4.4.1 Leadership in Environmental and Environmental Design Gold

The core and shell of this building achieved a “Gold” level certification per the United States Green Building Council (USGBC) Leadership in Environmental and Environmental Design (LEED®) rating system, which surpassed the requirements of the Statewide Title 24 building code requirements and the requirements of the SCA/MMRP. As part of the Gold level Core and Shell certification, it is expected that the TI would be performed under a separate scope and includes a provision to include the following sustainable design measures in the TI not a part of the shell buildout.

Custom Goods must follow the design guidelines set forth under LEED® Gold Core and Shell system. This LEED® addenda shall be included by Prologis as an exhibit to the tenant’s lease. In 2022, TI guidelines of LEED® Gold include items such as:

- Bike storage, changing rooms and showers
- Low flow plumbing fixtures
- Energy efficient lighting, including light emitting diode (LED) fixtures

Custom Goods is also encouraged, but not required, to obtain LEED®-CI (Commercial Interiors) certification, preferably also at a Gold level.

4.4.2 Title 24 Compliance

Tenant construction and improvements shall meet Title 24 (Building Energy Efficiency Program) of the International Building Code (IBC)/California Code of Regulations to satisfy MM 4-4.6. This will be required in order to obtain a building or TI permit from the City of Oakland.

4.4.3 Renewable Energy and Infrastructure for Charging Electric Trucks and Off-road Equipment

a) The City encourages use of a renewable energy system or combination of systems (solar/wind/mechanical/tidal/hydrogen) designed to offset 20 percent of building's annual electrical consumption. Custom Goods and Prologis are currently working on providing solar panels to offset electricity demand with the plan to install once the exact refrigeration and electrical loads are determined.

b) Rooftop solar photovoltaic (PV) power is preferred and is in the planning stages.

c) The shell building roof structure of this warehouse building has been designed to support solar panel load.

d) The electrical room has been sized for additional future solar PV infrastructure.

4.5 - Transportation Control Measures and Parking/Transportation Demand Management

Transportation Control Measures (TCMs) in MM 4.4-5 are intended to provide alternative ways for employees to commute to work at this warehouse.

Transportation Control Measures

In addition to the Fair Share Program implemented by the City and the Port for the OAB project, Custom Goods is required to implement TCM 9, TCM 11, and TCM 13 per MM 4.4-5:

TCM 9 Provide preferential parking for carpool and vanpool vehicles per City of Oakland and LEED® standards.

TCM 11 Secure, weather protected bicycle parking shall be provided on-site, such as through bike lockers.

TCM 13 Showers and lockers shall be provided

Additionally, electrical vehicle (EV) charging station infrastructure for cars would be installed in the parking lot of this warehouse and as well as necessary infrastructure in place for future truck charging stations.

4.5.1 Fair Share Participation

Prologis is participating in the City's defined "fair share" program and has contributed to its fair share funded TCM programs, as described in the Fair Share Program. The City shall take lead on implementing the Fair Share Program.

4.5.2 Parking and Transportation Demand Management

Custom Goods shall prepare and implement a Parking and Transportation Demand Management Plan per SCA TRANS-1, consistent with the number of on-site employees, with the goal of reducing drive-alone commute trips during the peak trafficperiods.

4.6 - Quantification of Diesel Emissions

The 2012 Initial Study/Addendum analyzed whether the OAB Project (as defined in Chapter 2 of the Initial Study/Addendum) would result in total OAB Project emissions that exceed 1999 BAAQMD Significance Thresholds as specified in the 2012 Addendum. Such Thresholds are established for reactive organic gases (ROG), nitrogen oxides (NO_X), particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$); the applicable threshold for each of these pollutants as clarified on page 132 of the Initial Study/Addendum was 15 tons per year. Table 3.3-8 on page 150 of the Initial Study/Addendum shows that OAB Project emissions of NO_X exceed the Threshold of Significance, while also showing that the other pollutants do not exceed the Threshold of Significance.

Operations of the Custom Goods facility shall, as stated in MM 4.4-4, "strive to reduce contributions to West Oakland diesel emissions to less than significant levels," using the Thresholds of Significance identified in the 2012 Initial Study/Addendum. Reducing diesel emissions would have two benefits: reducing NO_X and reducing $PM_{2.5}$, which is a toxic air contaminant (TAC).

To determine whether the diesel emission reduction actions required by this Plan will reduce emissions associated with operations of the Custom Goods facility to a less than significant level, such emissions are quantified below.

This was done by quantifying the emissions from diesel trucks which will serve the Custom Goods facility using the Institute of Transportation Engineers (ITE) Trip Generation 10th edition OR actual verifiable data of the Custom Goods daily truck and passenger vehicle trips, and the most recent California Emissions Estimator Model (CalEEMod) to quantify emissions per ton per year for their operations.

Results

This quantification of emissions was undertaken in May 2021 using data from Custom Goods on the daily truck and passenger vehicle trips and the CalEEMod Version 2016.3.2 model and Emission Factors mobile source emissions model (EMFAC 2017). This analysis looked at two different points in time: (1) at launch, 2022; and at 2024, with fleet turnover, retrofit or replacement per ARB motor vehicle regulations. A separate analysis was prepared to quantify the on-site TRU emissions associated with the proposed project, which was most recently updated in October 2021, utilizing supporting information from the ARB 2021 Staff Report for the Amendments to the Airborne Toxic Control Measure for in-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, Appendix H (attached for reference herein as Appendix C). Based on this analysis, the TRU NO_X emissions would be: 0.10 tons per year in 2022 and 2024. The total NO_X emissions including vehicles and TRUs would be: 0.43 tons per year in 2022, and 0.37 tons per year in 2024. This amount is below the Threshold of Significance for NO_X which, per the 2012 Initial Study/Addendum, was 15 tons of NO_X per year. As stated previously, the 2012 Initial Study/Addendum found that $PM_{2.5}$ emissions associated with the trucks from this facility fall below the individual project threshold of 10 tons per year from the newer BAAQMD 2011 Guidelines. In addition, DPM impacts at the nearest off-site receptor location would fall below the threshold for increased cancer risk: less than 10 cases per million, non-cancer hazard index less than 1.0, and $PM_{2.5}$ level of less than 0.3 micrograms per liter (ug/m^3) annual average. A more detailed summary of this analysis is attached to this Plan as Appendix A, and the full report is attached to this document as Appendix B.

4.6.1 As other uses and facilities are constructed at the OAB, the required operational Air Quality Plan for each individual project will quantify its individual emissions and provide a calculation for the cumulative emissions of all permanent projects at the OAB based on the prior operational air quality plans against the Thresholds.

4.6.2 If emissions per tenant exceed the Threshold of Significance when added together with other permanent operations under way at the OAB, then all tenants will meet and discuss with the City what other feasible measures can be implemented to further reduce emissions from operations. Any measures agreed to by both City and tenants shall be implemented within a reasonable time period agreed upon by the City and the tenant(s).

SECTION 5: PLAN IMPLEMENTATION

Prologis shall obtain from Custom Goods all required annual compliance documentation, in the appropriate format, for subsequent timely submission by Prologis to the City's Environmental Review Officer for each element of this Plan per Table 2 below. The City shall be responsible for reviewing and approving the compliance.

Such compliance shall be subject to audit at the City's discretion, not more than one per year, other than the technology review which is to be submitted to the City every 3 years. The City shall give 30-day notice prior to audit. The results of the compliance audit shall be available upon request and posted to the City's website.

Table 2: Operational AQ Plan Compliance Summary Table Example

ID	Description of Plan Element	Compliance Method/Description	Required Date of Compliance
4.1	**T/E Diesel Emission Reduction**		
4.1.1	Drayage Trucks	[provide truck or truck fleet compliance certificate]	If operations change such that drayage trucks are used; upon audit.
4.1.2	On Road Trucks	[provide truck fleet compliance certificate]	Prior occupancy and upon audit.
4.1.4	Off-Road Equipment	[provide off-road equipment fleet info; participate in the ARB DOORS program]	Prior to occupancy and upon audit
4.1.6	Idling Rules	[provide idling policy signage]	Prior to occupancy
4.1.7	Dock Management	[provide a plan to monitor truck deliveries and potential queueing]	Prior to occupancy
4.1.8	ARB Compliance	[provide fleet info]	Continuous; upon audit
4.2	**Sustainable TI Design**		
4.2.1	LEED® Gold Compliance	[reference plan sheets or submittals where LEED® Addenda items are shown]	Prior to occupancy
4.2.2	Title 24 Compliance	[provide statement on sheet indicating Title 24 compliance]	Prior to issuance of building permit for TI
4.2.3	Renewable Energy	[describe solar PV or other on-site renewable energy system–KW generation	If proposed, prior to occupancy or per technology review
4.3	**Transportation Control Measures**		
4.3.1	Fund Fair Share Programs	[City assessed fair share]	Paid by Prologis in full
4.3.2	Parking/TDM Program	[provide a plan to reduce employee single-driver traffic]	Prior to occupancy

ID	Description of Plan Element	Compliance Method/Description	Required Date of Compliance
4.4	**Demonstration Projects**		
4.4.1	Demo Projects Participation	[provide any demonstration projects]	Continuous
4.5	**Technology Review**		
4.5.1	Technology Review Program	[provide periodic updates over time]	Continuous
4.6	**Quantification of NO_X emissions if cumulative threshold exceeded, tenants and City shall meet and discuss other feasible reduction measures to be implemented within an agreed upon time frame**		As needed
Notes: ARB = California Air Resources Board DOORS = Diesel Off-Road Online Reporting System LEED® = Leadership in Energy and Environmental Design NO_X = nitrogen oxide PV = photovoltaic TDM = Transportation Demand Management			

Timing to implement most of these plan elements would happen as the tenant improvements are constructed or as operations begin. However, Prologis nor the tenant controls the implementation timing of the Fair Share Program elements. The fair share elements are City-led programs.

From time to time, the tenant may be required to provide reporting on the progress or maintenance of various plan elements (for example, updating truck fleet as new vehicles are purchased). Any update requests shall be initiated by the City and tenant shall provide the requested information.

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Appendix A: Summary of Diesel Emissions Quantification

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This appendix provides a Summary of the report done by Mitchell Air Quality in May 2021, as revised in October 2021 in response to comments, which has been submitted to the City for review and approval and included in this plan as Appendix B.

Quantification of Diesel Emissions for the Custom Goods Facility at OGLC-3

In order to determine whether the diesel emission reduction actions required by the *Air Quality Plan for Operations of the Custom Goods Facility at the OGCL-3 Warehouse* will reduce nitrogen oxide (NO_X) emissions below the Thresholds of Significance specified in the Initial Study/Addendum for development at the OAB Project, the emissions associated with operations of the Custom Goods facility was quantified. This quantification of NO_X emissions was undertaken in May 2021 using data from Custom Goods on the daily truck and passenger vehicle trips and the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 and the California Air Resources Board (ARB) Emission Factors mobile source emissions model (EMFAC 2017). The analysis includes emissions from Transport Refrigeration Units (TRU) and on-site material handling equipment (MHE). Specifically, the Custom Goods estimates that 40 percent of the trucks at the facility would be equipped with TRUs. As such, Custom Goods expects approximately 140 daily diesel-powered drayage trucks per day (70 two-way trips per day) and approximately 90 diesel-powered over-the-road trucks per day at full capacity (45 two-way trips per day). Based on this information, the proposed project is expected to generate 307 average annual two-way trips per day including all trucks and cars used for incoming and outgoing deliveries and employee trips per day at full operation for 5 days per week. The proposed project also includes two diesel-powered yard hostlers, which are scheduled for conversion to electric yard hostlers by 2024, depending on equipment availability. The additional off-road equipment that will be utilized at the Custom Goods site is zero-emissions electric equipment, including fork trucks and forklifts. Ultimately, all on-site off-road equipment will be zero-emissions equipment.

The project building would be used for processing incoming material from ships at the Port and outgoing material for export through customs and inspections. The truck trips used to haul the material to and from the Port are existing trips that occur without the project. The material is currently processed at other locations outside of the Port and OGLC after leaving the waterfront. The only new emissions that would occur are from employee compute trips to and from the project building, MHE used to position trailers and containers on-site, and additional TRU use while the trucks are parked at the project site.

This analysis showed NO_X emissions would be 0.43 tons of NO_X per year, which is well below emissions estimated in 2012 for a transloading warehouse for this site (6.60 tons per year), well below the Threshold of Significance which is 15 tons per year.

Table 3: Estimated NO_X Emissions from Custom Goods Facility in 2024

Tenant	Size of Lease Area	Number of Daily Truck Trips	Number of Daily Employee Trips	NO_X Emissions Estimated in 2012 for a Transloading Warehouse of this Size (tons/year)	NO_X Emissions Estimated in 2024 Based on Custom Goods Use[1] (tons/year)	Threshold of Significance for NO_X in tons/year[2]
Custom Goods	189,038	164	143	6.60	0.43	15

Notes:
[1] Quantification of emissions from diesel trucks serving the Custom Goods facility was done based on data from Custom Goods estimating the daily truck and passenger vehicle trips, and the current California Emissions Model (CalEEMod) 2016.3.2. and EMFAC 2017.
[2] Thresholds of Significance are as specified in the 2012 Initial Study/Addendum, pages 132 and 133.

As stated in Section 4.6 of the *Air Quality Plan for Operations of the Custom Goods,* other tenants at the OAB Project would be required to quantify the emissions associated with their operations. These estimates would form a calculation for the cumulative emissions for all permanent projects at the OAB to determine whether cumulative emissions stay below the Threshold of Significance. See Section 4.6 for more details.

Toxic Air Contaminants

Diesel particulate matter (DPM) emissions associated with the trucks serving this facility would not exceed the individual project threshold of increased cancer risk: less than 10 cases per million, the non-cancer hazard index less than 1.0, and $PM_{2.5}$ level of less than 0.3 ug/m^3 annual average. As shown in the following table, $PM_{2.5}$ emissions from the Custom Goods facility in 2022 would not exceed the 1999 BAAQMD criteria pollutant emission threshold which is used as a surrogate for DPM.

Table 4: Estimated $PM_{2.5}$ Emissions from Custom Goods Facility in 2022

Tenant	Size of Lease Area	Mobile Source Emissions[1] (tons/year)	TRU Emissions (tons/year)	Total Emissions (tons/year)	Threshold of Significance for $PM_{2.5}$ in tons/year[2]
Custom Goods	189,038	0.045	0.004	0.046	15

Notes:
[1] Quantification of emissions from diesel trucks serving the Custom Goods facility was done based on data from Custom Goods estimating the daily truck and passenger vehicle trips, and the current California Emissions Model (CalEEMod) 2016.3.2. and EMFAC 2017.
[2.] Thresholds of Significance are as specified in the 2012 Initial Study/Addendum, pages 132 and 133.

The Air Quality Plan includes two measures to reduce $PM_{2.5}$ emissions from the project from on-site trucks. The first measure requires the loading docks to be electrified so that trucks and trailers with TRUs with plug-in capability can run their refrigeration systems on electricity instead of using diesel power. TRU $PM_{2.5}$ emissions are zero when operating on electricity. The loading dock and trailer stall electrification measure would provide a PM emission reduction from TRU use of 1.31 pounds per year in 2022. The second measure provides a commitment to prohibit idling for more than 2 minutes when the trucks are on-site. This provides a 60 percent reduction in idling emissions when compared with compliance with the ARB's idling regulation which limits idling to 5 minutes. This measure would reduce $PM_{2.5}$ emissions by 0.60 pounds per year. Although the reductions appear small, they provide substantial benefits for people working on or near the loading docks and parked trucks.

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Appendix B:
Quantification of Diesel Emissions for the Custom Goods Facility at Building 3 Warehouse in Oakland, California

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Mitchell Air Quality Consulting

October 25, 2021

Cory Alvin, Environmental Coordinator
City of Oakland, Bureau of Planning
250 Frank H. Ogawa, Suite 3315
Oakland, CA 94612

Subject: Quantification of Motor Vehicle Emissions for the Oakland Global Logistics Center Building 3 Custom Goods Project in Oakland, California

Dear Mr. Alvin:

Mitchell Air Quality Consulting (MAQC) prepared an assessment to determine the truck and passenger vehicle emissions associated with Oakland Global Logistics Center (OGLC) Building 3 Custom Goods project including transportation refrigeration units (TRU) and yard hostlers. The purpose of the assessment is to determine if the diesel emission reduction actions required by the *Air Quality Plan for Operations of Custom Goods* will reduce NO_x emissions below the Thresholds of Significance specified in the Initial Study/Addendum for development at the Oakland Army Base Project. The analysis focuses on oxides of nitrogen (NO_x) which exceeded the Bay Area Air Quality Management (BAAQMD) threshold of significance in the 2002 EIR and 2012 IS/Addendum studies. The assessment also quantified $PM_{2.5}$ which is used as a surrogate for diesel particulate matter (DPM). PM_{10} was also provided in the analysis for information only.

Project Assumptions

The project building would be used for processing incoming material from ships at the port through customs and inspections. Outgoing material that has completed customs and inspection is then loaded into trucks for shipment to its next destination. The truck trips used to haul the material to and from the port are existing trips that occur without the project. The material is currently processed at other locations inside and outside of the port and OGLC after leaving the waterfront. The only new emissions that would occur are from employee compute trips to and from the project building, material handling equipment used to position trailers and containers onsite, and additional transportation refrigeration unit (TRU) use while the trucks are parked at the project site. The analysis also assessed the overall emissions that would occur including all new and existing sources accounting for existing emissions. The modeling assumptions and results for the new and existing sources is provided in Appendix A. The new emissions include only employee commute trip emissions, onsite idling emissions, onsite TRU emissions, and onsite material handling equipment (MHE) emissions.

The analysis assessed emissions at the expected date of first operations in 2022. A second set of model runs were prepared for 2024 to match analyses prepared for previous projects for use in showing cumulative progress in staying within emission budgets based on the 15 ton per year oxides of nitrogen (NO_x) significance threshold used in the 2002 EIR. The results include the benefits of mitigation measures to reduce project emissions. The emissions represent the net increase from existing conditions. The project uses CalEEMod 2020.4.0 and California Air Resources Board (ARB) EMFAC 2017 model to estimate emissions. Offroad mobile equipment emission estimates use Offroad 2017 and CalEEMod emission factors.

Vehicle trip generation rates were provided by the future tenant (Custom Goods, Inc.). Custom Goods has experience operating a similar facility in Southern California that allows them to provide reasonable estimates of the truck trips, time trucks are onsite to load and unload material, the number of refrigerated containers/trailers to be processed, and use of material handling equipment. The facility will receive refrigerated and unrefrigerated containers from the port. Custom Goods indicates that all incoming refrigerated shipping containers are plug in capable because electricity is used to power the refrigeration units during ocean transit. The mix and volume of containers varies seasonally and changes due to market conditions. Custom Goods serves one-time customers and regular customers. Custom Goods does not arrange the transportation of any of the material processed through its facility and has no control over the vehicles arriving at the site.

TRUs are subject to United States Environmental Protection Agency (EPA) Off-Road Emission Standards and ARB Offroad Equipment Regulations. Diesel engines used to power TRUs over 25 horsepower (HP) are subject to more stringent emissions standards than those powered by engines less than 25 HP. The smaller engines have emission factors that are approximately 15 times greater for PM and 1.5 times greater for NO_x than the larger engines. The ARB prepared a new TRU inventory in 2021 that shows that increasing numbers of the smaller TRUs are being purchased. Smaller TRUs are estimated to comprise 40 to 80 percent of new TRUs depending on the application. California based trailer mounted TRUs are 40 percent under 25 HP units while out of state trailer mounted TRUs and generator powered TRUs are 80 percent under 25 HP. The TRU analysis uses the inventory percentages included in ARB emission inventory to estimate project emissions[1]. ARB is currently in the process of adopting new TRU regulations that will require the under 25 HP TRUs to meet the same standard as the over 25 HP TRUs after December 31, 2022. The new regulation would also require truck TRU fleets to phase in zero emission TRUs at 15 percent per year after December 31, 2023[2].

Analysis Results

The existing plus project emission results and the new project emissions results are included in Appendix A. Table 1 presents a summary of the new emissions that would occur as the result of the project in 2022.

Table 1: 2022 OGLC-3 Annual Air Pollutant Emissions during Operations

Emissions Source	Emissions (tons per year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Port Drayage Trucks Idling	0.00	0.17	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.03	0.00	0.00
Transportation Refrigeration Units (TRU)	0.00	0.02	0.00	0.00

[1] California Air Resources Board (ARB). 2021a. Public Hearing to Consider the Proposed Amendments to the Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, and Facilities Where TRUs Operate. Staff Report: Initial Statement of Reasons. Appendix H: 2021 Update the Emissions Inventory for Transportation Refrigeration Units. July 2021.

[2] California Air Resources Board (ARB). 2021b. PowerPoint Presentation for Board Meeting on Proposed Amendments to the Airborne Toxic Control Measure for Transportation Refrigeration Units. September 23, 2021.

Yard Hostlers and Forklift	0.03	0.23	0.01	0.01
Employee Commute	0.03	0.04	0.15	0.04
Total	**0.05**	**0.49**	**0.17**	**0.05**
BAAQMD threshold for1999	**15**	**15**	**15**	**15**
Exceed Threshold?	No	No	No	No
Notes: ROG = reactive organic gases; NO_X = nitrogen oxides; PM_{10} and $PM_{2.5}$ = particulate matter. Source: CalEEMod output and spreadsheet calculations (Appendix A).				

The analysis showed that the increase in NO_x emissions from OGLC-3 will be 0.49 tons of NO_x per year in 2022 with mitigation. Project emissions are well below the BAAQMD 1999 Threshold of Significance which is 15 tons per year. The analysis also found that exhaust PM_{10} emissions including TRUs at full operations in 2022 will be 0.17 tons/year with mitigation, which fall well below the threshold of significance for PM_{10} of 15 tons/year, and $PM_{2.5}$ emissions will be 0.05 tons/year (there was not a Threshold of Significance for $PM_{2.5}$ applicable to the 2012 project). Although there was not an applicable threshold for $PM_{2.5}$, it should be noted that emissions for $PM_{2.5}$ will not exceed the BAAQMD 2011 $PM_{2.5}$ Threshold of Significance which is 10 tons per year. The results reflect compliance with mitigation measures to reduce project emissions from vehicle idling and from TRU operation.

A second set of modeling runs was performed to show the emissions that would occur in 2024 with continued implementation of ARB motor vehicle regulations and vehicle fleet turnover as newer cleaner models are purchased and old models are retrofitted to meet fleet requirements. NO_x emissions are expected to decline by over 12 percent in just two years during this period.

Table 2: 2024 OGLC-3 Annual Air Pollutant Emissions during Operations

Emissions Source	Emissions (tons per year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Port Drayage Trucks Idling	0.00	0.12	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.03	0.00	0.00
Transportation Refrigeration Units (TRU)	0.00	0.02	0.00	0.00
Yard Hostlers and Forklift	0.03	0.23	0.01	0.01
Employee Commute	0.02	0.03	0.15	0.04
Total	**0.05**	**0.43**	**0.17**	**0.05**
BAAQMD threshold	**15**	**15**	**15**	**15**
Exceed Threshold?	No	No	No	No

Notes:

ROG = reactive organic gases NO_X = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter

Source: CalEEMod output and spreadsheet calculations (Appendix A).

The analysis used CalEEMod 2020.4.0 to estimate project emissions with trip generation rates based on information provided by the Custom Goods for truck trips and numbers of employees that will work at the project site at full operations. The tenant indicated that at full operation the project would generate 70 incoming and 70 outgoing Drayage Truck trips per day that operate only at the port and 45 incoming and 45 outgoing trips by over the road trucks (T7 Tractor) that travel to and from offsite destinations. The facility is expected to employ 140 people at full operation (100 Government Custom and Inspection staff and 40 Custom Goods staff which would generate 140 incoming and 140 outgoing trips per day during their commute to work and home, assuming no carpooling or transit use. The analysis used EMFAC 2017 emission factors for the drayage and T7 truck emissions using the composite vehicle age distribution for 2022 and 2024 and the composite vehicle speed. Modeling assumptions and modeling runs used in the analysis are provided in Appendix A.

The project will include trucks equipped with transportation refrigeration units (TRU) powered by diesel engines. The tenant estimates that 40 percent of the trucks will be equipped with TRUs (46 trucks/trailers). There are a wide variety of TRU designs installed on refrigerated trucks. The most common are powered by a small diesel engine (under 25 HP average 24.8 horsepower (HP) an over 25 HP average 33.8 HP) and they operate when the vehicle or trailer is parked and when moving. Some configurations use a diesel generator that runs the cooling system with electricity. Some of these systems can plug in at loading docks using grid power to operate the cooling system or they can operate on power from the diesel engine when no plug in is available. The project loading docks will have plug in capability, so those trucks would have no TRU emissions while at the loading docks. The refrigerated containers arriving from the port are all plug in capable. Custom Goods estimated that 10 percent of the over the road trailers accessing the site would be plug in capable. The analysis assumed that all TRUs would be diesel powered and an average of 30 of the 46 trucks with TRUs would be plugged in at the loading docks each day. The onsite semi-truck TRU emissions would be reduced by 65 percent based on these assumptions. Over time, more and more TRUs are expected to include plug in capability to take advantage of fuel savings and to comply with regulations.

A TRU emission analysis was prepared for the project for NO_x and PM emissions. The analysis uses ARB emission factors for TRUs. The ARB Airborne Toxic Control Measure for in-use Diesel Fueled TRU and TRU Generator Sets, and Facilities Where TRUs Operate requires the retrofit or replacement of all TRUs with units meeting Ultra-Low Emission standards by 2019 (0.02 g/bhp-hr) to reduce diesel particulate matter. This means that all trucks with TRUs over 25 HP accessing the site will meet this standard in 2022. The TRU NO_x emission factor used in the analysis is 4.43 g/bhp-hr based on ARB offroad emission factors for 2010 model year TRUs. TRUs over 25 HP for the 2020 model year have an emission factor of 2.7 g/bhp-hr, showing that emissions will decline as newer TRUs replace older higher emitting models. The TRUs are assumed to run 32.8 percent of the time to maintain the appropriate temperature based on survey data used in the ARB 2021 TRU Inventory Update. The onroad TRU use is considered part of the existing conditions since the trucks equipped with TRUs currently travel directly to the port from a location outside the Prologis development area. The on-road operating time to determine existing emissions was based on the time to travel the average trip length within the community (CalEEMod default 7.3 miles at 30 mph). The time of TRU operation onsite was estimated at 0.5 hour per day per TRU based on a Custom Goods estimate of 20 to 30 minutes per load. After vehicles are unloaded, no TRU operation is needed. The results for TRU use presented in Table 1 and Table 2 represent onsite TRU use only. The analysis of existing plus project TRU use is provided in Appendix A.

The loading dock electrification measure would provide a 65 percent reduction in TRU use. The measure provides a PM emission reduction from TRU use of 0.001 tons per year in 2022. NO_x reductions from this measure are 0.28 tons per year in 2022. The results of the TRU analysis are provided in Table 3.

Table 3: OGLC-3 Project TRU Emissions

Source	PM lbs/year	PM (tons/year)	NOx lbs/year	NOx (tons/year)
On Site Use Drayage and T7 Trucks	2.907	0.001	86.28	0.043
Reduction from Electric Plug In	1.889	0.001	56.08	0.28
On-Site TRU Emissions with Mitigation	**1.018**	**0.000**	**30.20**	**0.015**
Notes [1] Modeling assumptions and emission calculations are provided in Appendix A.				

The project's Air Quality Plan includes a commitment to prohibit idling for more than 2 minutes when the trucks are onsite. This provides a 60 percent reduction in idling emissions when compared with compliance with the ARB's idling regulation which limits idling to 5 minutes. Compliance with this measure would reduce NO_x emissions by 0.57 tons per year and PM emissions by 0.0002 tons per year.

The project includes offroad material handling equipment to position trailers and containers onsite. The project includes two diesel powered yard hostlers and one 35,000-pound capacity forklift. The yard hostlers and forklift are considered offroad mobile equipment. The yard hostlers are assumed to operate 2 hours per day. The forklift is assumed to operate 7 hours per day. The emission factors are based on emission factors for equipment meeting Tier 4 emission standards. The emissions from the equipment are included in Tables 1 and 2. The tenant indicates that they are considering the purchase of electric yard hostlers instead of diesel-powered models if grant funding is available to cover the cost differential. The tenant also indicates that it is likely that a 12,000-pound capacity electric forklift may be used instead of the 35,000-pound capacity diesel forklift. If these two measures are implemented, project NO_x emissions would be reduced by 0.23 tons per year to 0.26 tons per year.

OGLC-3 project emissions based on project specific information and the emissions allocated to this building in the 2012 Addendum are shown in the following Table. The reductions in TRU emissions from use of electric plug ins and from the idling reduction measure are included in the results.

The project reactive organic gas (ROG) emissions in the 2012 Addendum did not exceed the BAAQMD 1999 threshold (15 tons per year); therefore, the impact was less than significant and no mitigation measures were required to reduce ROG. Modeling results presented in the Table 4 for the project at maximum operations levels in 2022 show that ROG emissions would amount to 0.05 tons per year which is only 0.3 percent of the 1999 threshold.

Table 4: OGLC Building 3 (Custom Goods) Project NOx Emissions

Tenant	Lease Area (sf)	Annual Daily Truck Trips (M_F)	Annual Daily Employee/ Other Trips (M_F)	Emissions (tons/year)		
				NO_X (2012 EIR Transload Warehouse	NO_X (2022 Based on Project Data)	BAAQMD 1999 NOx Threshold
OGLC 3 Custom Goods	189,038	230	280	6.60	0.49	15[1]

Notes
[1] Thresholds of Significance are as specified in the 2012 Initial Study/Addendum, pages 132 and 133.
[2] Quantification of emissions from diesel trucks serving the facility uses information provided by Custom Goods including: estimated number of daily truck and employee vehicle trips. Emissions were calculated using CalEEMod 2016.3.2 with EMFAC 2017 Emission Factors for diesel trucks.

Toxic Air Contaminants

MAQC reviewed the air quality discussion contained in the 2012 IS/Addendum (for the OAB Project) and the 2002 EIR (which analyzed a larger redevelopment project, see Project Description in the 2002 EIR). The health risk discussion in the 2012 IS/Addendum referring to the results of the 2002 EIR assessment indicated that increased cancer risk from emissions for the entire OAB project were 10 in a million at receptor locations in West Oakland and 62 in a million at the property line. The BAAQMD project level threshold of 10 in a million increase in cancer risk applies to the most impacted offsite receptor. The current project no longer includes day care facilities or schools within the project site. The 2012 EIR did not include a receptor location map or an impact contour map to show the location of receptors used to determine the impact. However, the 2012 project is assumed to have included onsite receptors at day care facilities within the Research and Development/Office component that is no longer part of the project. A recreational receptor was also included for people fishing at the waterfront areas, but that receptor is located upwind of the OGLC and City of Oakland Port project area and would receive most of its impacts from ships and trucks loaded at the port. Therefore, the most impacted receptor for the current project would be located in West Oakland approximately 2,300 feet from the project boundary. DPM emissions have dropped substantially since 2002 and the health risk impacts would be proportionally lower with the reduction in DPM emissions. The analysis includes onsite DPM emissions from trucks equipped with TRUs. The TRUs add about 0.06 pounds per year of DPM at full project operation in 2022. Yard hostlers and forklifts are estimated to contribute approximately 22.0 pounds per year of DPM in 2022. Onsite truck idling contributes 0.68 pounds per year of DPM. The total project onsite DPM emissions are estimated at 22.7 pounds per year, which at 2,300 feet from the receptor would not add significantly to cancer risk in the community because of the effects of dispersion on the pollutant concentrations. The on-road emissions are considered part of the existing conditions and would not increase the risk to the neighboring community. Therefore, the impacts associated with toxic air contaminants for the OGLC-3 project would also fall below the thresholds of significance for toxic air contaminants.

Cumulative Emissions Analysis

The City of Oakland uses a project tracking spreadsheet that includes an emission budget for the cumulative projects to be constructed in the OGLC and Port areas covered by the 2002 EIR and 2012 IS/Addendum. The emissions budget for the entire OAB project is set at the 15 ton per year NO_x significance threshold. The total project 2012 NO_x operational emissions including trucks, cars, ships, tug boats and trains were 149.1 tons per year, per Table 3.3-8 of 2012 Addendum. The 2012 OGLC and Port projects were estimated at 80.80 tons/year. The budget is allocated proportionally among the uses planned for each area in amounts required to stay under the 15 ton per year NO_x threshold. This means that the cumulative emissions from the OGLC and Port areas have a NOx budget of 8.13 tons per year. The OGLC area which includes the Custom Goods project has a NO_x budget of 4.67 tons per year. The Custom Goods project estimated NO_x emissions are 0.49 tons per year of the budget in 2022. The completed and approved projects, and estimates for yet to be developed sites currently total 3.89 tons per year. NO_x emissions have declined substantially since 2012 and the uses being developed at the site are generally less intense than those assessed in the 2012 IS/Addendum and are being constructed at a slower pace than anticipated. If future uses exceed the cumulative budget, the City has committed to working with the tenants to obtain additional reductions. In addition, the ARB is expected to adopt new and modified regulations to increase the use of zero emission vehicles and equipment to achieve California greenhouse gas mandates. Therefore, the cumulative impact of the development of the plan area would comply with Mitigation Measure 4.4-4 requirement to strive to reduce redevelopment related contributions to local West Oakland diesel emissions to less than significant levels.

Table 5: Cumulative NOx Emissions Analysis for OAB

Project	NOx Emissions (Tons/Year)[1]
OAB Budget for LTS	15
OAB City Area Logistics Fair Share Budget including Port	8.13
City Logistics Area Fair Share Budget	4.67
OGLC-3 Custom Goods Fair Share Budget	0.66
OGLC-3 Custom Goods Emissions	0.49
Cumulative Projects in 2022 with Custom Goods	3.89

Cumulative Budget Remaining with Project	0.78
Are cumulative emissions under the fair share threshold?	Yes
Notes [1] Modeling assumptions and cumulative emission calculations are provided in Appendix A.	

Summary and Conclusion

Project emissions are well below all BAAQMD thresholds of significance for these pollutants. Toxic emissions impacts at the most impacted receptor location are now expected to be less than significant. The project's emissions will continue to decline as fleets serving the project comply with new regulations and adopt new technologies. The project will achieve additional reductions from implementation of onsite measures included in the facility's Air Quality Plan to reduce idling beyond ARB regulation from 5 minutes to 2 minutes and to install electric plug-ins at loading docks to reduce TRU use. The reduced idling measure provides a 60 percent reduction in idling emissions. The loading dock electrification measure reduces onsite semi-truck/trailer TRU use by 65 percent. The tenant is considering using electric yard hostlers and an electric 12,000-pound capacity forklift that would provide substantial onsite NO_x and PM reductions.

If you have any questions regarding this analysis, please call me at 559.246.3732, or via email at dmitchell@mitchellaq.com

Sincerely,

David M. Mitchell

David M. Mitchell, Owner
Mitchell Air Quality Consulting
1164 E. Decatur Avenue
Fresno, CA 93720

APPENDIX A: Modeling Assumptions and Results

Appendix A: Modeling Assumptions and Results

OGLC 3 - Custom Goods Building

Project Information

Building Size (Sq Ft)	189,038	189.038 KSF		
			Trips/day	**Round Trips**
Port Drayage Trucks	60-70 Round Trips 5 days per week		140	70
Over the Road Non Drayage	45 loads/day 5 days per week		90	45
Refrigerated Trucks	40%			
Port trucks meet Clean Truck Standard	2010 or newer engines by Jan 1, 2023			
Over the Road T7 Non Drayage	2010 or newer engines by 2020 to 2023			

Employees	1st Shift	2nd Shift
Customs and Border Protection	40 to 60	30 to 40
Custom Good Employees	40	
Max Employee Commute Estimate	140/day	280 trips/day

Onsite Equipment

Forklifts	10 6k Elec	2 12k Elec	1 35k Diesel	2 Diesel Yard Hostlers

Note: Custom Goods indicates that the 35k Diesel Forklift will be replaced by a 12k Electric Forklift

Note: Custom Goods indicates that it will use electric yard hostlers if grant funding is obtained to offset the increased cost.

Warehouse Cooling	Freon	
Distance to Nearest Receptor	2,300 Feet	Measured with Google Earth to residential area east of the site.

Expected 2022 Maritime Deliveries

Avg Daily Pos	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**	**Weekly**	**ADD**	**AADT M-F**	**Fleet Fraction**	
Drayage	70	70	70	70	70	0	0	**350**	70.00	140.00	0.609	HHD Drayage POAK
T7 Tractor	45	45	45	45	45	0	0	**225**	45.00	90.00	0.391	HHD T7 Tractor
	115							**575**	**115.00**	230.00	1.000	

Custom Goods estimate of truck trips.

Employee Count	140	
Employee Trips/Day	2	
Trips/Weekday	280	
Days per Week	5	260 Days/Year
AADT	200.00	annual average
Trips/KSF	1.058	
Trips per KSF Truck and Emp	2.27	

Fleet Mix for Single CalEEMod Run

	2022	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH	
Default Fleet Mix Alameda County	Refrigerated W	0.567723	0.056525	0.181671	0.112876	0.02128	0.005063	0.013338	0.01265	0.00082	0.000591	0.024621	0.000324	0.002519	1.000001
						0.02128	0.005063	0.013338	0.01265	0.00082	0.000591	0.024621	0.000324	0.002519	0.081206
Employee Fleet Mix Fraction		0.567723	0.056525	0.181671	0.112876	0.918795									
Employee Fleet Mix Only		0.617900	0.061521	0.197728	0.122852	0.081206	1.000001								
						1.000001									

	LDA	LDT1	LDT2	MDV	Total
Employee Passenger Vehicle Fleet Fraction	0.617900	0.061521	0.197728	0.122852	1.000001
Trips/Day (average annual)	123.58	12.30	39.55	24.57	200.00
Trips/Weekday	173.01	17.23	55.36	34.40	280.00
CalEEMod Fleet Mix Emp Only					

2012 Addendum Nox Emissions

	Miles/Trip	Trips/day	Miles	G/Mi	g/day	g/lb	lbs/day	Ton/year
Trucks	5	1438	7190	7.66	55075.4	453.592	121.420572	15.784674

lbs/day	189.4
g/mi	7.66
g/day	85,910
mi/day	11,215
Trips	1438
mi/trip	7.80

Truck Fleet Mix for CalEEMod Run

	HHD
Truck AADT Weekday	230.00
Fleet Fraction for CalEEMod	1

Passenger Vehicle Fleet Mix

	LDA	LDT1	LDT2	MDV	
CalEEMod Default Feet Mix	0.567723	0.056525	0.181671	0.112876	0.918795
Employee Trips	173.01	17.23	55.36	34.40	280.00
Fleet Fraction	0.617900	0.061521	0.197727	0.122852	1

Idling Emissions Semis and Drayage T7 Trucks

	2022		Days/Year	Vehicle Type	Trucks/Day	Fuel	NOX (g/day/truck)	Nox (g/year)	NOx (lb/Year)	Nox (Tons/Year)	PM10 (g/day)	PM10 (g/year)	PM10 (lbs/year)	PM10 (Tons/year)
Idling Emissions Grams/Day Drayage			260	T7 Drayage	70	Diesel	43.28	787,747.87	1,736.68	0.8683	0.0145	264.45	0.5830	0.0003
Idling Emissions Grams/day OTR			260	T7 Tractor	45	Diesel	25.76	75,355.63	166.13	0.0831	0.0039	45.09	0.0994	0.0000
Idling per T7 Tractor veh. per day (fraction)		0.25	Assumed 1/4 of daily idling occurs onsite for T7 Trucks					**863,103.50**	**1,902.82**	**0.9514**		**309.53**	**0.6824**	**0.0003**
Drayage Truck Idling 50% at Port 50% onsite		1												
convert grams to pounds		0.00220462												

	2022	Trucks Onsite/Day	Idling Min/Truck	Nox Emissios (g/yr)	Nox Emissions Lbs/Year	Nox Emissions Tons/Year	PM Emissions g/Year	PM Emissions lbs/year	PM Emissions Tons/Year	Nox Emission Reduction Idling (tons/yr)	
Compliance with ARB Idling Reg		115	5	863,103.50	1902.82	**0.95**	309.53	0.682	**0.0003**	0.52	Drayage
AQ Plan Measure		115	2	345,241.40	761.13	**0.38**	123.81	0.273	**0.0001**	0.05	T7
Emission Reduction					1141.69	**0.57**		0.41	**0.0002**	**0.57**	Total
Reduction Fraction					0.60			0.60			
convert grams to pounds		0.00220462									

Emission Factors from EMFAC 2017

2022	Nox (tons/year)	PM (tons/year)	2022	Unmit Nox (tons/year)	Unmit PM (tons/year)	Mit Nox (tons/yr)	Mit PM (tons/year)
Drayage Truck Idling at Port	0.4342	0.0001	Drayage Truck Idling at OGLC-3	0.4342	0.0001	0.1737	0.0001
T7 Truck Idling at Port	0.0000	0.0000	T7 Truck Idling at OGLC-3	0.0831	0.0000	0.0332	0.0000
Total	**0.4342**	**0.0001**	**Total**	**0.5172**	**0.0002**	**0.2069**	**0.0001**

50% of Drayage truck idling assumed to occur at port and half at the Custom Goods building
25% of daily idling assumed to occur at Custom Goods building

	Drayage (g/day)	Reduction Fraction	T7 (g/day)	Reduction Fraction
2024 Nox	30.98	0.28	22.21	0.78
2024 PM10	0.01	0.23	0.01	0.48

	2024	Days/Year	Vehicle Type	Trucks/Day	Fuel	NOX (g/day/truck)	Nox (g/year)	NOx (lb/Year)	Nox (Tons/Year)	PM10 (g/day)	PM10 (g/year)	PM10 (lbs/year)	PM10 (Tons/year)
Idling Emissions Grams/Day Drayage		260	T7 Drayage	**70**	**Diesel**	**30.9810**	563,854.85	1,243.09	0.6215	0.0112	203.07	0.4477	0.0002
Idling Emissions Grams/day OTR		260	T7 Tractor	**45**	**Diesel**	**22.2116**	64,968.92	143.23	0.0716	0.0080	93.59	0.2063	0.0001
Idling per T7 Tractor vehicle per day (fraction)	0.25	Assumed 1/4 of daily idling occurs onsite for T7 Trucks					**628,823.77**	**1,386.32**	**0.6932**		**296.66**	**0.6540**	**0.0003**
Drayage Truck Idling 100% onsite	1	50% drayage truck idling occurs onsite 50% at Port											
convert grams to pounds	0.00220462												

2024	Trucks/Day	Idling Min/Truck	Idling Hrs/Yr	Nox Emissions (g/yr)	Nox Emissions Lbs/Year	Nox Emissions Tons/Year	PM Emissions g/Year	PM Emissions lbs/year	PM Emissions Tons/Year	Nox Emission Reduction Idling (tons/yr)	
Compliance with ARB Idling Reg	115	5	2491.67	628,823.77	1386.32	0.69	**296.6634**	0.654	**0.0003**	0.37	Drayage
AQ Plan Measure	115	2	996.67	251,529.51	554.53	0.28	118.67	0.262	**0.0001**	0.04	T7
Emission Reduction					831.79	**0.42**		0.39	**0.0002**	0.42	Total
Reduction Fraction					0.60			0.60			

2024	Nox (tons/year)	PM (tons/year)
Drayage Truck Idling at Port	0.3108	0.0001
T7 Truck Idling at Port	0.0000	0.0000
Total	**0.3108**	**0.0001**

2024	Unmit Nox (tons/year)	Unmit PM (tons/year)	Mit Nox (tons/yr)	Mit PM (tons/year)
Drayage Truck Idling at OGLC-3	0.3108	0.0001	0.1243	**0.0000**
T7 Truck Idling at OGLC-3	**0.0716**	0.0001	0.0286	**0.0000**
Total	**0.3824**	0.0002		

Half of Drayage truck idling assumed to occur at port and half at the Custom Goods building

25 percent of daily idling assumed to occur at Custom Goods building since truck is onsite for only a small portion of each day.

TRU Emissions Estimates

Diesel Semi Truck and Container TRU Assumptions

All TRUs on shipping containers are plug in capable and use electricity while at Custom Goods docks and parking stalls
Custom Goods estimates that 10% of incoming offsite trucks are plug in capable
Incoming Trucks picking up refrigerated loads that have cleared customs arrive pre-cooled prior to arrival
Incoming Trucks are assumed to be plug in capable at 10% per Custom Goods experience at other facilities
TRUs are split between those under 25 HP and those over 25 HP per California 2021 TRU Inventory rates
Custom Goods estimates that trailers/containers are unloaded/loaded within 20-30 minutes of arrival
Custom Goods estimates that 40 percent of all trailers/containers have TRUs

California TRU Inventory Data
Fraction of TRUs Over 25 HP
Fraction of TRUs Under 25 HP

	2021 Model Annual Hours Within California	Fraction	25+ % HP	23-25% HP	TRUs 25+ HP	TRUs 23-25 HP	
California Trailer TRU	1719	0.59	0.6	0.4	16.37	10.91	
Out of State Trailer TRU	272	0.09	0.2	0.8	0.86	3.45	
California Gen Set	784	0.27	0.2	0.8	2.49	9.95	
Out of State Gen Ste	124	0.04	0.2	0.8	0.39	1.57	
	2899	**1**			**20.11**	**25.89**	**46.00**
ARB TRU 2021 Emissions Inventory App H for types of TRUs expected at site					0.44	0.56	

Trucks with TRUs Onsite Per Day M-F	46.00	260 Days/Year
AADT for Onroad Travel	92.00	Average Annual

	Over 25	Under 25	
Average HP	33.8	24.8	
Average On Time	32.8%	32.8%	Average Percent Engine On Time for 2021 TRU Emissions Inventory
Load Factor (ARB Offroad TRU)	0.38	0.46	Instate and OOS

ARB PM Standard with ATCM Compliance 25+ HP	0.022	g/bhp-hr
ARB Nox Emission Factor for TRU 2010 MY	4.43	g/bhp-hr

Emission factors from ARB Offroad Emission Tool and Tier 4 Emission Standards.

ARB PM Standard for TRUs Under 25 HP	0.3	g/bhp-hr
ARB Nox Emission Factor for TRU 2013 MY	5.6	g/bhp-hr

Emission factors from EPA Tier 4 Emission Standards

CalEEMod Default Trip Length	7.3	miles	
Average Speed over Travel Distance	30	MPH	
Time required for 7.3 miles (hrs)	0.243		
		Over 25 HP	**Under 25 HP**
ADT for HHDT 2022	230.00		
ADT for Trucks with TRUs (40%)	**92.00**	**40.22**	**51.78**

On Road PM	**PM (grams/day**	**PM (lbs/day)**	**PM lbs/year**	**PM (tons/year)**
Semi TRU PM Emissions 2022 Over 25 HP	0.907	0.002	0.520	0.000
Semi TRU PM Emissions 2022 Under 25 HP	14.144	0.031	8.107	0.004
Total PM all HP		**0.033**	**8.627**	**0.004**
convert grams to pounds	0.00220462			

PM Emission Calc Formula = HP*% Time Running*load factor*emission factor*hours/trip*avg daily Trips

On Road Nox	NOx (grams/day	NOx (lbs/day)	NOx lbs/year	NOx (tons/year)
Semi TRU Nox Emissions 2022 Over 25 HP	750.639	1.655	430.267	0.215
Semi TRU NOx Emissions 2022 Under 25 HP	1084.987	2.392	621.916	0.311
Total Nox all HP		**4.047**	**1052.183**	**0.526**

TRU Onsite Emissions

	2022	Trucks	Trucks w/TRU	TRU Op Time Per Load	Truck Time at Loading Dock (hours/day)	Total TRU Op Time (hrs/day)	TRU Run Time Over 25 HP (hrs/day)	TRU Run Time Under 25 HP (hrs/day)
HDT Trucks Onsite Per Day		115	46	32.8%	0.5	7.54	3.30	4.25

40% of HDT trucks have TRUs

	Trucks	Trucks w/TRU	Fraction Plug In	Trucks Using Plug In	Fraction Plug In Capable
Containers from Port	70	28	1	28	
Trucks from Offsite	45	18	0.1	1.8	
		46		29.8	0.65

One half hour parked at loading dock per truck - Custom Goods estimate 20-30 minutes per load
32.8% TRU Operating Time per 2021 TRU Emission Inventory

PM Emission Calc Formula = HP*% Time Running*load factor*emission factor*hours/trip*avg daily Trips

On Site PM Over 25 HP	PM (grams/day	PM (lbs/day)	PM lbs/year	PM (tons/year)
Semi TRU PM Emissions 2022 Unmitigated	0.306	0.001	0.175	0.000
Semi TRU PM Emissions 2022 Mitigated	0.107	0.000	0.061	0.000
convert grams to pounds	0.00220462		0.114	0.0001

TRUs with plug in capability can plug in at loading dock

On Site PM Under 25 HP	PM (grams/day	PM (lbs/day)	PM lbs/year	PM (tons/year)
Semi TRU PM Emissions 2022 Unmitigated	4.766	0.011	2.732	0.001
Semi TRU PM Emissions 2022 Mitigated	1.668	0.004	0.956	0.000
			1.776	0.0009

Onsite PM Total	PM (grams/day	PM (lbs/day)	PM lbs/year	PM (tons/year)
Unmitigated TRU Onsite	5.072	0.011	2.907	0.001
Mitigated TRU Onsite	1.775	0.004	1.018	0.001

On Site Nox Over 25 HP	NOx (grams/day	NOx (lbs/day)	NOx lbs/year	NOx (tons/year)
Semi TRU Nox Emissions 2022 Unmitigated	61.552	0.136	35.282	0.018
Semi TRU Nox Emissions 2022 Mitigated	21.543	0.047	12.349	0.006

On Site Nox Under 25 HP	NOx (grams/day	NOx (lbs/day)	NOx lbs/year	NOx (tons/year)
Semi TRU Nox Emissions 2022 Unmitigated	88.969	0.196	50.997	0.025
Semi TRU Nox Emissions 2022 Mitigated	31.139	0.069	17.849	0.009

Onsite Nox Total	NOx (grams/day	NOx (lbs/day)	NOx lbs/year	NOx (tons/year)
Unmitigated TRU Onsite	150.521	0.332	86.279	0.043
Mitigated TRU Onsite	52.682	0.116	30.198	0.015

Phase in schedule for TRUs meeting the ARB TRU ATCM

Table II-3: >25 HP TRU and TRU Gen Set Engines
Proposed In-Use Compliance Dates for In-Use Standards

Engine MY	In-Use Compliance Year													
	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
'01 & Older		L	L	L	L	L	L	L	U	U	U	U	U	U
'02			L	L	L	L	L	L	L	U	U	U	U	U
'03				U or L	U or L	U or L	U or L	U or L	U or L	U or L	U	U	U	U
'04					U	U	U	U	U	U	U	U	U	U
'05						U	U	U	U	U	U	U	U	U
'06							U	U	U	U	U	U	U	U
'07								U	U	U	U	U	U	U
'08									U	U	U	U	U	U
'09										U	U	U	U	U
'10											U	U	U	U
'11												U	U	U
'12													U	U
'13														U

ARB Initial Statement of Reasons for TRU ATCM 2010
U = Ultralow Emissions Standard of 0.02 g/bhp-hr

TRU Emissions Summary

2022 Emissions	PM (lbs/year)	PM (tons/year)	NOx (lbs/year)	NOx (tons/year)
On Road Use Semis	8.627	0.004	430.3	0.215
On Site Use Semis	1.018	0.001	30.2	0.015
Total On Road and On Site 2022	**9.645**	**0.005**	**460.5**	**0.230**

TRU Onsite Mitigation with Electric Plug Ins

	2022
Semi TRUs with Plug-In Capability	65%
Semi Trucks with TRUs	40%
Semi Trucks per Day 2022	115
Semi Trucks with TRUs	46
Semi Trucks with Plug In TRUs	29.9
Percent Reduction from Plug In	65%

Onsite TRU Emission Reductions

	PM lbs/year Unmitigated	PM lbs/year Mitigated	PM tons/year Mitigated	NOx lbs/year Unmitigated	Nox Tons/Year Unmitigated	NOx lbs/year Mitigated	Nox tons/year Mitigated
2022 TRU Emissions	0.175	0.06	0.0000	35.3	0.018	12.35	0.0062
Emission Reduction		0.11	0.0001			22.93	0.0115

Yard Truck (Hostler) Emissions	**Emission Rates g/bhp-hr**		
ARB Offroad Emission Factors	**2010**	**2015**	**2020**
Nox	2.66	0.64	0.12
PM	0.1	0.03	0.01
Total Hydrocarbon (THC)	0.17	0.08	0.06
Load Factor	0.39		

Emission Calculations

	Trucks	Hours/Year	Load Factor	Horsepower	Nox (g/year)	PM (g/year)	THC (g/year)
2015 Yard Hostler Emissions	2	500	0.39	200	49920	2340	6240
					Nox (lbs/year)	**PM (lbs/year)**	**THC (lbs/year)**
					110.0546	5.1588	13.7568
					Nox (tons/year)	**PM (tons/year)**	**(tons/year)**
					0.0550	**0.0026**	**0.0069**

convert grams to pounds	0.00220462

Estimated 2 hours/day of operation for each Hostler
Emission factors from ARB's Offroad Emission Calculator Tool

Diesel Forklift Emissions
Forklift with 35,000 lb lift capacity
Example Equipment: CAT DP 160N1 Diesel Forkift 16,000kg (35,274 lb) Capacity
129 kW (172 HP)

Offroad Emission Factors for Forklifts

	ROG	**Nox**	**PM10**	**PM2.5**
Emission Factor g/bhp-hr 121-175 HP	0.272	2.47982	0.132	0.122
HP	172			
Load Factor	0.2			
Hours of Operation/Day	7			
Days/Year	260			
Convert g/lbs	0.00220462			

Emission factors are from the CalEEMod 2020.2.0 User Guide Appendix F

Forklift Emissions Results	**ROG**	**Nox**	**PM10**	**PM2.5**
Emissions (pounds per day)	0.1444	1.3165	0.0701	0.0648
Emissions (pounds/year)	37.5433	342.2817	18.2195	16.8393
Emissions (tons/year)	**0.0188**	**0.1711**	**0.0091**	**0.0084**

Total Forklift and Hostler Emissions	**ROG**	**Nox**	**PM10**	**PM2.5**
Emissions (tons/year)	**0.0257**	**0.2262**	**0.0117**	**0.0110**
Emissions (pounds/year	51.3001	452.3364	23.3784	21.9981

Onsite Emission Summary

Onsite Emissions 2022 Unmitigated			**Tons/Year**	
	ROG	**NOX**	**PM10**	**PM2.5**
POAK Drayage Trucks Idling	0.0000	0.4342	0.0001	0.0001
T7 Tractor Idling	0.0000	0.0831	0.0000	0.0000
TRU Ops Onsite	0.0000	0.0431	0.0015	0.0015
Yard Hostlers and Forklift	0.0257	0.2262	0.0117	0.0110
Employee Commute	0.0283	0.0401	0.1535	0.0414
Total Onsite Emissions	**0.0540**	**0.8266**	**0.1668**	**0.0540**

Onsite Emissions 2022 Mitigated			**Tons/Year**	
	ROG	**NOX**	**PM10**	**PM2.5**
POAK Drayage Tr	0.0000	0.1737	0.0001	0.0001
T7 Tractor Idling	0.0000	0.0332	0.0000	0.0000
TRU Ops Onsite	0.0000	0.0151	0.0005	0.0005
Yard Hostlers and	0.0257	0.2262	0.0117	0.0110
Employee Comm	0.0283	0.0401	0.1535	0.0414
Total Onsite Emi	**0.0540**	**0.4883**	**0.1658**	**0.0530**

Onsite Emissions 2024 Unmitigated			**Tons/Year**	
	ROG	**NOX**	**PM10**	**PM2.5**
POAK Drayage Trucks Idling	0.0000	0.3108	0.0001	0.0001
T7 Tractor Idling	0.0000	0.0716	0.0001	0.0001
TRU Ops Onsite	0.0000	0.0431	0.0015	0.0015
Yard Hostlers and Forklift	0.0257	0.2262	0.0117	0.0110
Employee Commute	0.0240	0.0325	0.1534	0.0414
Total Onsite Emissions	**0.0497**	**0.6842**	**0.1668**	**0.0541**

Onsite Emissions 2024 Mitigated			**Tons/Year**	
	ROG	**NOX**	**PM10**	**PM2.5**
POAK Drayage Tr	0.0000	0.1243	0.0000	0.0000
T7 Tractor Idling	0.0000	0.0286	0.0000	0.0000
TRU Ops Onsite	0.0000	0.0151	0.0005	0.0005
Yard Hostlers and	0.0257	0.2262	0.0117	0.0110
Employee Comm	0.0240	0.0325	0.1534	0.0414
Total Onsite Emi	**0.0497**	**0.4267**	**0.1657**	**0.0530**

Appendix A: Emission Summary

OGLC-3 Custom Goods Criteria Pollutant Modeling Results

Unmitigated Existing Plus Project

2022		**Tons/Year**		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks	0.11	1.91	0.01	0.00
T7 Tractor Trucks	0.06	1.37	0.09	0.03
TRU	0.00	0.76	0.00	0.00
Yard Hostlers and Forklift	0.02	0.23	0.01	0.01
Employee Commute	0.05	0.06	0.21	0.06
Total	**0.25**	**4.32**	**0.33**	**0.11**

Note: PM2.5 and PM10 results inlcude fugitive dust
Truck Emissions and Employee Commute from CalEEMod Runs

Mitigated Existing Plus Project

2022		**Tons/Year**		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks	0.03	1.39	0.01	0.00
T7 Tractor Trucks	0.05	1.32	0.09	0.03
TRU	0.00	0.61	0.00	0.00
Yard Hostlers and Forklift	0.02	0.23	0.01	0.01
Employee Commute	0.05	0.06	0.21	0.06
Total	**0.16**	**3.60**	**0.33**	**0.11**

Idling Mitigation Measure to Reduce idling from 5 to 2 min 60%
Onsite TRU Mitigation Measure Electric Plug in 65%

Nox Emission Reduction Idling (tons/yr)		**TRU Nox Reduction (tons/yr)**	**TRU PM10 Reduction**
0.52	Drayage	0.15	0.000655
0.05	T7		
0.57	Total		

Unmitigated Existing Plus Project

2024		**Tons/Year**		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks	0.11	1.40	0.01	0.00
T7 Tractor Trucks	0.05	1.07	0.09	0.03
TRU	0.00	0.76	0.00	0.00
Yard Hostlers and Forklift	0.02	0.23	0.01	0.01
Employee Commute	0.05	0.05	0.21	0.06
Total	**0.23**	**3.50**	**0.33**	**0.11**

Note: PM2.5 and PM10 results inlcude fugitive dust

Mitigated Existing Plus Project

2024		**Tons/Year**		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks	0.02	1.02	0.01	0.00
T7 Tractor Trucks	0.04	0.90	0.09	0.03
TRU	0.00	0.61	0.00	0.00
Yard Hostlers and Forklift	0.02	0.23	0.01	0.01
Employee Commute	0.05	0.05	0.21	0.06
Total	**0.13**	**2.81**	**0.33**	**0.10**

Nox Emission Reduction Idling (tons/yr)		**TRU Nox Reduction (tons/yr)**	**TRU PM10 Reduction**
0.37	Drayage	0.15	0.000655
0.17	T7		
0.54	Total		

Project Onsite Emissions

Unmitigated

2022		Tons/Year		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks Idling	0.00	0.43	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.08	0.00	0.00
TRU Onsite	0.00	0.04	0.00	0.00
Yard Hostlers and Forklift	0.03	0.23	0.01	0.01
Employee Commute	0.03	0.04	0.15	0.04
Total	**0.05**	**0.83**	**0.17**	**0.05**

Note: PM2.5 and PM10 results inlcude fugitive dust

Mitigated

2022		Tons/Year		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks Idling	0.00	0.17	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.03	0.00	0.00
TRU Onsite	0.00	0.02	0.00	0.00
Yard Hostlers and Forklift	0.03	0.23	0.01	0.01
Employee Commute	0.03	0.04	0.15	0.04
Total	**0.05**	**0.49**	**0.17**	**0.05**

Idling Mitigation Measure to Reduce idling from 5 to 2 min 60%

TRU Mitigation Measure to Use Electric Power 65% Reduction

Project Onsite Emissions

Unmitigated

2024		Tons/Year		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks Idling	0.00	0.31	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.07	0.00	0.00
TRU Onsite	0.00	0.04	0.00	0.00
Yard Hostlers and Forklift	0.03	0.23	0.01	0.01
Employee Commute	0.02	0.03	0.15	0.04
Total	**0.05**	**0.68**	**0.17**	**0.05**

Mitigated

2024		Tons/Year		
Operational Emissions	**ROG**	**NOX**	**PM10**	**PM2.5**
Drayage Trucks Idling	0.00	0.12	0.00	0.00
T7 Tractor Trucks Idling	0.00	0.03	0.00	0.00
TRU Onsite	0.00	0.02	0.00	0.00
Yard Hostlers and Forklift	0.03	0.23	0.01	0.01
Employee Commute	0.02	0.03	0.15	0.04
Total	**0.05**	**0.43**	**0.17**	**0.05**

The average truck in 2018 is cleaner than trucks of the 2007 model year	0.44182925	**44.10%**
The average truck in 2018 is cleaner than trucks of the 2010 model year	0.17094232	**17.10%**

Emission factors from ARB EMFAC 2017 Web Database

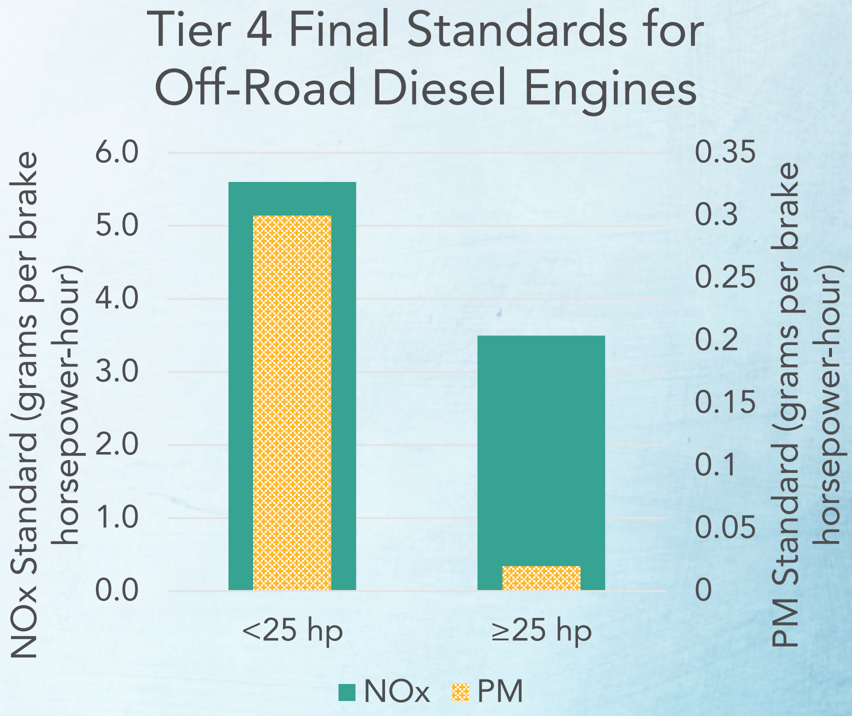
Trip Generation Rates from SCAQMD for High Cube Warehouse (New ITE 10th Edition)

Weighted Avg Daily Trips per KSF

	All Veh.	**Cars**	**All Trucks**	**5 Axle+ Trucks**	**Trucks less than 5 axle**
Transload & Short Term Storage	1.432	1.000	0.454	0.233	0.221
Truck Services (Trips/Day)	1366	902	464.4	0.5132	0.4868
37,000 sf building area		24.37	12.55		

Need to Address Emissions from Less than 25 Horsepower Non-Truck TRUs

- Emergence of <25 horsepower non-truck TRUs
- Compared to ≥25 horsepower TRUs:
  - 1.5x higher oxides of nitrogen (NOx) emissions
  - 15x higher PM emissions



CARB

Staff Propose to Transition TRUs to Zero-Emission in Two Rulemakings

Part 1 (today's staff proposal)

- Zero-emission truck TRUs
  - California-based
  - Local, regional, and return-to-base operations
- PM emission standard for newly-manufactured trailer TRUs, container TRUs, railcar TRUs, and TRU generator sets
- Lower global warming potential refrigerant

Part 2 (subsequent rulemaking)

- Zero-emission trailer TRUs, container TRUs, railcar TRUs, and TRU generator sets
  - California and out-of-state-based
  - Used in long-haul operations and do not return-to-base each day
- Direct-drive refrigeration units

gen sets registered were in the 23 to 25 horsepower range, however the data does not include enough years to be certain this is an ongoing trend. Future inventories will revisit this metric to determine the impact and longevity of trailer, rail, and gen set units in the 23 to 25 horsepower range.

Table 11. New Purchasing by Horsepower Bin

Category	Before 2015 25+ Hp / 23-25 Hp	2015 25+ Hp / 23-25 Hp	2016 and after 25+ Hp / 23-25 Hp
California Based TRU	100 / 0	70 / 30	60 / 40
Out-of-State TRU	100 / 0	20 / 80	20 / 80
California Based Gen set	100 / 0	20 / 80	20 / 80
Out-of-state Gen set	100 / 0	20 / 80	20 / 80
Rail	100 / 0	20 / 80	20 / 80

3.4. Compliance Choices

Following the application of survival curves and purchasing functions in the inventory, the inventory applies compliance choices for TRUs subject to the TRU ATCM. The TRU ATCM requires that fleet owners/operators take actions to reduce diesel particulate emissions once the engine becomes seven years old. Fleet owners have the choice of replacing the TRU unit, installing a retrofit device, or using alternative technology such as electric standby to allow the unit to run on supplied electric power while at a facility.

The compliance paths for TRUs includes;

- Install Level 3 retrofit
- Install alternative technology
- Replace unit with a new TRU with current MY engine.

In the 2019 reporting data, 86.2 percent of over 25 horsepower units complied (due either to age or actions taken), and 95.4 percent of units under 25 horsepower were in compliance, with an overall compliance rate of 89.0 percent.

For many owners of TRUs, both company and individuals, one of the primary compliance paths is the replacement of TRUs with newer units or shifting older TRUs out of the State and maintaining a fleet under 7 years of age. These actions are represented in the age distribution and are not identifiable specifically as compliance choices (i.e., there is no way to differentiate all these actions from the normal course of business). This compliance choice is implicit in the overall 89 percent compliance rate (e.g., these TRUs show up as newer units that are in compliance with the ATCM).

California Environmental Protection Agency

Air Resources Board

Diesel vehicles with a gross vehicle weight rating (GVWR) over 14,000 lbs. that operate in California (including those based out of state) must comply with ARB rules.

GVWR from 14,001 - 26,000 lbs.

NO → GVWR over 26,000 lbs.

YES → Transport cargo, containers, or chassis ultimately going to or coming from a port or intermodal rail yard in CA?

YES

NO

YES

Truck & Bus Rule

Lighter Vehicles GVWR 14,001-26,000 lbs.

- Require a 2010 or newer model year engine from January 1, 2015 to 2023

Heavier Vehicles GVWR 26,001 lbs. or more

- 1996-2004 model year engines require a diesel particulate filter now
- 2005-2006 model year engines require a diesel particulate filter by January 1, 2014
- 1993 and older engines must upgrade to 2010 or newer model year engines by January 1, 2015
- 1994-1995 engines must upgrade to 2010 or newer model year engines by January 1, 2016
- All vehicles will require 2010 or newer model year engines from January 1, 2020 to 2023

Details about additional compliance options and reporting requirements can be found at: ***arb.ca.gov/truckstop*** or **866-634-3735**

Drayage Rule

Class 7 Trucks – GVWR 26,001 – 33,000 lbs.

Class 8 Trucks – GVWR 33,001 lbs. or more

Heavy Vehicles GVWR 26,001 lbs. or more

- Class 7 trucks operating in the South Coast Air Basin require a diesel particulate filter now
- Class 8 trucks with 1994-2006 model year engines require a diesel particulate filter now
- All trucks will require 2007 or newer model year engines by January 1, 2014
- All trucks will require 2010 or newer model year engines by January 1, 2023

All drayage trucks must register in ARB's Drayage Truck Registry prior to port or rail yard entry. For more information: ***arb.ca.gov/drayagetruck*** or **888-247-4821**

Note: This page summarizes portions of ARB's Drayage and Truck and Bus rules and should not be substituted for the actual regulatory language or requirements. Your fleet may also be subject to other ARB regulations. Please contact ARB's hotlines listed on this page for additional information.

06/2013

Appendix A: Cumulative Analysis

OAB NOx Emissions in tons per year for transport trucks and passanger vehicles, allocated per Building

Prepared by Dave Mitchell, Mitchell Air Quality Consulting
April 16, 2018

2012 EIR Addendum Traffic Study Trip Generation. Data is from table in Appendix B of 2012 Addendum

OAB City Area	Site Ref 2012	Allowable building square footage	Daily Trips (cars and trucks)	Trips/KSF	Daily Car Trips	Truck Percent	Daily Truck Trips	Truck Trip Percent of Gateway Area	CalEEMod VMT	Share of 2012 Truck NOx Emissions (tons/yr)	Share of 2012 Car NOx Emisions (tons/yr)	Total 2012 NOx Emissions by Building (tons/yr)	Emissions to Achieve BAAQMD 1999 Threshold	NOx Reductions Required per Building (tons/yr)	2012 NOx Emissions/KSF
CW1	WGW	146,000	547	3.75	438	20.0%	109	8.3%		3.43	0.49	3.92	0.39	3.524	0.027
CC1	CC1	50,000	216	4.32	173	20.0%	43.2	3.3%		1.35	0.19	1.55	0.16	1.391	0.031
CC2	CC2	160,000	591	3.69	473	20.0%	118.2	9.0%		3.70	0.53	4.23	0.43	3.807	0.026
CE1		105,000	335	3.19	268	20.0%	67	5.1%		2.10	0.30	2.40	0.24	2.158	0.023
CE2		63,000	205	3.25	164	20.0%	41	3.1%		1.28	0.18	1.47	0.15	1.321	0.023
CE3		275,000	877	3.19	702	20.0%	175.4	13.3%		5.49	0.79	6.28	0.63	5.650	0.023
CC3		161,000	594	3.69	475	20.0%	118.8	9.0%		3.72	0.54	4.25	0.43	3.827	0.026
CC4		91,000	347	3.81	278	20.0%	69.4	5.3%		2.17	0.31	2.49	0.25	2.236	0.027
CC5		38,000	145	3.81	116	20.0%	29.0	2.2%		0.91	0.13	1.04	0.10	0.934	0.027
CC6,7,8, 9	Truck Stop 10 acres	37,000	1366	36.92	902	34.0%	464.44	35.2%		14.54	1.02	15.56	1.56	13.991	0.420
CN3	Truck Pkg 5 acres	0	124		82	34.0%	42.16	3.2%		1.32	0.09	1.41	0.14	1.270	0.282
CN1	CWS	206,000	284	1.38	261	8.0%	22.72	1.7%		0.71	0.29	1.01	0.10	0.904	0.005
CN2	CASS	174,000	240	1.38	221	8.0%	19.2	1.5%		0.60	0.25	0.85	0.09	0.764	0.005
Total OAB City Area		**1,506,000**	**5,871**		**4,551**		**1,320**	100.0%	**2,094,102**	**41.3**	**5.1**	**46.45**	**4.67**	**41.78**	

ITE 9th Edition Trip Generation with Current Site Plan Reference — **2017 Site Plan Allocation New Modeling** — **2017 Site Plan w/2012 Emission Rates**

OAB City Area	Site Reference 2017	Allowable building SF	Truck Percent from EIR	ITE 9th Ed Trip Gen Rate (trips/KSF)	Current Site Plan Daily Trips (cars and trucks)	Daily Car Trips	Daily Truck Trips	Trips/KSF for CalEEMod Run Cars Only	Trips/KSF for CalEEMod Run Trucks Only	Car Emissions (tons/yr)	Truck Emissions (tons/yr.)	CalEEMod Total Emissions per Building Tons/yr	Emissions to Achieve BAAQMD 1999 Threshold (tons/yr)	Nox Reductions Required per Building (tons/yr)	Emissions Based on 2012 Rate and 2017 Site Plan (tons/yr)	Emissions to Achieve BAAQMD 1999 Threshold (tons/yr)	Nox Reductions Required per Building (tons/yr)
CW1	WGW	146,000	20.0%	1.68	245	196	49			0.065	0.751	0.816	0.39	0.422	3.92	0.39	3.52
CC1	MH-1	188,000	20.0%	1.68	316	253	63			0.084	0.967	1.051	0.59	0.466	5.82	0.59	5.23
CC2	MH-1	0	20.0%	0.00	0	0	0			0.000	0.000	0.000	0.00	0.000	0.00	0.00	0.00
CE1	CE-1	256,000	20.0%	1.68	430	344	86			0.114	1.317	1.431	0.59	0.843	5.85	0.59	5.26
CE2	CE-2	232,000	20.0%	1.68	390	312	78			0.104	1.193	1.297	0.54	0.753	5.41	0.54	4.86
CE3	New Central GW	289,000	20.0%	1.68	486	388	97			0.129	1.487	1.616	0.66	0.952	6.60	0.66	5.94
CC3	New Central GW	0	20.0%	0.00	0	0	0			0.000	0.000	0.000	0.00	0.000	0.00	0.00	0.00
CC4	New Central GW	0	20.0%	0.00	0	0	0			0.000	0.000	0.000	0.00	0.000	0.00	0.00	0.00
CC5	New Central GW	0	20.0%	0.00	0	0	0			0.000	0.000	0.000	0.00	0.000	0.00	0.00	0.00
CC6,7,8, 9	Truck Services	37,000	34.0%	EIR Rate	1,366	902	464			0.299	7.111	7.410	1.56	5.845	15.56	1.56	13.99
CN3	Truck Parking	5	34.0%	0.00	124	82	42			0.027	0.645	0.673	0.14	0.531	1.41	0.14	1.27
CN1	CWS	210,000	8.0%	1.38	290	267	23			0.089	0.355	0.443	0.10	0.340	1.03	0.10	0.92
CN2	CASS	185,000	8.0%	1.38	255	235	20			0.078	0.313	0.391	0.09	0.300	0.90	0.09	0.81
Total OAB City Area		**1,543,005**			**3,902**	**2,978**	**924**	**1.930**	**0.599**	**0.99**	**14.14**	**15.13**	**4.68**	**10.45**	**46.49**	**4.68**	**41.81**

OAB Port Area		Allowable building square footage	Daily Trips (cars and trucks)	Trips/KSF	Daily Car Trips	Truck Percentage	Truck Trips	Truck Trip Percent of Port Area	CalEEMod VMT	Share of 2012 Truck NOx Emissions (tons/yr)	Share of 2012 Car NOx Emisions (tons/yr)	Total 2012 NOx Emissions by Building (tons/yr)	Emissions to Achieve BAAQMD 1999 Threshold	Reductions Required per Building (tons/yr)	2012 Emissions/KSF
PL1, PL2 PL3, PL4		130,000	495	3.81	396.0	20.00%	99	10.1%		3.10	0.45	3.55	0.36	3.189	0.027
PL5, PL6		101,000	398	3.94	318.4	20.00%	79.6	8.1%		2.49	0.36	2.85	0.29	2.564	0.028
PL7		303,000	1023	3.38	818.4	20.00%	204.6	20.8%		6.41	0.92	7.33	0.74	6.590	0.024
PL8		139,000	522	3.76	417.6	20.00%	104.4	10.6%		3.27	0.47	3.74	0.38	3.363	0.027
PL9		173,000	631	3.65	504.8	20.00%	126.2	12.8%		3.95	0.57	4.52	0.45	4.065	0.026
PL10	Truck Pkg 7 acres	18,000	173	9.61	114.2	34.00%	58.82	6.0%		1.84	0.13	1.97	0.20	1.772	0.109
PL11	Truck Pkg 8 acres	18,000	198	11.00	130.7	34.00%	67.32	6.8%		2.11	0.15	2.25	0.23	2.028	0.125
PR1	OG TIC Railyard	155 employees	715	4.61	471.9	34.00%	243.1	24.7%		7.61	0.53	8.14	0.82	7.323	0.053
Total OAB Port		**882,000**	**4,155**		**3,172**		**983.04**	100.0%	**1,355,197**	**30.78**	**3.57**	**34.35**	**3.46**	**30.89**	
Total City & Port OAB			**10,026**		**7,723**		**2,303**			**72.1**	**8.7**	**80.80**	**8.13**	**72.67**	
Total Project 2012 NOx operational emissions including trucks, cars, ships, tug boats & trains, per Table 3.3-8 of 2012 Addendum												**149.10**	**15**		

OAB Port Area	Site Reference 2017	Allowable Building SF	Truck Percent from EIR	ITE 9th Ed Trip Gen Rate (trips/KSF)	Current Site Plan Daily Trips (cars and trucks)	Daily Car Trips	Daily Truck Trips	Trips/KSF for CalEEMod Run Cars Only	Trips/KSF for CalEEMod Run Trucks Only	Car Emissions (tons/yr)	Truck Emissions (tons/yr.)	CalEEMod Total Emissions per Building Tons/yr	Emissions to Achieve BAAQMD 1999 Threshold	Nox Reductions Required per Building (tons/yr)	Emissions Based on 2012 Rate (tons/year)	Emissions to Achieve BAAQMD 1999 Threshold (tons/yr)	Nox Reductions Required per Building (tons/yr)
PL1, PL2 PL3, PL4	PL1, PL2 PL3, PL4	130,000	20.0%	1.68	218.4	174.7	43.7			0.097	0.896	0.993	0.36	0.636	3.55	0.36	3.19
PL5, PL6	PL5, PL6	101,000	20.0%	1.68	169.7	135.7	33.9			0.076	0.696	0.771	0.29	0.485	2.85	0.29	2.56
PL7	PL7	303,000	20.0%	1.68	509.0	407.2	101.8			0.227	2.087	2.314	0.74	1.577	7.33	0.74	6.59
PL8	PL8	139,000	20.0%	1.68	233.5	186.8	46.7			0.104	0.957	1.062	0.38	0.685	3.74	0.38	3.36
PL9	PL9	173,000	20.0%	1.68	290.6	232.5	58.1			0.130	1.192	1.321	0.45	0.867	4.52	0.45	4.06
PL10	PL10	18,000	34.0%	EIR Rate	173	114.2	58.8			0.064	1.206	1.270	0.20	1.071	1.97	0.20	1.77
PL11	PL11	18,000	34.0%	EIR Rate	198	130.7	67.3			0.073	1.380	1.453	0.23	1.226	2.25	0.23	2.03
PR1	PR1	155	34.0%	EIR Rate	715	471.9	243.1			0.263	4.984	5.247	0.82	4.428	8.14	0.82	7.32
Total OAB Port		**882,155**			**2507.28**	**1,853.8**	**653.5**	**2.101**	**0.741**	**1.03**	**13.40**	**14.4**	**3.46**	**10.98**	**34.35**	**3.46**	**30.89**
Total City & Port OAB											**27.54**	**29.6**	**8.13**	**21.43**	**80.84**	**8.13**	**72.71**
											Totals	**98.6**	**15**		**149.1**	**15**	

Used EIR Trip numbers for pads with truck parking only

Total Emissions for cars and trucks for 2012 from EIR Addendum Table 3.3-8
Daily trips from EIR Addendum

2012 Total Nox	**161.1**
2012 Truck and Car	**80.8**
2012 Other	**80.30**
Existing Emissions	**12**
2012 Net Increase	**149.10**

2018 Truck and Car	**29.56**
2018 Other	**81**
2018 Total Nox	**110.56**
Existing Emissions	**12**
2018 Increase	**98.56**

	Square Feet	Truck trips per KSF	Truck Trips/Day	CalEEMod VMT/Year	CalEEMod VMT
Prologis Bldg CE-1 Project	256,136	0.31263232	80.1	135,989	**135,989**
Bldg CE- 1 Proj SCAQMD Trip Rate		0.233	59.7		**108,915**
OARB	1,000,000	0.983	983.0	1,355,197	
Gateway	1,000,000	1.320	1,319.9	2,094,102	
			2,303.0	3,449,299	

Used 1 million square feet to simplify the CalEEMod analysis since truck trips are known from traffic study and some land uses are based on acres.

	Miles
Average Trip Length from 2012 EIR	5

Transport Truck NOx Emissions

		NOx	PM10	PM2.5	PM2.5 ex
OARB Area		20.70	0.61	0.19	0.03
Entire Gateway Dev Area		31.73	0.94	0.30	0.05
Total Truck Emissions OARB and Gateway		**52.43**	**1.55**	**0.49**	**0.09**
Oakland Bldg 1	1.4 mile Trip Length	**1.17**	**0.01**	**0.00**	
Oakland Bldg 1	SCAQMD Trip Gen	**1.54**	**0.05**	**0.014**	**0.003**
Fraction of Total Truck Emissions EIR		**0.021**	**0.046**	**0.024**	
Fraction of Total Truck Emissions CalEEMod		0.029	0.029	0.029	
Oakland Bldg 1	ITE 8th Ed	**2.060**	**0.061**	**0.019**	**0.004**
Project Fraction of Truck Emis CalEEMod		**0.039**	**0.039**	**0.039**	
Project Fraction of Truck Emissions		**0.029**	**0.061**	**0.032**	
Project Fraction of Total Ops Emissions		**0.013**	**0.022**	**0.007**	
2012 EIR Truck Emissions		**72.10**	**1.00**	**0.60**	
2012 EIR Operational Emissions		**161.10**	**2.80**	**2.70**	

CalEEMod Emissions from Site Ref 2017

	NOx Car Only	NOx Truck Only	Total
Gateway	0.99	14.14	15.13
Port Area	1.03	13.40	14.43
			29.56

Used 5 mile truck trip length from EIR
CalEEMod 2016 Trip Gen based on ITE 150 9th edition

Trip Length Estimate

Distance to Waterfront	2.35
Distance to I880	0.5
Average Trip Length (50/50 split)	**1.425**

		All Trips	Truck Trips (20%)	Size (KSF)	Trips/KSF	Truck Trips/KSF
2012 EIR	CE1, CE2, CE3	1,417	283.4	443	3.1986456	0.312632322
	Entire Gateway	7,695				

OARB NOx Emission Analysis in Tons per Year for Transport Trucks and Passenger Vehicles Using Current Project Information

Updated by Dave Mitchell, Mitchell Air Quality Consulting
October 21, 2021

	KSF[3]	Truck Trips (Daily)	Truck Trips/KSF[1]	Employees	Employee Trips	Emp Trips/KSF[1]	1st Op Yr Truck NOx[6]	1st Op Year Car NOx[6]	Total NOx	2024 Truck Only	2024 Car NOx	2024 Total NOx
PODS Storage Facility (CE-1) 2018[2]	256	60.0	0.234	20	40	0.156	0.85	0.01	**0.87**	0.76	0.01	**0.76**
Good Egg (CE2 2019 Half)	116	343.0	0.454	300	543		0.64	0.02	**0.66**	0.56	0.11	**0.68**
CE2 2020 Half	116	52.7	0.454		116	1.00	0.62	0.03	**0.65**	0.43	0.02	**0.45**
NCGW (CC-1) OGLC-3 2022[8]	189	230.0	1.217	140	280	0.76	0.45	0.04	**0.49**	0.40	0.04	**0.44**
NCGW (CC-1)	0	0.0	0		0	0.00	0.00	0.00	**0.00**	0.00	0.00	**0.00**
NCGW Con Global Container Storage[4]	3											
MH1 Bulk rail to Drayage Truck 2019[7]	100	45.4	0.454		100	1.00	0.57	0.03	**0.60**	0.37	0.02	**0.39**
CW-1 Bulk Terminal 2021	146	66.3	0.454		146	1.00	0.73	0.03	**0.77**	0.54	0.02	**0.56**
Total Prologis/CCIG	**926**	**797.3**			**1225**				**4.03**			**3.28**
Port Project												
Port 2019 Part 1	220	99.9	0.454		220	1.00	1.26	0.09	**1.35**	0.82	0.03	**0.85**
Port 2020 Part 2	220	99.9	0.454		220	1.00	1.18	0.05	**1.24**	0.82	0.03	**0.85**
Port 2023 Part 3	221	100.3	0.454		221	1.00	0.83	0.06	**0.89**	0.82	0.03	**0.85**
Port 2024 Part 4 (5 yr lease on existing)	221	100.3	0.454		221	1.00	0.82	0.05	**0.87**	0.82	0.03	**0.85**
Total Port OAB	**882**	**400.4**			**882**				**4.34**			**3.40**
Truck Parking 2020[5]	0	464.4			902		7.78	0.22	**8.00**	5.36	0.13	**5.49**
Truck Services 2020[5]	37	42.2			82		0.50	0.02	**0.52**	0.40	0.01	**0.42**
CWS 2020[5]	210	23.2			267		0.20	0.05	**0.24**	0.14	0.02	**0.16**
CASS 2020[5]	185	20.4			235		0.17	0.04	**0.21**	0.11	0.03	**0.14**
Total Truck Prkg & Recyclers @City's OAB		**550.2**			**1485**				**8.97**			**6.20**
Grand Total for Trucks and Passenger Vehicles		**1,748.0**			**3592**				**17.34**			**12.88**

Notes:

1. Based on ITE 10th edition trip rates for high-cube warehouses, transloading use.
2. Based on truck trip and employee data from PODS (tenant with 10-year lease) based on their operations at other sites
3. Based on Prologis actual development projections for warehouse sizes and typical leasing timing.
4. Conglobal container storage yard - truck trips are already at Port of Oakland, no new employee or trucks trips were modeled.
5. Based on 2012 Addendum trip generation numbers, not ITE rates.
6. Varies based on year building will begin operations
7. MH1 building is 100,000 SF out of 188,000 sf allowed
8. OGLC-3 provides freight services for trucks already accessing and working at the port. Analysis includes employee and onsite activities only.

Cumulative NOx Emissions in Tons per Year for Transport Trucks and Passenger Vehicles 2018 to 2024

Prepared by Dave Mitchell, Mitchell Air Quality Consulting October 21, 2021

	2018	2019	2020	2021	2022	2023	2024	2024	2012 EIR[1]	Red. need to LTS[2] in 2024	Red need to LTS[2] in 1st Op yr
CE-1 (Tenant: Pods)	0.87	0.85	0.83	0.82	0.80	0.78	0.76	0.76	0.59	0.18	0.28
CE-2 Part 1		0.66	0.66	0.66	0.84	0.76	0.68				
CE-2 Part 2			0.65	0.61	0.57	0.53	0.45	1.12	0.54	0.58	0.77
NCGW Part 1 (OGLC-3 Tenant Custom Goods)				0.00	0.49	0.47	0.43	0.43	0.66	-0.23	-0.17
NCGW Part 2 (no longer split in 2 parts)				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MH-1 Bulk Silicon Pellets		0.60	0.56	0.52	0.47	0.43	0.39	0.39	0.59	-0.20	0.02
CW-1 Bulk Terminal				0.77	0.72	0.67	0.56	0.56	0.39	0.17	0.37
Totals for Gateway Projects	**0.87**	**2.11**	**2.71**	**3.37**	**3.89**	**3.63**	**3.27**	**3.27**	**2.77**	**0.50**	**1.26**
Port Area Pt 1		1.35	1.25	1.15	1.05	0.95	0.85	0.85			
Port Area Pt 2			1.24	1.14	1.04	0.95	0.85	0.85			
Port Area Pt 3						0.89	0.85	0.85			
Port Area Pt 4							0.85	0.85			
Total Port Area		**1.35**	**2.48**	**2.29**	**2.09**	**2.78**	**3.40**	**3.4**	**3.46**	**-0.06**	**0.86**
Cumulative Total Logistics Projects	**0.87**	**3.45**	**5.19**	**5.66**	**5.98**	**6.41**	**6.67**	**6.67**	**6.23**	**0.44**	**2.12**
Threshold for LTS Logistics Projects	**6.24**	**6.24**	**6.24**	**6.24**	**6.24**	**6.24**	**6.24**				
Gateway Non-Logistics Projects											
Truck Services[5]			8.00	7.37	6.74	6.12	5.49	5.49	1.56	3.92	6.43
Truck Parking[5]			0.52	0.50	0.47	0.44	0.42	0.42	0.14	0.27	0.38
CWS[5]			0.24	0.22	0.20	0.18	0.16	0.16	0.10	0.05	0.14
CASS[5]			0.21	0.19	0.17	0.16	0.14	0.14	0.09	0.05	0.12
Total for Non-Logistics Proj			**8.97**	**8.28**	**7.59**	**6.89**	**6.20**	**6.20**	**1.90**	**5.67**	**7.07**
Threshold for Non-Logistics Proj			**1.9**	**1.9**	**1.9**	**1.9**	**1.9**				
Cumulative Total Gateway and Port	**0.87**	**3.45**	**14.16**	**13.94**	**13.56**	**13.31**	**12.87**	**12.87**	**8.13**	**6.11**	**9.19**
Threshold for Trucks and Cars	**8.14**	**8.14**	**8.14**	**8.14**	**8.14**	**8.14**	**8.14**				

Notes:

1.2012 EIR -Nox Emissions per Building calculated using 2012 Oakland Army Base Project Initial Study/Addendum

2. LTS = Less than Significant

Comparison of EMFAC 2017 Emission Factors for Specfic Model Years and Aggregated Fleets

		NOx Running Emissions (g/mile)	NOx Idling Emissions (g/veh/day)	NOx Starting Emission (g/trip)	
T7 Tractor Aggregated Model Years	2018	**5.90**	28.85	0.98	Average Emissions all Ages in 2018 Fleet
T7 Tractor Aggregated Model Years	2020	**4.58**	27.55	1.23	Average Emissions all Ages in 2020 Fleet
T7 Tractor Aggregated Model Years	2024	**2.02**	22.21	1.86	Average Emissions all Ages in 2024 Fleet
T7 Tractor 2007 Model Year Only	2007	**10.58**	30.46	0.00	Emissions from 2007 Model Year Trucks
T7 Tractor 2010 Model Year Only	2010	**7.61**	33.23	0.26	Emissions from 2010 Model Year Trucks

Oakland Global Project

	Redevelopment District Trip Generation (Passenger Cars Only)																
		Amount	Trip Generation	Source	Equivalent	Distribution				Trips Generated							
	Land Use		Land Use Category		Amount	AM Peak		PM Peak		Daily	AM Peak Hour			PM Peak Hour			
						In	Out	In	Out		In	Out	Total	In	Out	Total	
	Gateway Development Area																
	CW (WEST GATEWAY)**																
	OPTION A																
TAZ	CW1 - BULK WAREHOUSE	146 KSF	Warehousing	ITE (150)	146 KSF	79%	21%	25%	75%	547	64	17	81	15	46	61	(20% trucks)(ITE 150)
162	OPTION B																
	CW2 - R & D	115 KSF															
	CW3 - R & D	60 KSF															
	CW2, CW3 - Subtotal	175 KSF	Research & Development	ITE (760)	175 KSF	83%	17%	15%	85%	1,566	175	36	211	30	171	202	(1.84% trucks)(ITE 76
	CC (CENTRAL GATEWAY)**																
	CC1 - TRANSLOAD WAREHOUSE	50 KSF	Warehousing	ITE (150)	50 KSF	79%	21%	25%	75%	216	35	9	45	8	23	30	(20% trucks)(ITE 150)
1415	CC2 - TRANSLOAD WAREHOUSE	160 KSF	Warehousing	ITE (150)	160 KSF	79%	21%	25%	75%	591	68	18	85	16	48	64	(20% trucks)(ITE 150)
1416	CC3 - TRANSLOAD WAREHOUSE	161 KSF	Warehousing	ITE (150)	161 KSF	79%	21%	25%	75%	594	68	18	86	16	49	65	(20% trucks)(ITE 150)
	CC4 - TRANSLOAD WAREHOUSE	91 KSF															
163	CC5 - TRANSLOAD WAREHOUSE	38 KSF															
	CC4, CC5 - Subtotal	129 KSF	Warehousing	ITE (150)	129 KSF	79%	21%	25%	75%	492	60	16	76	14	42	56	(20% trucks)(ITE 150)
1410	CC6, CC7, CC8, CC9 - Subtotal	10.0 Acres	Truck Stop	SANBAG	10 Acres	41%	59%	43%	57%	1,366	40	58	99	135	180	315	
	CN (NORTH GATEWAY)**																
1412	CN1 - RECYCLING FACILITY	206 KSF	General Heavy Industrial	ITE (120)		83%	17%	21%	79%	284	80	16	97	27	102	129	(8% trucks)(ITE 130)
160	CN2 - RECYCLING FACILITY	174 KSF	General Heavy Industrial	ITE (120)		83%	17%	21%	79%	240	68	14	82	23	86	109	(8% trucks)(ITE 130)
1410	CN3 - TRUCK SERVICES	5.0 Acres	Truck Parking	'02 DEIR	5 Acres	41%	59%	43%	57%	124	5	2	7	2	7	9	(34% trucks)(ITE 030)
	CE (EAST GATEWAY)**																
	CE1 - TRANSLOAD WAREHOUSE	105															
1408	CE2 - TRANSLOAD WAREHOUSE	63															
	CE3 - TRANSLOAD WAREHOUSE	275															
	CE1, CE2, CE3 - Subtotal	443 KSF	Warehousing	ITE (150)	443 KSF	79%	21%	25%	75%	1,417	118	31	150	31	93	123	(20% trucks)(ITE 150)
170	PL10 - TRUCK PARKING	7 Acres	Truck Parking	'02 DEIR	7 Acres	41%	59%	43%	57%	173	6	3	9	3	10	13	(34% trucks)(ITE 030)
	PL9 - TRANSLOAD WAREHOUSE	173 KSF	Warehousing	ITE (150)	173 KSF	79%	21%	25%	75%	631	70	19	89	17	51	68	(20% trucks)(ITE 150)
	Subtotal Gateway Development Area									7,695	794	241	1,035	322	861	1,183	
171	**Port Area (Includes OARB Port Area and Maritime Sub-district**																
	OARB Port Area																
	PL8 - TRANSLOAD WAREHOUSE	139 KSF	Warehousing	ITE (150)	139 KSF	79%	21%	25%	75%	522	62	17	79	15	44	59	(20% trucks)(ITE 150)
	PL5 - TRANSLOAD WAREHOUSE	57 KSF															
169	PL6 - TRANSLOAD WAREHOUSE	44 KSF															
	PL5, PL6 - Subtotal	101 KSF	Warehousing	ITE (150)	101 KSF	79%	21%	25%	75%	398	52	14	66	12	36	48	(20% trucks)(ITE 150)
1414	PL7 - TRANSLOAD WAREHOUSE	303 KSF	Warehousing	ITE (150)	303 KSF	79%	21%	25%	75%	1,023	96	25	121	24	73	97	(20% trucks)(ITE 150)
	PL1 - TRANSLOAD WAREHOUSE	37 KSF															
	PL2 - TRANSLOAD WAREHOUSE	44 KSF															
164	PL3 - TRANSLOAD WAREHOUSE	43 KSF															
	PL4 - TRANSLOAD WAREHOUSE	43 KSF															
	PL1, PL2, PL3, PL4 - Subtota	130.4 KSF	Warehousing	ITE (150)	130 KSF	79%	21%	25%	75%	495	60	16	76	14	42	56	(20% trucks)(ITE 150)
1407	PL11 - TRUCK PARKING	8.0 Acres	Truck Parking	'02 DEIR	8 Acres	41%	59%	43%	57%	198	7	3	11	3	12	15	(34% trucks)(ITE 030)
1409	PR1 - OGTIC Railyard	155 Emp.	Truck Terminal	ITE (030)	155 Emp.	40%	60%	47%	53%	715	26	12	38	11	42	54	(34% trucks)(ITE 030)
	Subtotal Port Project Area									3,351	304	88	392	79	249	329	
	Project Total									11,046	1,099	329	1,428	401	1,111	1,512	

Not Part of the Project

	Marine Terminals															
1401	Berths 20-26 Ports America	248 Acres	Marine Terminal	ITE (010)	248 Acres	68%	32%	68%	32%	1,834	67	31	98	67	31	98
259	Berths 30-37 Trapac & Evergreen	156 Acres	Marine Terminal	ITE (010)	156 Acres	68%	32%	68%	32%	1,152	42	20	62	42	20	62
1406	Berths 55-56 Hanjin	120 Acres	Marine Terminal	ITE (010)	120 Acres	68%	32%	68%	32%	888	32	15	48	32	15	48
258	Berths 57-59 SSA	150 Acres	Marine Terminal	ITE (010)	150 Acres	68%	32%	68%	32%	1,109	41	19	60	41	19	60
254	Berths 60-63 APL / Eagle	120 Acres	Marine Terminal	ITE (010)	120 Acres	68%	32%	68%	32%	888	32	15	48	32	15	48
253	Berths 67-68 SSA	53 Acres	Marine Terminal	ITE (010)	53 Acres	68%	32%	68%	32%	392	14	7	21	14	7	21
	Maritime Support															
1413	PAG Services	300 Emp.	General Office Building	ITE (710)	300 Emp.	88%	12%	17%	83%	1,120	151	21	172	29	142	171
	Rail Terminals[b]															
260	OIG	100 Emp.	Truck Terminal	ITE (030)	100 Emp.	68%	32%	21%	79%	461	17	8	25	7	27	35
257	UP	146 Emp.	Truck Terminal	ITE (030)	146 Emp.	68%	32%	21%	79%	674	25	12	36	11	40	51
	Subtotal Rail Terminals (includes OGTIC									1,850	68	32	99	29	110	139

Source: *Trip Generation, 8th Edition*, Institute of Transportation Engineers, 2008

[a] Truck trips are reported as one vehicle.

[b] No new non-intermodal traffic would be generated due to changes in the size of rail terminal facilities.

Appendix A: CalEEMod Output

CalEEMod Output

Operation Employee 2022 (Annual)

Custom Goods Employee Trips

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 63

Climate Zone 5 **Operational Year** 2022

Utility Company Pacific Gas and Electric Company

CO2 Intensity (lb/MWhr) 203.98 **CH4 Intensity (lb/MWhr)** 0.033 **N2O Intensity (lb/MWhr)** 0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Vehicle Trips - 280 employee trips/day

Fleet Mix - Fleet mix for employee trips only.

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.01	0.00
tblFleetMix	LDA	0.57	0.62
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT2	0.18	0.20
tblFleetMix	LHD1	0.02	0.00

tblFleetMix	LHD2	5.0630e-003	0.00
tblFleetMix	MCY	0.02	0.00
tblFleetMix	MDV	0.11	0.12
tblFleetMix	MH	2.5190e-003	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	8.2000e-004	0.00
tblFleetMix	SBUS	3.2400e-004	0.00
tblFleetMix	UBUS	5.9100e-004	0.00
tblVehicleTrips	ST_TR	2.12	0.00
tblVehicleTrips	SU_TR	2.12	0.00
tblVehicleTrips	WD_TR	2.12	280.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**1-19-2022**	**4-18-2022**	0.0092	0.0092
		Highest	0.0092	0.0092

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.0538	0.0564	0.6668	1.8900e-003	0.2135	1.1500e-003	0.2146	0.0568	1.0600e-003	0.0578	0.0000	173.7454	173.7454	6.4600e-003	5.5300e-003	175.5534
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.0584**	**0.0573**	**0.6676**	**1.9000e-003**	**0.2135**	**1.2200e-003**	**0.2147**	**0.0568**	**1.1300e-003**	**0.0579**	**0.2642**	**176.9991**	**177.2632**	**0.0257**	**5.7700e-003**	**179.6230**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.0538	0.0564	0.6668	1.8900e-003	0.2135	1.1500e-003	0.2146	0.0568	1.0600e-003	0.0578	0.0000	173.7454	173.7454	6.4600e-003	5.5300e-003	175.5534
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.0584**	**0.0573**	**0.6676**	**1.9000e-003**	**0.2135**	**1.2200e-003**	**0.2147**	**0.0568**	**1.1300e-003**	**0.0579**	**0.2642**	**176.9991**	**177.2632**	**0.0257**	**5.7700e-003**	**179.6230**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	4/1/2022	4/7/2022	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0538	0.0564	0.6668	1.8900e-003	0.2135	1.1500e-003	0.2146	0.0568	1.0600e-003	0.0578	0.0000	173.7454	173.7454	6.4600e-003	5.5300e-003	175.5534
Unmitigated	0.0538	0.0564	0.6668	1.8900e-003	0.2135	1.1500e-003	0.2146	0.0568	1.0600e-003	0.0578	0.0000	173.7454	173.7454	6.4600e-003	5.5300e-003	175.5534

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	280.00	0.00	0.00	583,902	583,902
Total	280.00	0.00	0.00	583,902	583,902

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.617900	0.061521	0.197727	0.122852	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
NaturalGas Mitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
NaturalGas Unmitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.1891	7.5500e-003	1.8000e-004	0.4317
Unmitigated	0.1891	7.5500e-003	1.8000e-004	0.4317

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Output

Operations – Drayage Trucks 2022 (Annual)

Custom Goods Drayage Truck Only 2022

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Vehicle Trips - Drayage truck trips from Port to Site and Back. 140 trips/day

Fleet Mix - HHD Drayage Trucks Only

Vehicle Emission Factors - EMFAC 2017 T7 Drayage Emission Factors for 2022.

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.01	1.00
tblFleetMix	LDA	0.57	0.00
tblFleetMix	LDT1	0.06	0.00
tblFleetMix	LDT2	0.18	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.0630e-003	0.00
tblFleetMix	MCY	0.02	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	2.5190e-003	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	8.2000e-004	0.00
tblFleetMix	SBUS	3.2400e-004	0.00
tblFleetMix	UBUS	5.9100e-004	0.00
tblVehicleEF	HHD	6.00	43.28
tblVehicleEF	HHD	3.38	6.40
tblVehicleEF	HHD	2.01	1.14
tblVehicleEF	HHD	3.0840e-003	0.01
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.03	0.04
tblVehicleEF	HHD	2.9500e-003	0.01
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9210e-003	9.0000e-003
tblVehicleEF	HHD	0.03	0.04
tblVehicleEF	HHD	0.45	2.62
tblVehicleEF	HHD	0.08	0.27
tblVehicleTrips	CC_TL	7.30	0.50
tblVehicleTrips	CNW_TL	7.30	0.50
tblVehicleTrips	CW_TL	9.50	0.50
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	2.12	0.00

tblVehicleTrips	SU_TR	2.12	0.00
tblVehicleTrips	WD_TR	2.12	140.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**1-20-2022**	**4-19-2022**	0.0092	0.0092
		Highest	0.0092	0.0092

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.1106	1.9085	0.2601	7.0000e-004	7.7200e-003	1.3200e-003	9.0400e-003	2.1200e-003	1.2600e-003	3.3900e-003	0.0000	68.3781	68.3781	1.4500e-003	0.0108	71.6282
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.1151**	**1.9094**	**0.2608**	**7.1000e-004**	**7.7200e-003**	**1.3900e-003**	**9.1100e-003**	**2.1200e-003**	**1.3300e-003**	**3.4600e-003**	**0.2642**	**71.6317**	**71.8959**	**0.0207**	**0.0110**	**75.6978**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.1106	1.9085	0.2601	7.0000e-004	7.7200e-003	1.3200e-003	9.0400e-003	2.1200e-003	1.2600e-003	3.3900e-003	0.0000	68.3781	68.3781	1.4500e-003	0.0108	71.6282
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.1151**	**1.9094**	**0.2608**	**7.1000e-004**	**7.7200e-003**	**1.3900e-003**	**9.1100e-003**	**2.1200e-003**	**1.3300e-003**	**3.4600e-003**	**0.2642**	**71.6317**	**71.8959**	**0.0207**	**0.0110**	**75.6978**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	4/2/2022	4/8/2022	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

<u>Trips and VMT</u>

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

<u>Unmitigated Construction On-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1106	1.9085	0.2601	7.0000e-004	7.7200e-003	1.3200e-003	9.0400e-003	2.1200e-003	1.2600e-003	3.3900e-003	0.0000	68.3781	68.3781	1.4500e-003	0.0108	71.6282
Unmitigated	0.1106	1.9085	0.2601	7.0000e-004	7.7200e-003	1.3200e-003	9.0400e-003	2.1200e-003	1.2600e-003	3.3900e-003	0.0000	68.3781	68.3781	1.4500e-003	0.0108	71.6282

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	140.00	0.00	0.00	18,200	18,200
Total	140.00	0.00	0.00	18,200	18,200

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	0.50	0.50	0.50	59.00	0.00	41.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
NaturalGas Mitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
NaturalGas Unmitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.1891	7.5500e-003	1.8000e-004	0.4317
Unmitigated	0.1891	7.5500e-003	1.8000e-004	0.4317

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Output

Operations T7 Trucks 2022 (Annual)

Custom Goods T7 Truck Only 2022

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 63

Climate Zone 5 **Operational Year** 2022

Utility Company Pacific Gas and Electric Company

CO2 Intensity (lb/MWhr) 203.98 **CH4 Intensity (lb/MWhr)** 0.033 **N2O Intensity (lb/MWhr)** 0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Vehicle Trips - Off site truck travel 90 trips/day

Fleet Mix - HHD T7 Trucks Only

Vehicle Emission Factors - EMFAC 2017 HHD T7 Emission Factors for 2022

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.01	1.00
tblFleetMix	LDA	0.57	0.00
tblFleetMix	LDT1	0.06	0.00
tblFleetMix	LDT2	0.18	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.0630e-003	0.00
tblFleetMix	MCY	0.02	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	2.5190e-003	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	8.2000e-004	0.00
tblFleetMix	SBUS	3.2400e-004	0.00
tblFleetMix	UBUS	5.9100e-004	0.00
tblVehicleEF	HHD	6.00	25.76
tblVehicleEF	HHD	3.38	2.99
tblVehicleEF	HHD	2.01	1.56
tblVehicleEF	HHD	3.0840e-003	0.02
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.03	0.04
tblVehicleEF	HHD	2.9500e-003	0.01
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9210e-003	9.0000e-003
tblVehicleEF	HHD	0.03	0.04
tblVehicleEF	HHD	0.45	1.89
tblVehicleEF	HHD	0.08	0.06
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	2.12	0.00
tblVehicleTrips	SU_TR	2.12	0.00
tblVehicleTrips	WD_TR	2.12	90.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	1-20-2022	4-19-2022	0.0092	0.0092
		Highest	0.0092	0.0092

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.0618	1.3654	0.2642	3.2900e-003	0.0853	9.2900e-003	0.0946	0.0235	8.8900e-003	0.0324	0.0000	321.3979	321.3979	6.9500e-003	0.0508	336.6966
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.0663**	**1.3663**	**0.2649**	**3.3000e-003**	**0.0853**	**9.3600e-003**	**0.0947**	**0.0235**	**8.9600e-003**	**0.0324**	**0.2642**	**324.6515**	**324.9157**	**0.0262**	**0.0510**	**340.7662**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.0618	1.3654	0.2642	3.2900e-003	0.0853	9.2900e-003	0.0946	0.0235	8.8900e-003	0.0324	0.0000	321.3979	321.3979	6.9500e-003	0.0508	336.6966
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.0663**	**1.3663**	**0.2649**	**3.3000e-003**	**0.0853**	**9.3600e-003**	**0.0947**	**0.0235**	**8.9600e-003**	**0.0324**	**0.2642**	**324.6515**	**324.9157**	**0.0262**	**0.0510**	**340.7662**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	4/2/2022	4/8/2022	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

<u>Trips and VMT</u>

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

<u>Unmitigated Construction On-Site</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0618	1.3654	0.2642	3.2900e-003	0.0853	9.2900e-003	0.0946	0.0235	8.8900e-003	0.0324	0.0000	321.3979	321.3979	6.9500e-003	0.0508	336.6966
Unmitigated	0.0618	1.3654	0.2642	3.2900e-003	0.0853	9.2900e-003	0.0946	0.0235	8.8900e-003	0.0324	0.0000	321.3979	321.3979	6.9500e-003	0.0508	336.6966

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	90.00	0.00	0.00	201,193	201,193
Total	90.00	0.00	0.00	201,193	201,193

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
NaturalGas Mitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
NaturalGas Unmitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.1891	7.5500e-003	1.8000e-004	0.4317
Unmitigated	0.1891	7.5500e-003	1.8000e-004	0.4317

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Output

Operations - Employee (2024)

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Custom Goods Employee Trips 2024

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 63

Climate Zone 5 **Operational Year** 2024

Utility Company Pacific Gas and Electric Company

CO2 Intensity (lb/MWhr) 203.98 **CH4 Intensity (lb/MWhr)** 0.033 **N2O Intensity (lb/MWhr)** 0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Vehicle Trips - 280 employee trips/day

Fleet Mix - Fleet mix for employee trips only.

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.01	0.00
tblFleetMix	LDA	0.57	0.62
tblFleetMix	LDT1	0.06	0.06
tblFleetMix	LDT2	0.18	0.20
tblFleetMix	LHD1	0.02	0.00

tblFleetMix	LHD2	5.1690e-003	0.00
tblFleetMix	MCY	0.02	0.00
tblFleetMix	MDV	0.11	0.13
tblFleetMix	MH	2.4510e-003	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	7.9200e-004	0.00
tblFleetMix	SBUS	3.3700e-004	0.00
tblFleetMix	UBUS	5.7000e-004	0.00
tblVehicleTrips	ST_TR	2.12	0.00
tblVehicleTrips	SU_TR	2.12	0.00
tblVehicleTrips	WD_TR	2.12	280.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**1-19-2022**	**4-18-2022**	0.0092	0.0092
		Highest	0.0092	0.0092

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.0458	0.0454	0.5889	1.7900e-003	0.2136	1.0600e-003	0.2147	0.0568	9.7000e-004	0.0578	0.0000	167.0861	167.0861	5.3900e-003	4.8600e-003	168.6692
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.0503**	**0.0462**	**0.5897**	**1.8000e-003**	**0.2136**	**1.1300e-003**	**0.2148**	**0.0568**	**1.0400e-003**	**0.0579**	**0.2642**	**170.3397**	**170.6039**	**0.0246**	**5.1000e-003**	**172.7388**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.0458	0.0454	0.5889	1.7900e-003	0.2136	1.0600e-003	0.2147	0.0568	9.7000e-004	0.0578	0.0000	167.0861	167.0861	5.3900e-003	4.8600e-003	168.6692
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.0503**	**0.0462**	**0.5897**	**1.8000e-003**	**0.2136**	**1.1300e-003**	**0.2148**	**0.0568**	**1.0400e-003**	**0.0579**	**0.2642**	**170.3397**	**170.6039**	**0.0246**	**5.1000e-003**	**172.7388**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	4/1/2022	4/7/2022	5	5	

Acres of Grading (Site Preparation Phase): 0

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Mitigated	0.0458	0.0454	0.5889	1.7900e-003	0.2136	1.0600e-003	0.2147	0.0568	9.7000e-004	0.0578	0.0000	167.0861	167.0861	5.3900e-003	4.8600e-003	168.6692
Unmitigated	0.0458	0.0454	0.5889	1.7900e-003	0.2136	1.0600e-003	0.2147	0.0568	9.7000e-004	0.0578	0.0000	167.0861	167.0861	5.3900e-003	4.8600e-003	168.6692

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	280.00	0.00	0.00	583,902	583,902
Total	280.00	0.00	0.00	583,902	583,902

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.617900	0.061521	0.197727	0.128520	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
NaturalGas Mitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
NaturalGas Unmitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.1891	7.5500e-003	1.8000e-004	0.4317
Unmitigated	0.1891	7.5500e-003	1.8000e-004	0.4317

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

CalEEMod Output

Operations – Drayage Trucks 2024 (Annual)

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Custom Goods Drayage Truck Only 2024

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 63

Climate Zone 5 **Operational Year** 2024

Utility Company Pacific Gas and Electric Company

CO2 Intensity (lb/MWhr) 203.98 **CH4 Intensity (lb/MWhr)** 0.033 **N2O Intensity (lb/MWhr)** 0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Vehicle Trips - Drayage truck trips from Port to Site and Back. 140 trips/day

Fleet Mix - HHD Drayage Trucks Only

Vehicle Emission Factors - EMFAC 2017 T7 Drayage Emission Factors for 2022.

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.01	1.00
tblFleetMix	LDA	0.57	0.00
tblFleetMix	LDT1	0.06	0.00
tblFleetMix	LDT2	0.18	0.00

tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.1690e-003	0.00
tblFleetMix	MCY	0.02	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	2.4510e-003	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	7.9200e-004	0.00
tblFleetMix	SBUS	3.3700e-004	0.00
tblFleetMix	UBUS	5.7000e-004	0.00
tblVehicleEF	HHD	5.47	30.98
tblVehicleEF	HHD	2.59	4.16
tblVehicleEF	HHD	2.28	1.76
tblVehicleEF	HHD	2.3430e-003	0.01
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.03	0.02
tblVehicleEF	HHD	2.2410e-003	0.01
tblVehicleEF	HHD	8.9250e-003	0.03
tblVehicleEF	HHD	0.02	0.02
tblVehicleEF	HHD	0.45	2.62
tblVehicleEF	HHD	0.02	0.03
tblVehicleTrips	CC_TL	7.30	0.50
tblVehicleTrips	CNW_TL	7.30	0.50
tblVehicleTrips	CW_TL	9.50	0.50
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	2.12	0.00
tblVehicleTrips	SU_TR	2.12	0.00

tblVehicleTrips	WD_TR	2.12	140.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**1-20-2022**	**4-19-2022**	0.0092	0.0092
		Highest	0.0092	0.0092

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.1058	1.3957	0.2729	6.6000e-004	7.7200e-003	7.9000e-004	8.5000e-003	2.4700e-003	7.5000e-004	3.2200e-003	0.0000	64.3739	64.3739	1.4100e-003	0.0102	67.4357
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.1103**	**1.3966**	**0.2736**	**6.7000e-004**	**7.7200e-003**	**8.6000e-004**	**8.5700e-003**	**2.4700e-003**	**8.2000e-004**	**3.2900e-003**	**0.2642**	**67.6276**	**67.8917**	**0.0206**	**0.0104**	**71.5053**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.1058	1.3957	0.2729	6.6000e-004	7.7200e-003	7.9000e-004	8.5000e-003	2.4700e-003	7.5000e-004	3.2200e-003	0.0000	64.3739	64.3739	1.4100e-003	0.0102	67.4357
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.1103**	**1.3966**	**0.2736**	**6.7000e-004**	**7.7200e-003**	**8.6000e-004**	**8.5700e-003**	**2.4700e-003**	**8.2000e-004**	**3.2900e-003**	**0.2642**	**67.6276**	**67.8917**	**0.0206**	**0.0104**	**71.5053**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	4/2/2022	4/8/2022	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1058	1.3957	0.2729	6.6000e-004	7.7200e-003	7.9000e-004	8.5000e-003	2.4700e-003	7.5000e-004	3.2200e-003	0.0000	64.3739	64.3739	1.4100e-003	0.0102	67.4357
Unmitigated	0.1058	1.3957	0.2729	6.6000e-004	7.7200e-003	7.9000e-004	8.5000e-003	2.4700e-003	7.5000e-004	3.2200e-003	0.0000	64.3739	64.3739	1.4100e-003	0.0102	67.4357

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	140.00	0.00	0.00	18,200	18,200
Total	140.00	0.00	0.00	18,200	18,200

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	0.50	0.50	0.50	59.00	0.00	41.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
NaturalGas Mitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
NaturalGas Unmitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.1891	7.5500e-003	1.8000e-004	0.4317
Unmitigated	0.1891	7.5500e-003	1.8000e-004	0.4317

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Operations T7 Trucks 2024 (Annual)

Custom Goods T7 Truck Only 2024

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2024
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Vehicle Trips - Off site truck travel 90 trips/day

Fleet Mix - HHD T7 Trucks Only

Vehicle Emission Factors - EMFAC 2017 HHD T7 Emission Factors for 2022

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.01	1.00
tblFleetMix	LDA	0.57	0.00
tblFleetMix	LDT1	0.06	0.00
tblFleetMix	LDT2	0.18	0.00

tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.1690e-003	0.00
tblFleetMix	MCY	0.02	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	2.4510e-003	0.00
tblFleetMix	MHD	0.01	0.00
tblFleetMix	OBUS	7.9200e-004	0.00
tblFleetMix	SBUS	3.3700e-004	0.00
tblFleetMix	UBUS	5.7000e-004	0.00
tblVehicleEF	HHD	5.47	22.21
tblVehicleEF	HHD	2.59	2.02
tblVehicleEF	HHD	2.28	1.86
tblVehicleEF	HHD	2.3430e-003	7.9990e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	2.2410e-003	7.6530e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.9250e-003	9.0000e-003
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	0.45	1.88
tblVehicleEF	HHD	0.02	0.02
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	2.12	0.00
tblVehicleTrips	SU_TR	2.12	0.00
tblVehicleTrips	WD_TR	2.12	90.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.7300e-003	3.5200e-003	4.5300e-003	1.0000e-005	0.0000	2.0000e-004	2.0000e-004	0.0000	2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Maximum	**5.7300e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**1-20-2022**	**4-19-2022**	0.0092	0.0092
		Highest	0.0092	0.0092

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.0526	1.0682	0.2475	3.0800e-003	0.0853	6.4900e-003	0.0918	0.0235	6.2100e-003	0.0297	0.0000	301.5024	301.5024	6.5400e-003	0.0476	315.8614
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.0572**	**1.0691**	**0.2483**	**3.0900e-003**	**0.0853**	**6.5600e-003**	**0.0919**	**0.0235**	**6.2800e-003**	**0.0298**	**0.2642**	**304.7560**	**305.0202**	**0.0257**	**0.0479**	**319.9310**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.1379	3.1379	3.7000e-004	6.0000e-005	3.1652
Mobile	0.0526	1.0682	0.2475	3.0800e-003	0.0853	6.4900e-003	0.0918	0.0235	6.2100e-003	0.0297	0.0000	301.5024	301.5024	6.5400e-003	0.0476	315.8614
Waste						0.0000	0.0000		0.0000	0.0000	0.1908	0.0000	0.1908	0.0113	0.0000	0.4727
Water						0.0000	0.0000		0.0000	0.0000	0.0734	0.1158	0.1891	7.5500e-003	1.8000e-004	0.4317
Total	**0.0572**	**1.0691**	**0.2483**	**3.0900e-003**	**0.0853**	**6.5600e-003**	**0.0919**	**0.0235**	**6.2800e-003**	**0.0298**	**0.2642**	**304.7560**	**305.0202**	**0.0257**	**0.0479**	**319.9310**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	4/2/2022	4/8/2022	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	5.2100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**5.7200e-003**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

3.2 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0526	1.0682	0.2475	3.0800e-003	0.0853	6.4900e-003	0.0918	0.0235	6.2100e-003	0.0297	0.0000	301.5024	301.5024	6.5400e-003	0.0476	315.8614
Unmitigated	0.0526	1.0682	0.2475	3.0800e-003	0.0853	6.4900e-003	0.0918	0.0235	6.2100e-003	0.0297	0.0000	301.5024	301.5024	6.5400e-003	0.0476	315.8614

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Refrigerated Warehouse-No Rail	90.00	0.00	0.00	201,193	201,193
Total	90.00	0.00	0.00	201,193	201,193

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Refrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Refrigerated Warehouse-No Rail	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.1965	2.1965	3.6000e-004	4.0000e-005	2.2182
NaturalGas Mitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
NaturalGas Unmitigated	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Refrigerated Warehouse-No Rail	17640	1.0000e-004	8.6000e-004	7.3000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9413	0.9413	2.0000e-005	2.0000e-005	0.9469
Total		**1.0000e-004**	**8.6000e-004**	**7.3000e-004**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.9413**	**0.9413**	**2.0000e-005**	**2.0000e-005**	**0.9469**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Refrigerated Warehouse-No Rail	23740	2.1965	3.6000e-004	4.0000e-005	2.2182
Total		**2.1965**	**3.6000e-004**	**4.0000e-005**	**2.2182**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	4.4300e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**4.4300e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.1891	7.5500e-003	1.8000e-004	0.4317
Unmitigated	0.1891	7.5500e-003	1.8000e-004	0.4317

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Refrigerated Warehouse-No Rail	0.23125 / 0	0.1891	7.5500e-003	1.8000e-004	0.4317
Total		**0.1891**	**7.5500e-003**	**1.8000e-004**	**0.4317**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.1908	0.0113	0.0000	0.4727
Unmitigated	0.1908	0.0113	0.0000	0.4727

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Refrigerated Warehouse-No Rail	0.94	0.1908	0.0113	0.0000	0.4727
Total		**0.1908**	**0.0113**	**0.0000**	**0.4727**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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Appendix C:
ARB 2021 Staff Report Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units

Appendix H: 2021 Update to Emissions Inventory for Transport Refrigeration Units

July 2021

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1. Summary and Background

This report covers the updates to the California Air Resources Board's (CARB) emissions inventory for transport refrigeration units (TRU). The previous inventory was released in 2011, and documentation is available online.[1] The recent updates include improvements to TRU populations, annual activity, emission factors, compliance choices under the Airborne Toxic Control Measure for In-Use Diesel-Fueled TRUs and TRU Generator Sets, and Facilities where TRUs Operate (TRU ATCM),[2] and growth factors. The updates were developed to provide data for CARB's 2019 Preliminary Health Analysis of TRUs.[3]

TRUs are diesel-powered refrigeration units installed on vehicles such as trucks, trailers, shipping containers, and railcars. The TRU emissions inventory also includes generator sets (gen set), systems designed to provide electricity to electrically-driven refrigeration units (including those on semi-trailer vans and shipping containers). TRUs are responsible for the safe transportation of most refrigerated goods, including meats, produce, dairy, and certain medicine and chemical products.

The diesel engines that power TRUs and TRU gen sets are a significant source of a number of pollutants, but are of particular concern due to the emissions of particulate matter under 2.5 microns in diameter (PM2.5) at locations and facilities where a large number of TRUs operate simultaneously, concentrating their emissions impact in the surrounding communities.

TRUs operating in California are subject to the TRU ATCM, which generally requires that TRUs meet in-use performance standards seven years after the engine model year. There are several ways to be in compliance with the in-use performance standards, meeting the U.S. EPA Tier 4 final emission standards for 25-50 horsepower engines, installing a Level 3 filter (with at least 85 percent PM control) on the TRU engine, or using a qualifying alternative technology. Compliance may also be maintained by replacing the existing unit (engine and refrigeration system) with a new TRU with a Tier 4 engine, which would then be in compliance until the seventh year after the replacement TRU's engine model year.

Although TRUs operate across the State, their impact is often concentrated in communities near facilities where dozens of TRUs may be operating simultaneously and continously.

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[1] *https://ww3.arb.ca.gov/msei/ordiesel.htm*

[2] *https://ww3.arb.ca.gov/diesel/tru/tru.htm*

[3] California Air Resources Board, Preliminary Health Analyses of Transport Refrigeration Units, October 18, 2019. (web link: *https://ww3.arb.ca.gov/cc/cold-storage/documents/hra_healthanalyses2019.pdf*)

California's anti-idling rule for trucks does not apply to TRU operations or reduce their emissions.

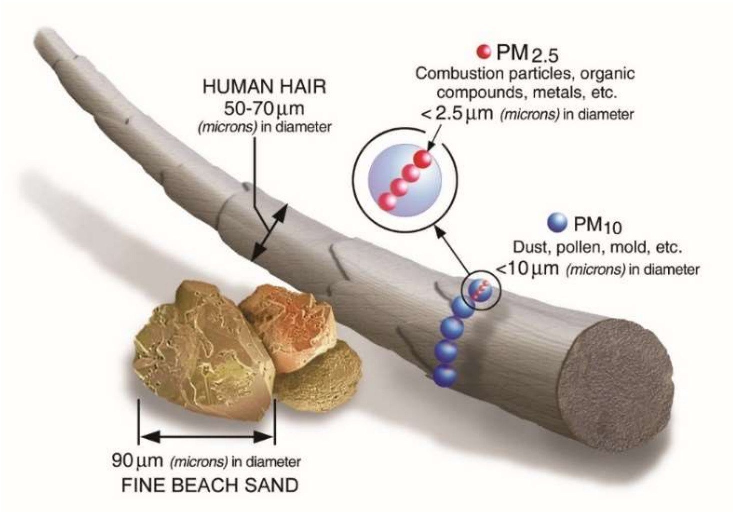
Figure 1 shows an example of a food distribution facility in Southern California.

Figure 1. Food Distribution Facility

TRUs are a relatively high source of particulate matter (PM) due to the lack of tight controls for particulate matter in the new engine standards for smaller diesel engines (see Section 2.1 below). These ultrafine particles are significantly smaller than most dust, pollen, and other sources of particulates, as shown in Figure 2. More information on the health risks associated with PM2.5 is available on CARB's website.[4]

[4] *https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health*

Figure 2. Particulate Matter Size Comparison



1.1. TRU Categories

TRU categories are determined based on the type of truck or container they are cooling (such as a single body truck, trailer, shipping container, or railcar) and the horsepower of the TRU. These groupings are important in identifying average horsepower, load factor, activity, percent of time spent in California, and turnover and purchasing habits.

Truck TRU: TRUs used to cool all types of single body trucks are referred to as truck TRUs. Generally, truck TRUs have between 7 and 19 horsepower, with an average of 13.9 horsepower. These trucks are generally used for local and regional delivery, and are assumed to be captive, meaning they do not leave California and all activity is within the State.

Trailer TRU: Trailer TRUs are the most common TRU type and are attached to trailers pulled by semi-trucks. Traditionally all trailer TRUs were rated between 25 and 35 horsepower. However, in the last few years, trailer TRUs were produced with engines between 23 and 25 horsepower. There are two subsets of trailer TRUs.

> **California Trailer TRU:** These TRUs are registered to a company or agency based in California and are required to register in the ARB Equipment Registration Program (ARBER) database.[5] California trailer TRUs are often used in long-haul transport and are not captive to California, since they often visit other states to deliver or bring in trailer loads. A majority of their activity is assigned to California.

[5] *https://ww2.arb.ca.gov/our-work/programs/transport-refrigeration-unit*

Out-of-State Trailer TRU: These TRUs are not registered to a company based in California and may voluntarily register in the ARBER database. A small fraction of their activity is assigned to California.

Railcar TRU: These TRUs supply refrigeration to railcar containers and are pulled by locomotives. A small fraction of their time is spent in California.

TRU Gen set: These TRUs are a gen set that provides power to a non-integrated refrigeration unit. Similar to trailer TRUs, most TRU gen sets were previously rated above 25 horsepower, but recent data from the ARBER database shows a majority of gen sets now sold are 23 to 25 horsepower engine units. Again, there are two subsets of TRU gen sets.

California TRU gen set: TRU gen sets are registered to a company based in California with reporting requirements in the ARBER database. Similar to trailer TRUs, a majority of their activity is assigned to California.

Out-of-State TRU gen set: These are TRU gen sets that are not registered to a company based in California and may voluntarily report tin the ARBER database. A small fraction of their activity occurs in California.

1.2. Emissions Inventory Methodology Overview and Sources

The following steps summarize the inventory process and identify each data source, with more detail included later in the report:

1. ARBER supplies TRU population data, including model year, horsepower, and any reported aftertreatment information
    a. Population data is scaled up based on CARB enforcement data that indicates not all TRUs report in ARBER (e.g., 96.3 percent of TRUs are assumed to be reported in ARBER database).
    b. Out-of-State TRUs are scaled up based on heavy duty truck populations from the EMFAC model as they have voluntary reporting requirements.
2. Activity is assigned based on survey data and TRU telematics reports. Activity is distributed for portion of time spent in-state vs out-of-state for trailer TRUs, railcars, and gen sets based on VMT patterns for in-state versus out-of-state trucks.
3. Load factors are assigned by TRU category, using analysis from the 2011 inventory, and supplemented by TRU telematics reports. TRU efficiency improvements in some categories are reflected in this step.
4. Future years are forecasted by applying a growth rate, along with a survival and purchasing curve based on reported age distributions.
5. Forecasted compliance with the TRU ATCM is based on observed compliance choices in the ARBER database and data from CARB's enforcement program.

6. Emissions are calculated for base and future years using Equation 1.

Emissions=Population*Activity*Hp*LF*EF* FCF (Equation 1)

Where:

Population =	Count of equipment population
Activity =	Time the engine is running (hours)
Hp =	Horsepower (max brake horsepower) of the engine
LF =	Load factor (unit-less)
EF =	Emission factor (grams/kW-hr) specific to horsepower and model year and pollutant, and includes deterioration
FCF =	Fuel correction factor (unit-less) based on calendar year

2. TRU Data Base Year Inputs and Analysis

This section discusses data sources and analysis for the TRU emissions inventory model, including population, activity, load factor, and emission factors. These inputs are the foundation of the model and all forecasted years are built on this base year data.

2.1. Population and Age Distribution

The ARBER database provides a record of California-based TRUs and a partial record of TRUs that entered the State but are not based in California. Under the TRU ATCM, owners of TRUs based in California are required to report their TRUs to the ARBER database, with an initial reporting deadline of July 31, 2009. Owners of TRUs that are based outside California may report their TRUs but are not required to do so.

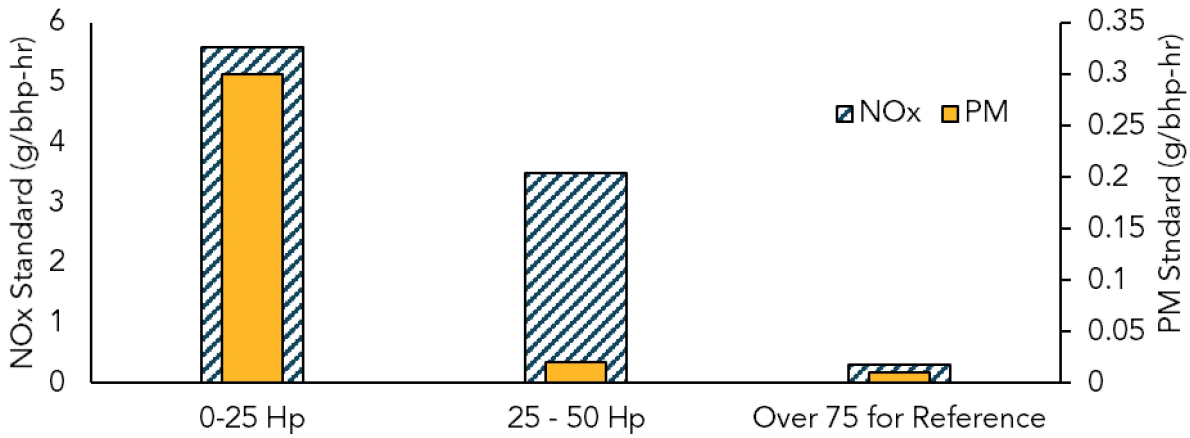
The ARBER database maintains reported information for each TRU, including the unit's model year, the engine model year, and any compliance actions taken, such as a diesel particulate filter (DPF) installation or engine replacement or rebuild. The database does not include information on annual activity, the amount of fuel used, or the load factor. As such, ARBER data can be used to analyze population and age distributions, but not activity.

Data from the ARBER database was retrieved in November 2019 and is the primary input to estimate TRU population and age distribution in the 2021 TRU inventory.

The largest change in this new data set is the emergence of 23 to 25 horsepower trailer TRU engines. Figure 3 compares the difference in oxides of nitrogen (NOx) and PM emission factors (in grams per brake-horsepower-hour) according to horsepower groupings. Units with engines under 25 horsepower have standards for PM 15 times higher than units with more than 25 horsepower, and emission standards NOx 1.5 times higher.

In the 2011 inventory, all trailer TRUs had engines ranging from 25 to 50 horsepower. Figure 3 includes diesel engines over 75 horsepower for comparison, although there are no TRUs in the inventory in this horsepower range. The diesel engines under 25 horsepower have significantly higher PM emissions standards because they lack DPFs and they have higher NOx emission standards as they also lack selective catalytic reduction systems (SCR). Diesel engines over 25 horsepower are expected to have DPFs or similar, and no SCRs. For comparison's sake only, most diesel engines above 75 horsepower are expected to have DPFs and SCRs, or equivalent emissions reduction. The increase of PM and NOx from engines between 23 and 25 horsepower is significant as the emergence of these smaller engines will become responsible for the majority of TRU emissions in the near future, if current trends continue.

Figure 3. Tier 4 Final Standards for Off-Road Diesel Engines by Horsepower Bin

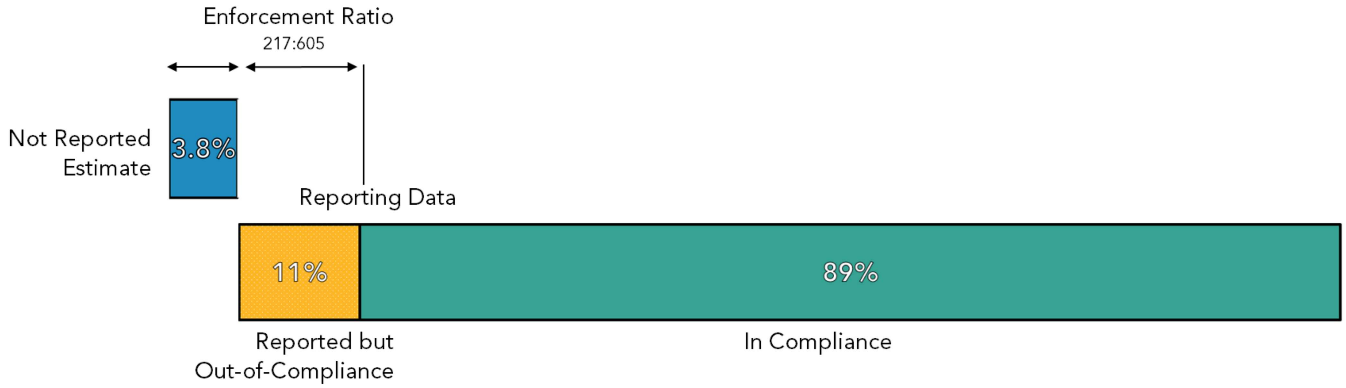


2.1.1. Population and Non-Reporting

Although TRUs based in California are required to report in ARBER, there is some level of non-compliance with this reporting requirement. Based on CARB enforcement data from 2009 and 2010, the previous 2011 model scaled up California units registered in ARBER by 3.12 percent to correct for those units that were not registered. New calendar year 2016 CARB enforcement data for TRUs was used to update the non-reporting factor in the 2021 inventory.

According to 2016 CARB enforcement data, non-compliance due to non-reporting was responsible for 217 violations, while non-compliance due to other issues was responsible for 605 violations. Essentially, for every three TRUs out of compliance for issues other than reporting, one was out of compliance for failure to report. The 2019 ARBER reporting data indicates that compliant TRUs account for 89 percent of the population. Therefore, the remaining reported but non-compliant TRUs account for 11 percent. By applying the same ratio for non-reported units to reported but non-compliant units, the 3 to1 ratio can be multiplied by the 11 percent of non-compliant TRUs in the 2020 ARBER database. This results in a non-reporting rate of 3.75 percent, as shown in Figure 4 below.

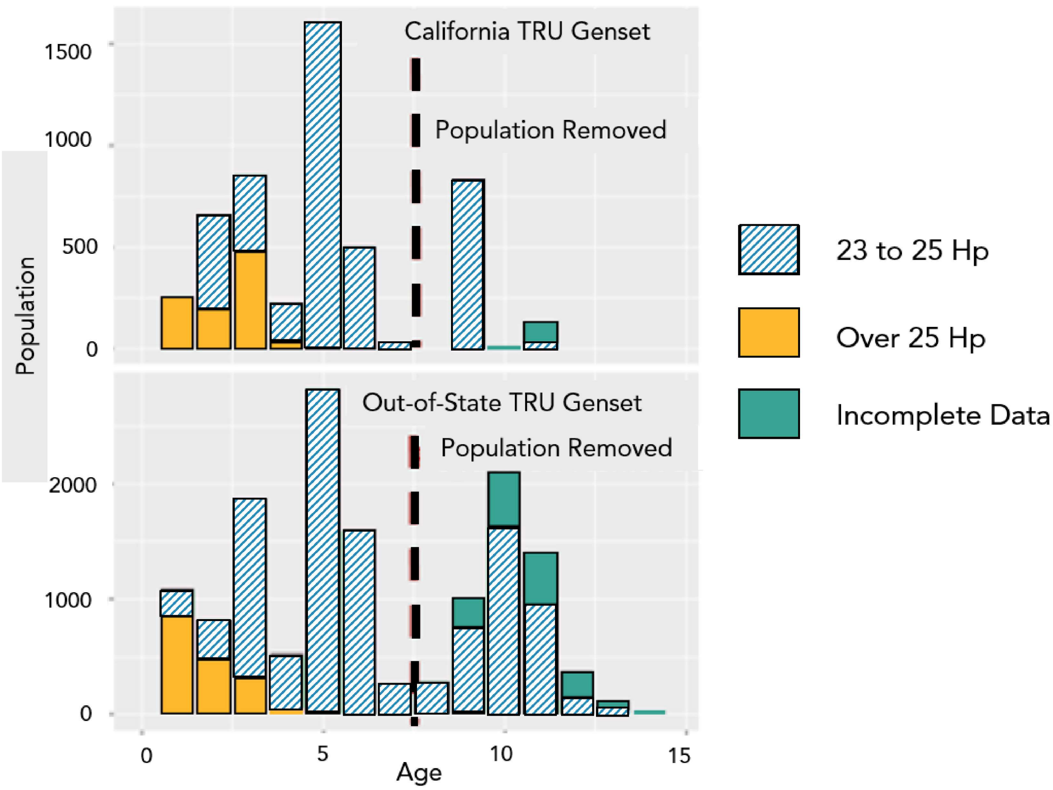
Figure 4. Determining TRU Non-Reporting Rates



2.1.2. TRU Gen Set Age Distribution Adjustments

According to information from TRU gen set owners and operators, as well as CARB staff, many TRU gen sets deemed non-compliant with the TRU ATCM remain registered in ARBER even though they are no longer brought into California. This was verified with data supplied by the TRU gen set companies as they have an electronic tracking program. The inventory reflects this practice by removing non-compliant TRU gen sets (those older than 7 years of age) from the base population from the ARBER dataset, for both in-state and out-of-state TRU gen sets. Figure 5 shows the age distributions before this adjustment, with all units older than 7 years of age removed following the compliance adjustment.

Figure 5. TRU Gen Set Age Distribution before Adjustment



2.1.3. Out-of-State TRU Population Scaling

Out-of-state TRUs are not required to report to ARBER, meaning the reporting data represents only a fraction of the total population of out-of-state units. To estimate the entire population of TRUs visiting California each year, the inventory uses the ratio for in-state versus out-of-state trucks from CARB's on-road mobile source emissions inventory, EMFAC2017.[6] Trucks used in the analysis were limited to T6 and T7, or medium-heavy and heavy-heavy duty truck types as those are most likely to pull a refrigerated trailer. Public trucks, port trucks, utility trucks, and other truck types unlikely to pull a refrigerated trailer were excluded.

Table 1 shows the in-state and out-of-state truck populations in a calendar year, and the ratio between the categories. Based on this analysis, the out-of-state trailer TRU population was scaled up to equal the number of California trailer TRUs multiplied by the ratio 3.64. This creates a target population of out-of-state TRUs of 131,160 (or 3.64 times the in-state population of registered TRUs).

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[6] EMFAC2017, *https://www.arb.ca.gov/emfac/2017/*

Table 1. In-State and Out-of-State (T6 and T7) Truck Populations from EMFAC2017 from Applicable Categories

Truck Category	Population
Out-of-State[7]	601,690
In-state	165,300
Ratio of Out-of-State / In-state	3.64

Age distribution, after-treatment, and other characteristics were modeled using reporting data for out-of-state units. However, the total out-of-state TRU population was scaled up to 131,160, from approximately 58,540 seen in the reporting data. This equates to about 45 percent of the estimated out-of-state TRU fleet voluntarily reporting.

2.1.4. Railcar and DSC

There are currently 3,954 railcars registered in the ARBER database, with 67 percent of the railcars falling between 23 and 25 horsepower, and the remaining 33 percent over 25 horsepower. Railcar registration is currently voluntary, and this amount could increase with more complete registration in the future.

The 2019 ARBER population of domestic shipping containers (DSC) reports about 400 units with an average age of 4.3. These are included in the 2019 railcar population, based on discussion with industry indicating that DSCs and railcars have similar operational practice. They both are used almost exclusively by large companies, are not captive to California, are reported voluntarily, and spend only a small fraction of time in California. Based on the limited amount of data available for these categories, the out-of-state TRU age distribution was used for this category, similar to the 2011 inventory

2.1.5. 2019 Population and Age Distribution

Table 2 gives population and average age for each TRU category after scaling adjustments.

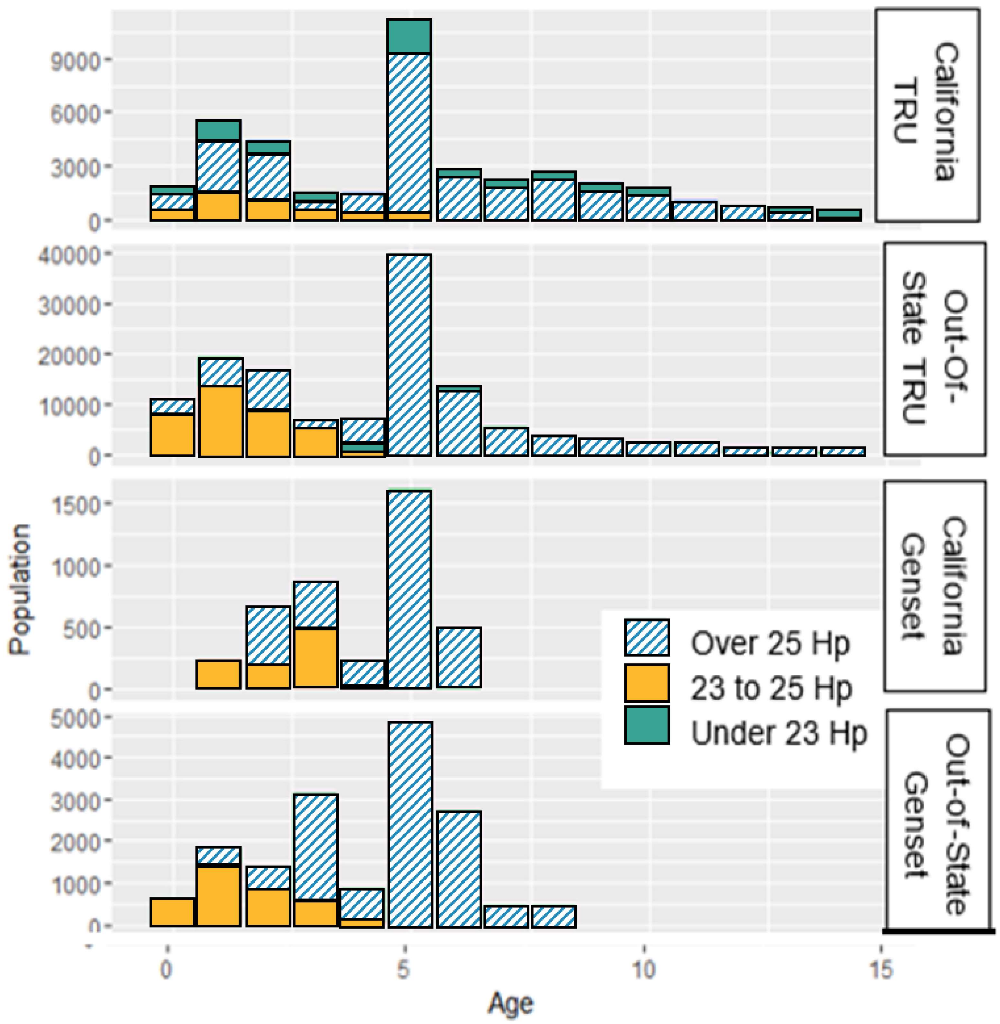
Table 2. 2019 Population and Average Age by Category

Category	Population	Average Age (years)
California-based TRU	39,938	5.1
Out-of-state TRUs	131,164	4.2
California-based TRU gen set	4,074	3.9
Out-of-state TRU gen set	16,200	4.0
Railcar and DSC	3,954	4.2

[7] Annual population of out of state trucks are being used for this analysis

Figure 6 displays the base year 2019 age distributions by category. The spike at age five, or model year 2012, corresponds to a regulatory deadline in the TRU ATCM as well as the last available year of Tier 4i engines in the 25 to 25 horsepower range. It should be noted the low age of units between 23 and 25 horsepower is not indicative of high turnover, but a result of their recent emergence in the market.[8]

Figure 6. Base Year TRU Age Distribution by Category



2.2. Engine Model and Average Horsepower

To determine the engine horsepower for each unit reported in ARBER, the inventory matches the engine model to the manufacturer's horsepower rating. ARBER's engine model input field is an open text field, so typed responses varied. As such, algorithms were used to verify

[8] Railcars are not shown as they follow the out of state TRU age distribution due to limited data.

the engine model. For example, the common model TK486V is often entered as "486 v", "486_v","tk-486 v", “486 tkv”, “tkv486”, “tk48v6”, and approximately 272 other variants.

Table 3 reports average horsepower for each TRU category and the engine horsepower bin. The average horsepower for each category is weighted by the population of each engine model in the reporting data. Only California-based TRUs have a group for units under 23 horsepower because all single body trucks are assumed to be California based units, and all trailer units are over 23 horsepower.

Table 3. Average Horsepower by Category

Category	Average Horsepower: Below 23 Hp Bin	Average Horsepower: 23 to 25 Hp Bin	Average Horsepower: 25 Hp and Over Bin
California-based TRU	17.2	24.8	33.8
Out-of-state TRU	-	24.7	33.7
California-based gen set	-	24.8	33.2
Out-of-state gen set	-	24.8	33.2
Railcar and DSC	-	24.7	33.7

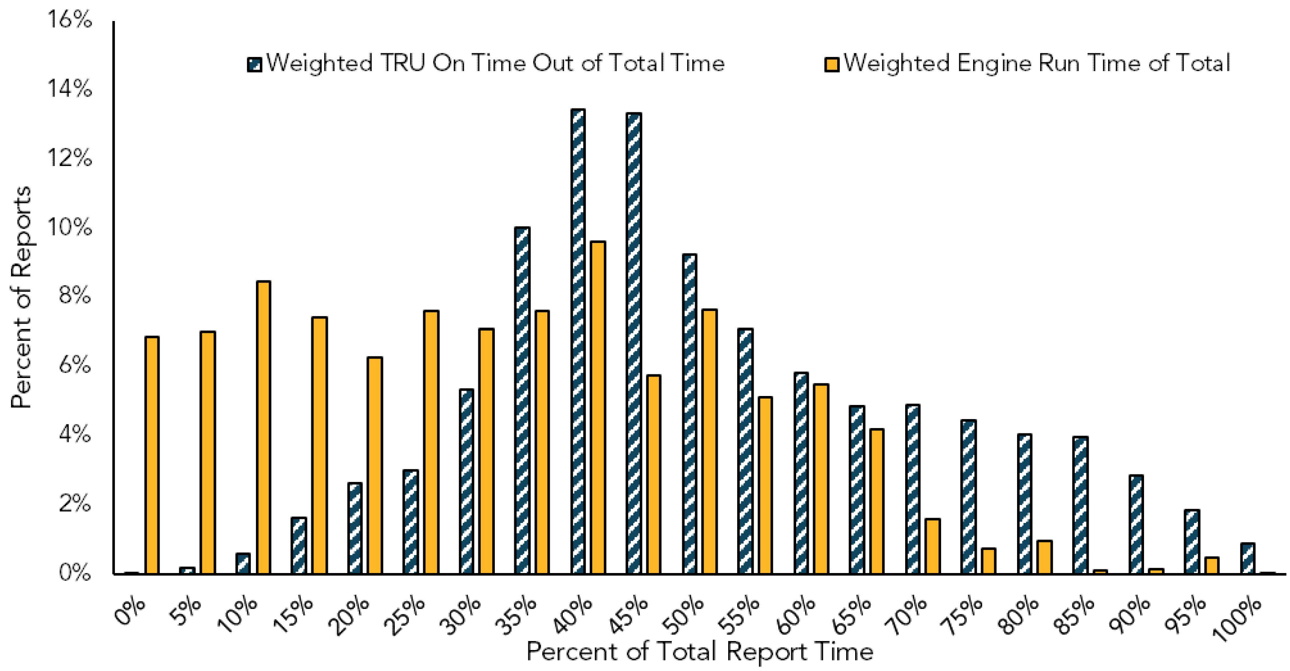
2.3. Annual Activity

In the 2011 inventory, annual activity was based on a facility survey. The survey covered 54 different facilities that monitored TRU activity and provided the average total TRU activity, annually. For example, if a TRU visited a facility twice, one week apart, and had accumulated a total of 30 hours in that time, that TRU would be scaled up by 52 weeks to estimate 1,560 hours of annual use. The results from that survey are described in detail in the 2011 inventory analysis, which determined trailer TRUs had an average annual activity of 1,697 hours and 1,360 hours per year for truck TRUs.

For this 2021 TRU inventory update, CARB acquired telematics data from a number of trailer TRUs, detailing total time, time the unit (but not engine) was on, time the engine was on, whether the trailer was stationary or moving, and (in limited cases) the fuel use. The telematics data generally was recorded every 15 minutes, showing the changes in time, engine on time, and other metrics from the last recorded point. For example, one entry data point might show 900 seconds passing (15 minutes), with 900 seconds (15 minutes) of unit on time and 360 seconds (6 minutes) of engine on time during those 15 minutes.

After significant quality assurance, 811 telematics reports were used, representing 867,300 hours or 99.0 years of total time passing (engine on or not), and 285,000 hours of engine run time. The TRU unit was on (engine running or not running) for an average of 51.8 percent of total recorded time, equivalent to 12.4 hours per day, or 4,500 hours per year. The engine was running for an average of 32.8 percent (weighted by total time of each report), equivalent to 7.9 hours per day, or 2,876 hours per year (the average percent of engine time-on **not** weighted by time was 32.5 percent, showing the data was not significantly influenced by outliers). Figure 7 compares the distribution of TRU on time (patterned in blue and white) and engine on time (colored in yellow). The blue-white bars represent the percent of time the unit was turned on, and yellow bars represent the percent of time the engine was running. The telematics data show that the TRU engines are generally running about 62.5 percent of the time that a TRU unit is turned on.

Figure 7. Telematics Data: TRU Unit On and Engine On



The telematics data, although detailed in temporal information, did not provide information on TRU models, ownership, or other variables to determine if the activity data represented all TRU operation in the State. To incorporate the telematics data while not overinflating the total activity statewide (from units potentially not represented by the telematics data), the 2011 facility survey data and the 2018 telematics data were combined to determine average TRU activity.

For each data source, CARB weighted the percent of engine time on by the duration of the report, to calculate a time-weighted average of engine run time. From the 2011 facility survey data, each facility was weighted by the number of trailer TRUs and multiplied by the average time period for a TRU report. Each telematics data point represents a single unit and was weighted according to the length of that telematics report. Table 4 shows how the following two example facility reports and two telematics data points would be averaged to calculate TRU average on time rate.

Table 4. Example TRU Activity Average Calculation

Data Source	Number of TRUs	Average Time Period of Reports	TRU On Time Average for Facility	Total TRU Days	Average Rate: TRU on time
Facility 1 Report	50	10 day average	20%	50 x 10 = 500 days	500 days x 20 Percent
Facility 2 Report	10	5 day average	30%	10 x 5 = 50 days	50 days x 30 Percent
Telematics 1 Data	1	60 days	35%	1 x 60 = 60 days	60 days x 35 Percent
Telematics 2 Data	1	100 days	40%	1 x 100 = 100 days	100 days x 40 Percent
			Total	710 days	24.8 Percent Weighted Average

This can also be expressed in the calculation as follows:

$$\frac{[(500 \text{ days x } 20 \text{ percent}) + (50 \text{ days x } 30 \text{ percent}) + (60 \text{ days x } 35 \text{ percent}) + (100 \text{ days x } 40 \text{ percent})]}{710 \text{ total days}}$$

= Average of 24.8 percent of time on.

Based on the average time-on of 24.8 percent, the annual activity would be 24.8 percent of 365 days per year, 24 hours per day, or 2,170 hours per year. This methodology gives higher weight to the facilities with larger number of units, reporting over a longer period, and to telematics data recorded over a longer period. Facility reports with few units, or a short period between reports, and telematics data recorded over a short period, have little impact on average activity. Table 5 and Table 6 show the results and overall information on the facility surveys, telematics data, and resulting activity average

Table 5. Trailer TRU Activity Data Sources and Average

Data Source	TRU Hours Represented	TRU Units Represented
Facility Survey	1,197,382	6,035
Telematics Data	867,368	811

Table 6. Trailer TRU Activity Average

Data source	Percent of Engine Time	Average Annual Hours
Facility Survey	19.5%	1,712
Telematics Data	32.8%	2,876
Overall Average (Time Weighted)	25.1%	2,201

The final result is an average trailer activity of about 42 percent weighted toward the new telematics data, and 58 percent weighted to the facility survey, based on total TRU hours represented by each. Telematics data for truck TRUs were not available in any statistically significant quantity, so facility survey results were used and unchanged from the 2011 inventory. The facility survey represented 459 trucks, with an average activity of 1,360 hours per year. Gen sets and railcars are also unchanged from the 2011 inventory, at 1,000 hours annually for both categories. This is based on discussions with gen set and railcar owners and TRU program staff in 2009 and 2010 and described in full in the 2011 inventory report.

2.4. Portion of Activity within California

The trailer, gen set, and railcar TRU populations have activity split between California and other states or countries. Truck TRUs, generally assigned to local or regional delivery duties, are assumed to be captive to California. Therefore, all truck TRU hours are assumed to be within California.

The division of activity for the trailer, gen set, and railcar TRUs, is based on the same methodology as the out-of-state trailer TRU population. The TRUs are modeled on the truck activity patterns from EMFAC2017, for the categories of freight trucks that are associated with refrigerated trailers or refrigerated transport

The International Registration Program (IRP) tracks vehicle miles traveled (VMT) for interstate trucks entering California, so it is possible to determine the percent of annual VMT both inside and outside of California in an average year. The California VMT for out-of-state trucks is estimated to be around 12.4 percent of their total VMT, meaning approximately 1 out of 8 for every mile driven is within California.

California-based trucks in EMFAC also include California IRP trucks (trucks based in California but registered in IRP that spend a significant portion of VMT outside of the State). Overall, VMT for California based freight trucks (the combined average of both IRP and non-IRP trucks) is approximately 78 percent in California and 22 percent outside California. Table 7 lists total annual hours, hours within California, and compares this against the previous 2011 inventory estimate of hours spent within California.

Table 7. TRU Activity Totals and In-State Totals

Category	2021 Model Annual Hours	2021 Model Annual Hours Within California	2011 Model Annual Hours Within California
California Trailer TRU	2,201	1,719	1,325
Out-of-state Trailer TRU	2,201	272	210
Truck TRU	1,360	1,360	1,360
California Gen set	1,000	781	781
Out-of-state Gen set	1,000	124	124
Railcar and DSC	1,697	322	322

2.5. Moving and Non-Moving Time Periods

The telematics data also included stationary and moving time for TRUs. Data was limited to include whether the trailer was moving for the entire period of the report (generally 15 minutes), was stationary the entire time, or had some portion moving and some stationary. The telematics data also included information that determined the engine on-time during these periods.

The period where the trailer was moving only a portion of the time could represent anything from a trailer arriving a location in the middle of a recording interval, to traffic conditions that had significant start and stop movement, to several very short stops during the period. Unfortunately, this data can only definitively determine that total stationary time for trailer TRUs makes up between 33 and 65 percent of all engines on time where the 65 percent value is the 33 percent stationary lower limit plus the possible 32 percent that could also be stationary. In short, 33 percent represents a lower limit, and 65 percent an upper limit.

Table 8. Trailer TRU Stationary Activity Analysis

Movement Category	Hours	Percent
Stationary with Engine On	96,900	33%
Split Stationary/Moving with Engine On	94,598	32%
Moving with Engine On	105,103	35%

An equal split of the portion where the TRU movement could not be quantified would place 49 percent of the total TRU engine time as stationary and 51 percent of TRU engine time as taking place during truck movement. This compares reasonably well with the 2011 inventory split of 50 percent time stationary and 50 percent time moving. This information informs both the spatial distribution of TRU emissions as well as the total hours at a facility per year but does not change the total emissions in the State.

2.6. TRU Load Factor (LF)

Table 9 provides the 2011 inventory load factors. The methodology behind these load factors is described in detail in the 2011 inventory documentation and is generally based on a combination of engine certification cycle data and engine torque and speed curves.

Table 9. 2011 TRU Inventory Load Factors

Model	Horsepower Bin	Load Factor
TRU (California-based and Out-of-State)	25-50	0.46
TRU	11-25	0.56
TRU	<11	0.56
Generator Set	All	0.33
Railcar	All	0.46

The telematics data described previously did include limited data on fuel use by TRUs. Fuel data from the telematics report were recorded 3.6 percent of the time, but still comprises slightly over 36,400 hours of fuel use consumption data. A load factor can be calculated from this fuel use, with several assumptions built in.

Fuel use in off-road diesel inventories is calculated using Equation 2.

Fuel Use = Horsepower*Hours*Load Factor*Fuel Consumption Rate (Equation 2)

Therefore, load factor can be determined if the other variables are known. In the telematics data, specific engine model data or horsepower information is not available. However, the vast majority of the telematics data is from trailer TRUs. The telematics data was based on 2016 to 2017 data, a time period when 23 to 25 horsepower TRUs were being sold but made up a small fraction of market share. For this analysis, CARB assumed the trailer TRUs had an average horsepower over 25 horsepower (i.e., 33.8 Hp). The fuel use rates were based on U.S. EPA[9] values for engines of 25 to 50 horsepower, or 0.408 pounds per horsepower-hour.

Using this data, it is possible to determine a time-weighted load factor of 0.467, which compares favorably with the 2011 TRU inventory load factor for trailers of 0.46. As there is no

[9] *https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100UXEN.TXT*

significant difference between this newly calculated load factor and the previous factors, the 2021 TRU inventory will continue to use the 2011 load factors, with one minor difference.

Based on discussions with manufacturers, TRU engines have improved efficiency between 2011 and 2019, with the largest improvements beginning around 2013. The primary evidence for this trend can be seen in the published data on fuel per hour consumption from manufacturers. Beginning in 2013, the inventory reflects a load factor reduction of 17 percent to simulate efficiency improvement for the 2013 and newer trailer TRUs. For units between 23 and 25 horsepower, the efficiency improvement is used to reduce the engine brake horsepower rating, and thus these units hold the same load factor as earlier trailer TRU units. A reduction in the load factor of 17 percent for the 25 to 50 horsepower units results in the same total effective power (maximum horsepower multiplied by the load factor) for all 2013 and newer trailer units, either above 25 horsepower or below 25 horsepower.

The telematics data, in theory, could show a lower load factor due to these efficiency improvements. However, during the time the telematics data was collected, only around 20 percent of TRU units were 2013 or newer. A 17 percent efficiency improvement in 20 percent of units would only show up as a 3.4 percent reduction overall in load. This minor reduction was not seen in the telematics data, possibly due to the majority of TRU units being pre-2013 model year, or simply due the magnitude of the reduction falling within the margin of error. The model assumes no efficiency improvement for engines below 23 horsepower, as no supporting information was available. Table 10 shows the previous and new load factors.

Table 10. 2021 TRU Load Factors

Category	Below 23 Hp	Between 23 and 25 Horsepower: (All Years)	Over 25 Horsepower: 2012 and Older	Over 25 Horsepower: 2013 and Newer
California TRU	0.56	0.46	0.46	0.38
Out-of-State TRU	-	0.46	0.46	0.38
California Gen sets	-	0.33	0.33	0.27
Out-of-State Gen set	-	0.33	0.33	0.27
Railcars	-	0.46	0.46	0.38

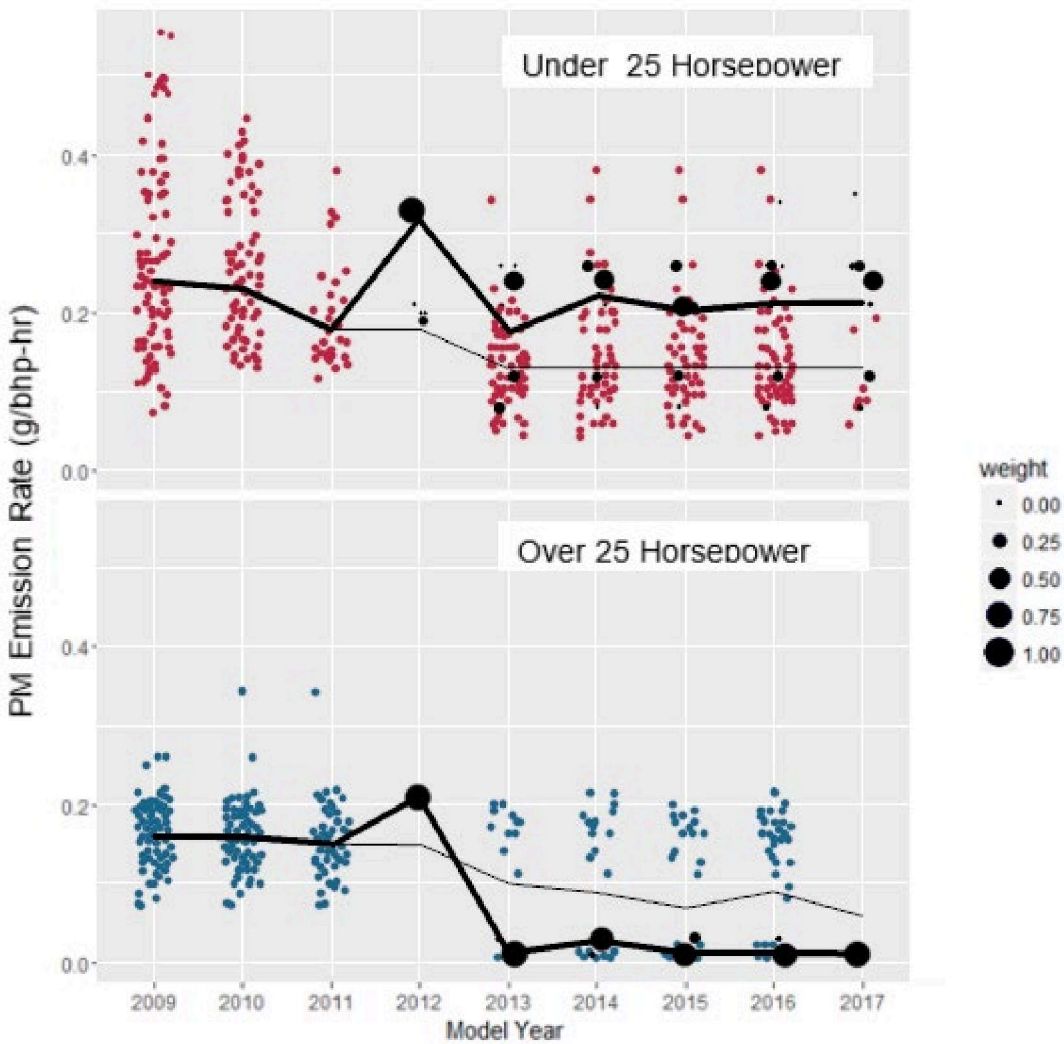
2.7. Emission Factors (EF)

The model utilizes a combination of the 2017 emission factors[10] for all diesel engines and a new analysis for engines certified to the TRU-specific certification cycle. The general off-road 2017 emission factors were developed based on certification test data covering all off-road diesel engines. The TRU-specific emissions factors were developed by including only tests based on TRU-specific certification cycles, and then weighting these tests using the engine families reported in ARBER. The TRU specific certification data are only available for PM and engine model years 2012 and newer. Therefore, the adjustment is made for PM only for engine model year 2012 and after and no adjustments are made for NOx. Each red data point in Figure 8 represents a general off-road diesel engine family. The fine black solid lines represent the overall off-road diesel emission factors (used in other categories).

Each blue data point represents a TRU specific engine family. The size of the black dot represents market share of the engine family. The solid black line is the TRU specific PM emission factor and is derived by taking a population weighted average of the black data points. The TRU specific PM emissions factors for engine model 2018 and after are estimated by averaging the 2014 to 2017 data points.

[10] 2017 Emission Factors, *https://ww3.arb.ca.gov/msei/ordiesel.htm*

Figure 8. PM Emission Factor Comparison



Notable is the fact that over 25 horsepower TRUs have PM emissions from certification below the average for off-road diesel engines, while engines under 25 horsepower have emissions significantly above the average for off-road diesel engines.

3. Forecasting and Growth

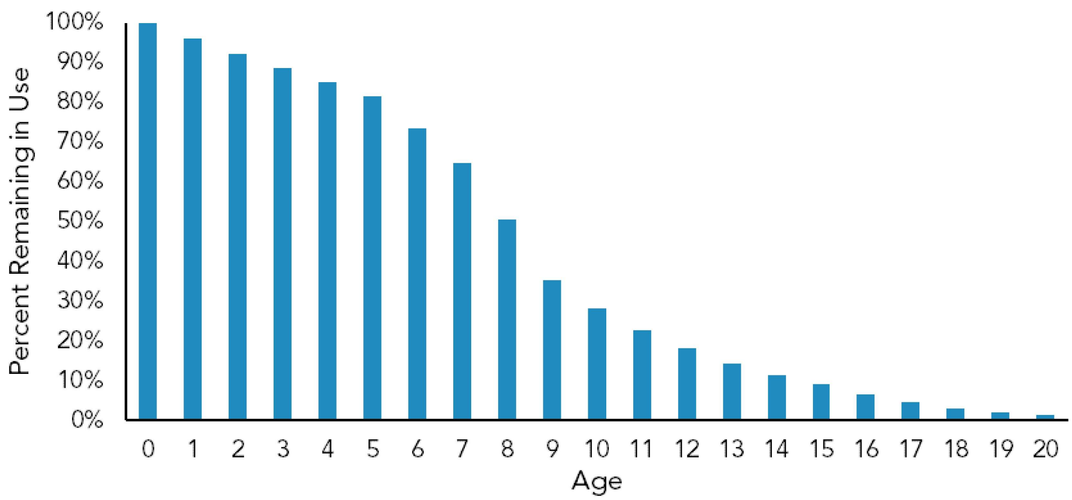
3.1. Population Forecast

The 2021 TRU model forecasts future year population distributions in any given year by applying a series of actions to the previous year's population, in an iterative process (i.e., 2020 population is based on base year 2019, and 2021 is based off iterations on 2020, and so on). There are three distinct steps in this process: turnover, growth and purchasing, and compliance. In the first step, the model estimates the number of units that will likely retire in the year utilizing the survival curve, which characterizes the retirement behavior for different ages. Then newly purchased units are calculated to reflect the population growth. Lastly, the population is adjusted by compliance actions such as forced retirement and/or replacement, based on enforcement and reporting data for real world compliance choices over the past 7 years. The following subsections cover model parameters used for these steps.

3.2. Population Turnover

Population turnover, or survival curves, describe what percent, on average, of purchased equipment are still in service after a set amount of time. Figure 9 shows a survival curve, which indicates the percent of the population still in service at each age, out to age 20. At age 3, 90 percent are still in service. By age 8, 50 percent are in service. By age 20, all are retired from service.

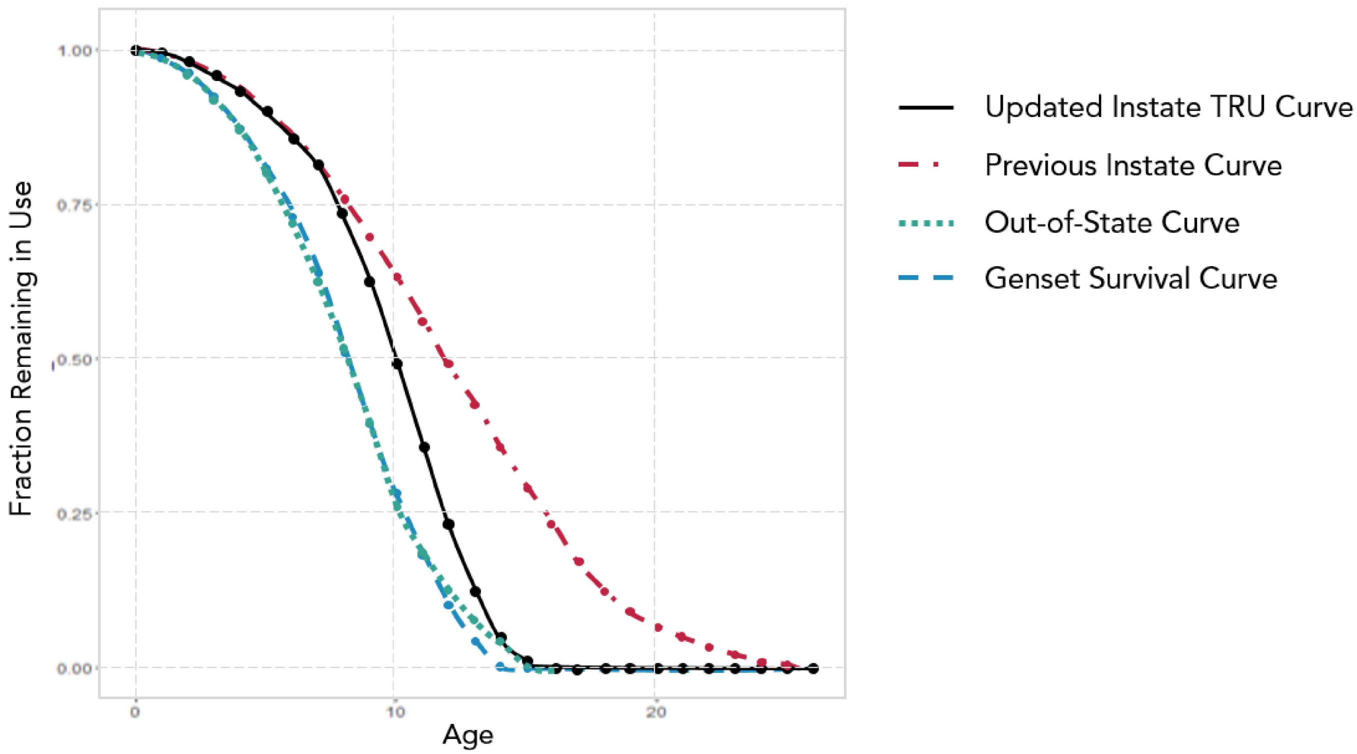
Figure 9. Example Survival Curve



Survival curves are based the 2011 inventory model, with one significant adjustment. The general methodology for developing the survival curves is described in the 2011 inventory documentation, however it can generally be described as an iterative process where the previous decades of TRU sales data was compared to the 2011 inventory age distribution (as reported in ARBER). The goal of survival curve application was finding a curve that could be applied to sales data and resulted in the real world age distribution seen in the reporting data. The in-state and out-of-state populations have different survival curves, as out-of-state TRUs are significantly younger and are retired at a younger age, on average.

The adjustment to the 2011 survival rates came from comparing the in-state survival curve to the age distribution shown previously in Figure 9. While the survival curve extends to 25 years, the existing age distribution shows no units older than 15 years. Although the TRUs have been subject to the TRU ATCM, units older than 7 years with no aftertreatment are not in compliance, meaning there is no reason to suspect that age 10 and older units are retiring primarily due to the TRU ATCM (as they are already out of compliance, or are already in compliance via aftertreatment and do not need to retire to meet regulatory requirements). To reflect this shift in retirement patterns, the new survival curve reaches zero at approximately 16 years, instead of the previous 25 years. The survival curves for different TRU populations are shown below in Figure 10.

Figure 10. TRU Survival Curve



3.3. Purchasing Trends

After applying the survival curve, the inventory models new purchases that replace or are added to the TRU fleet. New purchases for units with a 25 to 50 horsepower engine meeting the Tier 4 Final emission standards for MY 2013 and newer are classified as ULETRU (ultra-low emission TRU) and no further compliance action is required for these units. For engine horsepower below 25, the model assumes no Level 3 retrofit device installed at the time of purchase, again based on reporting data.

For the trailer, rail, and TRU gen sets, the percent of new units purchased with engines in the 23 to 25 horsepower bin was based on the reporting data from ARBER. In-state TRUs show that, on average, 60 percent of units have greater than 25 horsepower engines, and 40 percent have engines between 23 and 25 horsepower. All other units show that only 20 percent of TRU purchases have engines greater than 25 horsepower, and 80 percent have engines that are between 23 and 25 horsepower. At the time of this inventory, all new gen sets registered were in the 23 to 25 horsepower range, however the data does not include enough years to be certain this is an ongoing trend. Future inventories will revisit this metric to determine the impact and longevity of trailer, rail, and gen set units in the 23 to 25 horsepower range.

Table 11. New Purchasing by Horsepower Bin

Category	Before 2015 25+ Hp / 23-25 Hp	2015 25+ Hp / 23-25 Hp	2016 and after 25+ Hp / 23-25 Hp
California Based TRU	100 / 0	70 / 30	60 / 40
Out-of-State TRU	100 / 0	20 / 80	20 / 80
California Based Gen set	100 / 0	20 / 80	20 / 80
Out-of-state Gen set	100 / 0	20 / 80	20 / 80
Rail	100 / 0	20 / 80	20 / 80

3.4. Compliance Choices

Following the application of survival curves and purchasing functions in the inventory, the inventory applies compliance choices for TRUs subject to the TRU ATCM. The TRU ATCM requires that fleet owners/operators take actions to reduce diesel particulate emissions once the engine becomes seven years old. Fleet owners have the choice of replacing the TRU unit, installing a retrofit device, or using alternative technology such as electric standby to allow the unit to run on supplied electric power while at a facility.

The compliance paths for TRUs includes;

- Install Level 3 retrofit
- Install alternative technology
- Replace unit with a new TRU with current MY engine.

In the 2019 reporting data, 86.2 percent of over 25 horsepower units complied (due either to age or actions taken), and 95.4 percent of units under 25 horsepower were in compliance, with an overall compliance rate of 89.0 percent.

For many owners of TRUs, both company and individuals, one of the primary compliance paths is the replacement of TRUs with newer units or shifting older TRUs out of the State and maintaining a fleet under 7 years of age. These actions are represented in the age distribution and are not identifiable specifically as compliance choices (i.e., there is no way to differentiate all these actions from the normal course of business). This compliance choice is implicit in the overall 89 percent compliance rate (e.g., these TRUs show up as newer units that are in compliance with the ATCM).

To model non-compliance in some units, the inventory uses the trend over the past two years for units that did not comply with turnover, retrofits, or alternative technology. For units facing their age 7 compliance date, the report shows that 31 percent take a specific action beyond natural turnover, over the past two years. It should be noted that this does not mean the compliance rate is 31 percent, as the overall compliance rate is (as described previously) 89 percent.

To determine the compliance parameters, TRUs with engine model years 2009 and 2010 were assessed directly from ARBER reporting data in 2016 and 2010 (the compliance year for those units). Of the 2,739 TRUs facing requirements, 885 (31 percent) either replaced the unit, or installed a Level 3 (ULETRU) retrofit, while 1,854 took no action. For TRUs under 23 horsepower, 270 faced compliance requirements, and 52 took some action, while 218 took no action (19 percent took action). Note that the number of TRUs facing compliance requirements does not include Tier 4 Final engines, those already retrofit or with alternative technology already installed, or those turned over in the normal course of business. These TRUs make up the bulk of all units, which is why the overall compliance rate is much higher, at 89 percent.

Table 12. Compliance Action Average in 2016 and 2017

	23 Horsepower and Above (Trailers, Rail, Gen sets)	**Below 23 Horsepower (Trucks)**
Replace TRU	313	35
Install ULETRU Retrofit	572	14
Install Alternative Technology	0	3
No Action Taken (out of compliance)	1,854	218

In each forecasted year, the units taking action to comply with the ATCM are modeled based on the TRU data between 2011 and 2018. The compliance paths are also split between under 23 horsepower units (all trucks) and over 23 horsepower units (trailers, rail, and gen sets). For over 23 horsepower units, almost 80 percent of the units taking action install a Level 3 retrofit, while 20 percent replace the unit. For under 23 horsepower units, only 50 percent install retrofits while 30 use alternative technology provisions, and 22 percent replace the unit. The numbers have been updated from the 2011 TRU inventory, and the results from both are shown below in Table 13

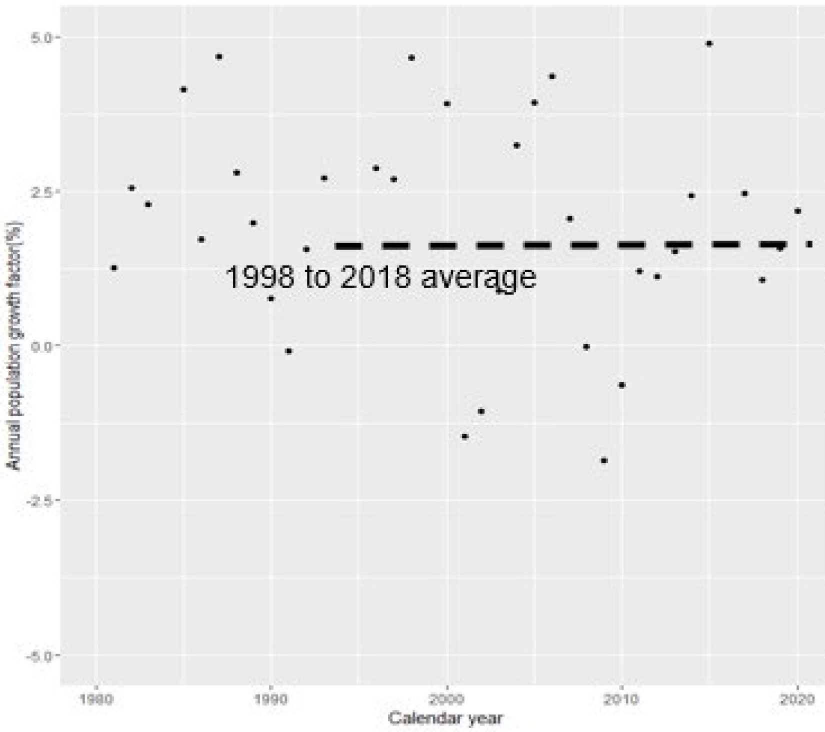
Table 13. Compliance Choices in 2011 and 2021 TRU Inventory

	Compliance Action	2011 TRU Inventory	2021 TRU Inventory
Compliance Rate for Age 7 TRUs	----	100%	31%
Over 23 Hp TRUs Compliance Choices (Trailers)	Install Level 3 retrofit	65%	78%
Over 23 Hp TRUs Compliance Choices (Trailers)	Alt tech	0%	3%
Over 23 Hp TRUs Compliance Choices (Trailers)	Replace unit	35%	19%
Under 23 Hp TRUs Compliance Choices (Trucks)	Install Level 3 retrofit	42%	48%
Under 23 Hp TRUs Compliance Choices (Trucks)	Alt tech	9%	30%
Under 23 Hp TRUs Compliance Choices (Trucks)	Replace unit	49%	22%

3.5. TRU Industry and Section Growth

The annual population growth rate is determined primarily by the ACT research's reefer population trend. As the model is focusing on mid to long-term projection (not just the next year’s estimate), regression is conducted for the dataset of the past 20 years population trend from ACT research's reefer population data. Figure 11 below shows the annual population growth rate of nationwide reefers, from 1998 to 2018 averaging out to 1.6 percent annual growth.

Figure 11. ACT Research National Reefer Population Growth



IBIS World Reports for 2017, shown in Table 14 below, shows that industry trends for sectors using refrigerated units such as frozen food production and overall supermarket and grocery stores in the U.S. are growing at 1.6 percent annually as well, supporting this growth rate.

Table 14. IBIS World Reports Growth by NAICS

Sector	Category	Average Annual Growth 2011 to 2016
Manufacturing	Frozen food production in the US (NAICS 31141)	1.6%
Retail	Supermarkets & Grocery Stores in the US (44511)	1.6%

Note that this growth rate is applied only to the 2019 and future years. From 2011 to 2018, the growth rate is based on the average annual change in TRUs reported in ARBER.

3.6. Composite Population Forecast

The combination of turnover, purchasing, and growth results in the composite forecast (and backcast) are shown below in Figures 12 and 13. The 23 to 25 horsepower category, that is now a significant portion of new sales, grows as a proportion of the population until about 2025 where they reach an equilibrium (their percent of the population is equal to their percent of new sales from Table 11). California-based TRUs and out-of-state TRUs are shown in the graphs below.

Figure 12. California TRU Population Forecast

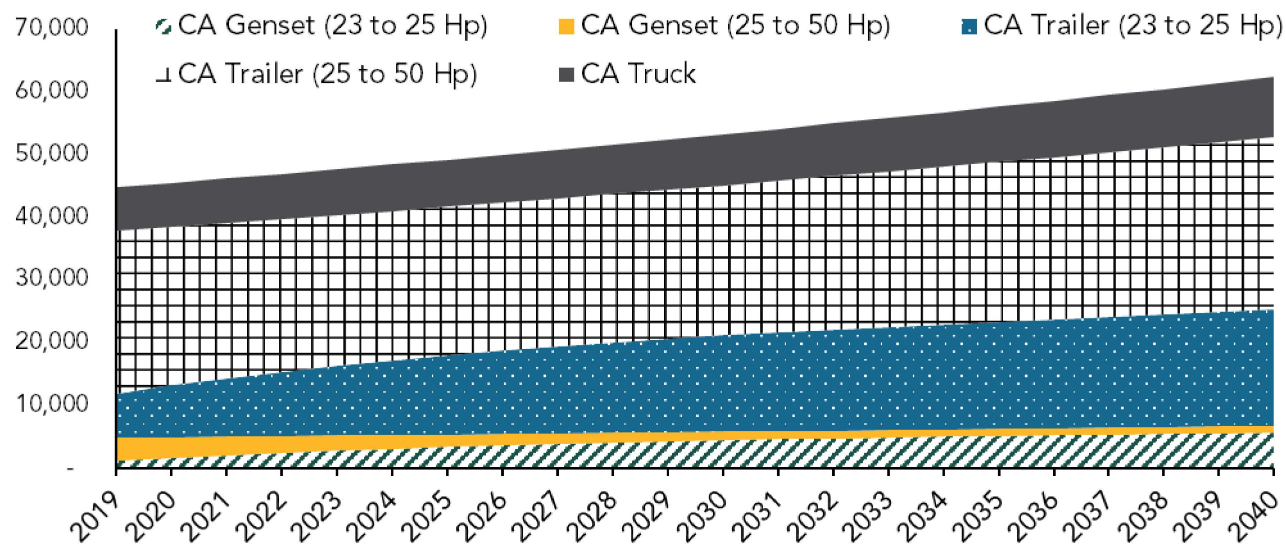
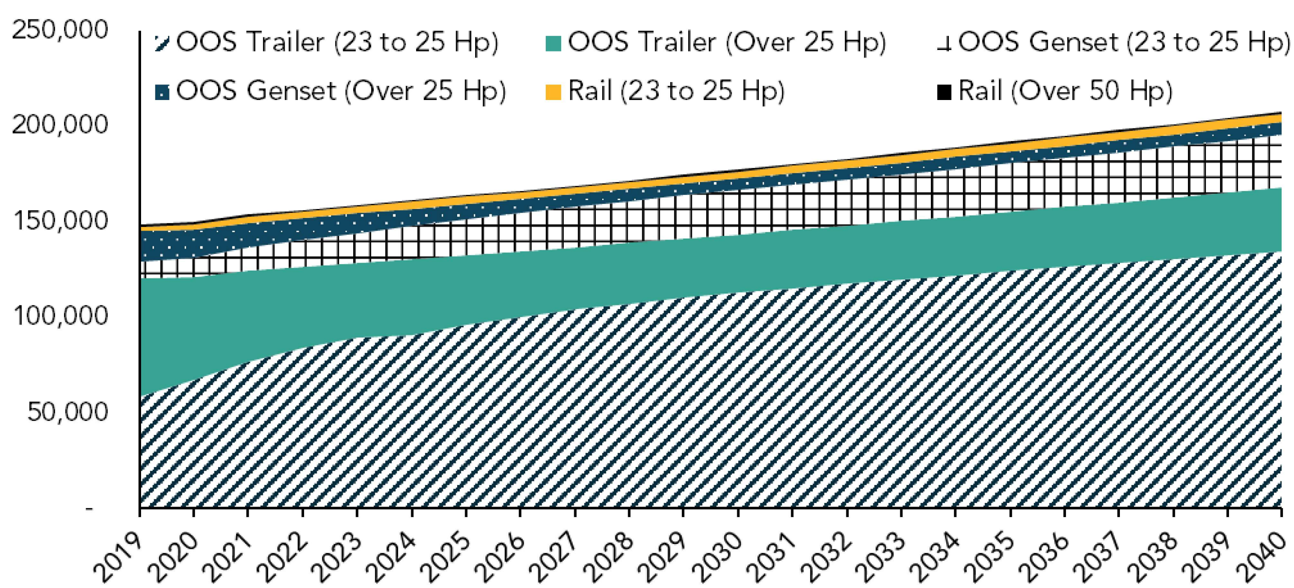


Figure 13. Out of State TRU Population Forecast



4. Summary of Proposed Amendments

CARB staff are proposing amendments to the TRU ATCM (Proposed Amendments) to transition diesel-powered truck TRUs to zero emission, as well as require a diesel PM emission standard for newly-manufactured TRUs in the remaining categories and the use of lower global warming potential refrigerant. The Proposed Amendments would require the following:

1. Beginning December 31, 2023, all truck TRU fleets shall turnover at least 15 percent each year to full zero-emission technology. All truck TRUs that operate in California shall be full zero-emission by December 31, 2029. This is modeled by a linear reduction in the activity, fuel, and emissions from diesel-powered truck TRUs beginning in 2024 and ending with a 100 percent reduction by 2030. This equates to an approximate annual reduction of 15 percent in truck TRU activity from 2024 to 2030.
2. Beginning December 31, 2022, all MY 2023 and newer trailer TRU, DSC TRU, railcar TRU, and TRU gen set engines shall meet a PM performance standard of 0.02 g/bhp-hr. This is modeled by reducing PM emissions for new sales of trailer TRUs, DSC TRUs, railcar TRUs, and TRU gen sets by 85 percent beginning in 2023, for those TRUs that do not already meet the 0.02 PM standard.

5. Emissions Results

The emissions results provided in this section reflect all previously described inputs, trends, and modeling. Figure 14 and Figure 15 show the statewide PM2.5 emissions in the baseline and under the Proposed Amendments, respectively. The population of 23 to 25 horsepower trailer TRUs (in-state trailer TRUs in brown and out-of-state trailer TRUs in grey) are forecast to dominate PM2.5 emissions under the baseline scenario.

Figure 14. Statewide PM2.5 Emissions by TRU Category in Baseline

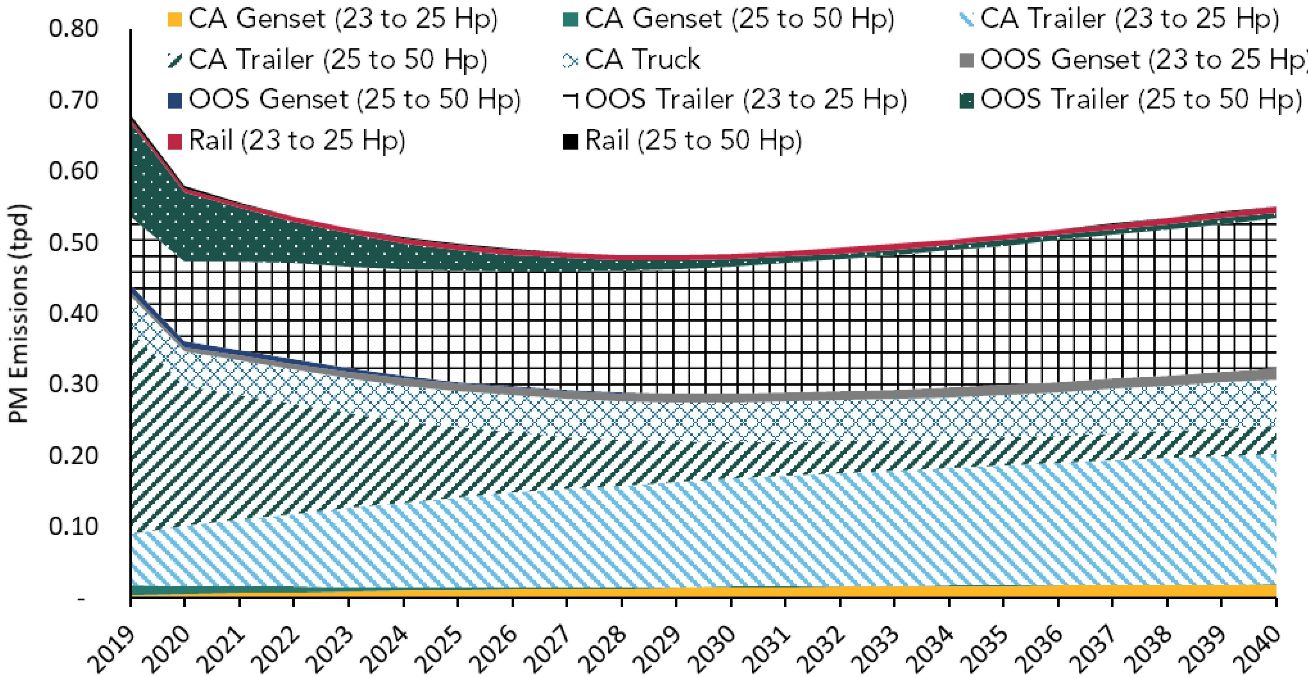
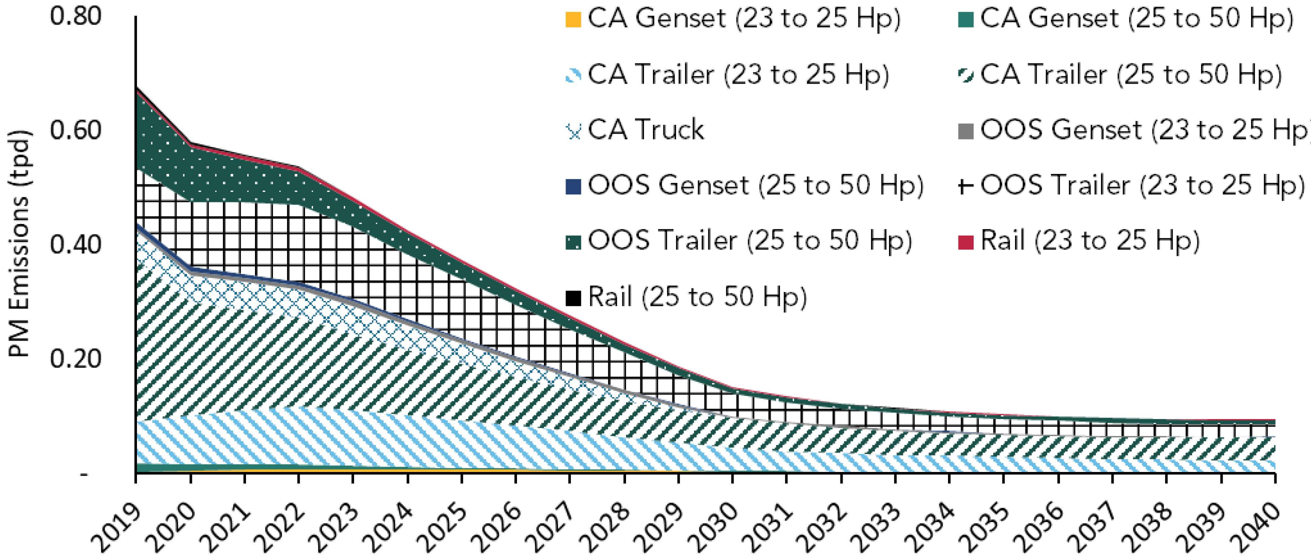


Figure 15. Statewide PM2.5 Emissions by TRU Category under Proposed Amendments



Under the Proposed Amendments, NOx emissions are only reduced by the requirement for California truck TRUs to transition to zero-emission, with no change in the trailer emissions. Figure 16 below shows the NOx emissions from TRUs, excluding truck TRUs, followed by the NOx emissions from truck TRUs in the baseline and under the Proposed Amendments in Figure 17.

Figure 16. Statewide NOx Emissions from TRUs Excluding Trucks.

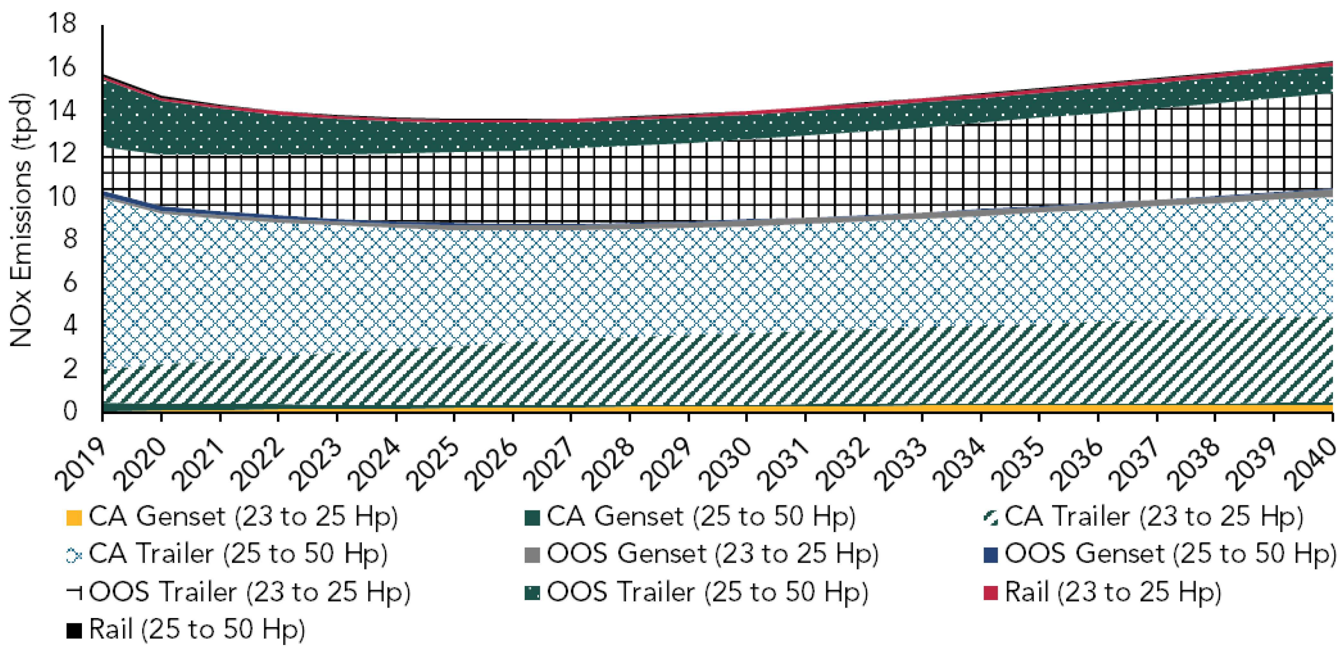
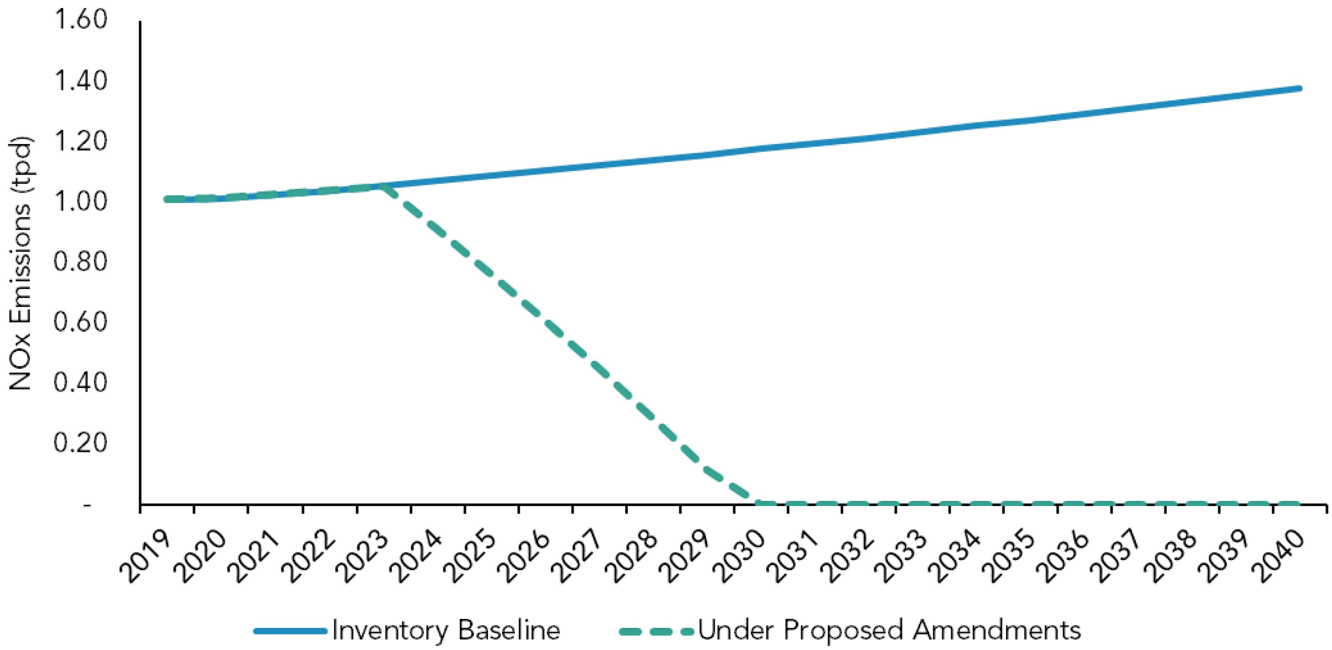


Figure 17. Statewide NOx Emissions from Truck TRUs



5.1. SRIA Emissions Results with 100 Percent Compliance

Per Department of Finance regulations (California Code of Regulations, title 1, sections 2000--2004),[11] the Proposed Amendments are a major regulation requiring a Standardized Regulatory Impact Assessment (SRIA) because the economic impact of the regulation is projected to exceed $50 million in a 12-month period. The following emissions results show the impacts of the Proposed Amendments relative to the SRIA baseline, in which full compliance with existing regulations is assumed.

Figure 18 shows the statewide PM2.5 emissions from TRUs in the SRIA baseline. The full compliance assumption causes significant turnover in 2020 to force compliance with the TRU ATCM, with an associated drop in PM emissions. The population of 23 to 25 horsepower trailers (in-state trailers in blue and out-of-state trailers in green) are forecast to dominate PM2.5 emissions.

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[11] California Code of Regulations § 2000-2004, Division 3, Standardized Regulatory Impact Assessment for Major Regulation. (web link: https://govt.westlaw.com/calregs/Document/IAA1C7210595511E3BFC8D5B3615C797F?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)&bhcp=1#co_anchor_IA8F81D2F7A734A449389719B2F838650)

Figure 18. Statewide PM2.5 Emissions by TRU Category in Baseline with Full (i.e., 100 Percent) Compliance

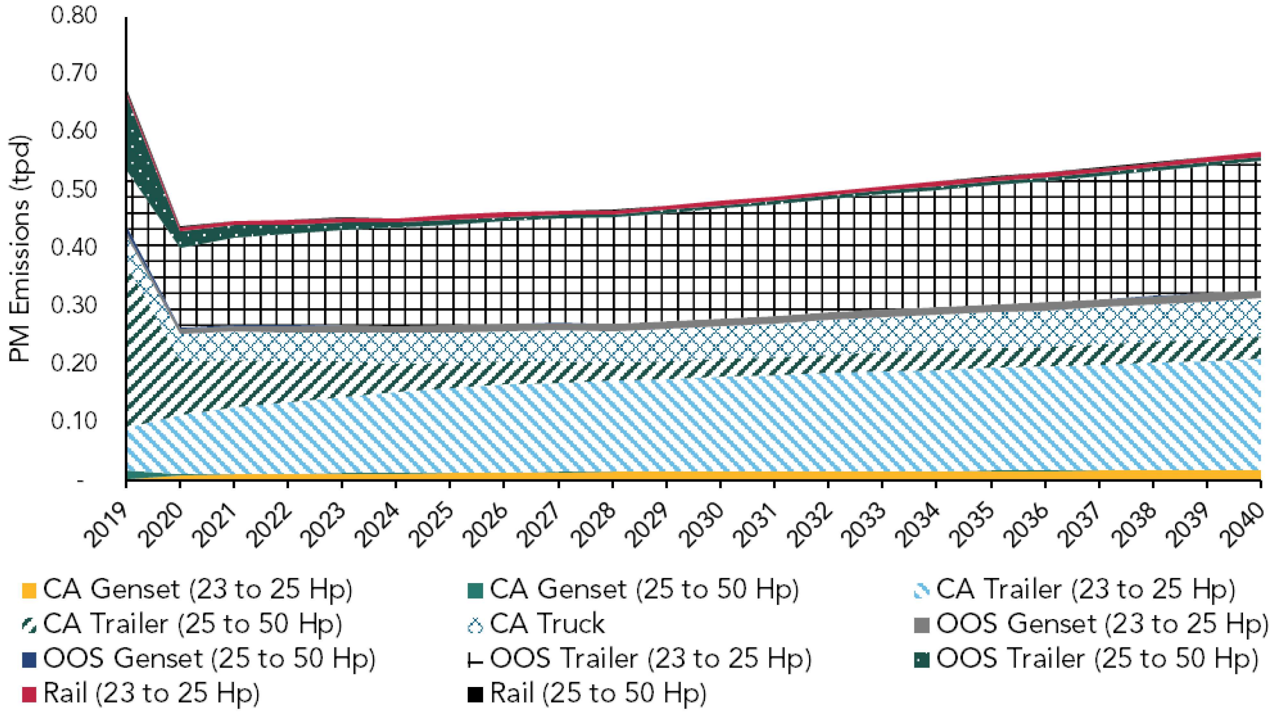


Figure 19 shows the statewide PM2.5 emissions that would result from the Proposed Amendments based on the SRIA baseline. Beginning in 2024, PM2.5 emissions are reduced as newly manufactured units are required to meet ULETRU.

Figure 19. Statewide PM2.5 Emissions by TRU Category under the Proposed Amendments with 100 Percent Compliance

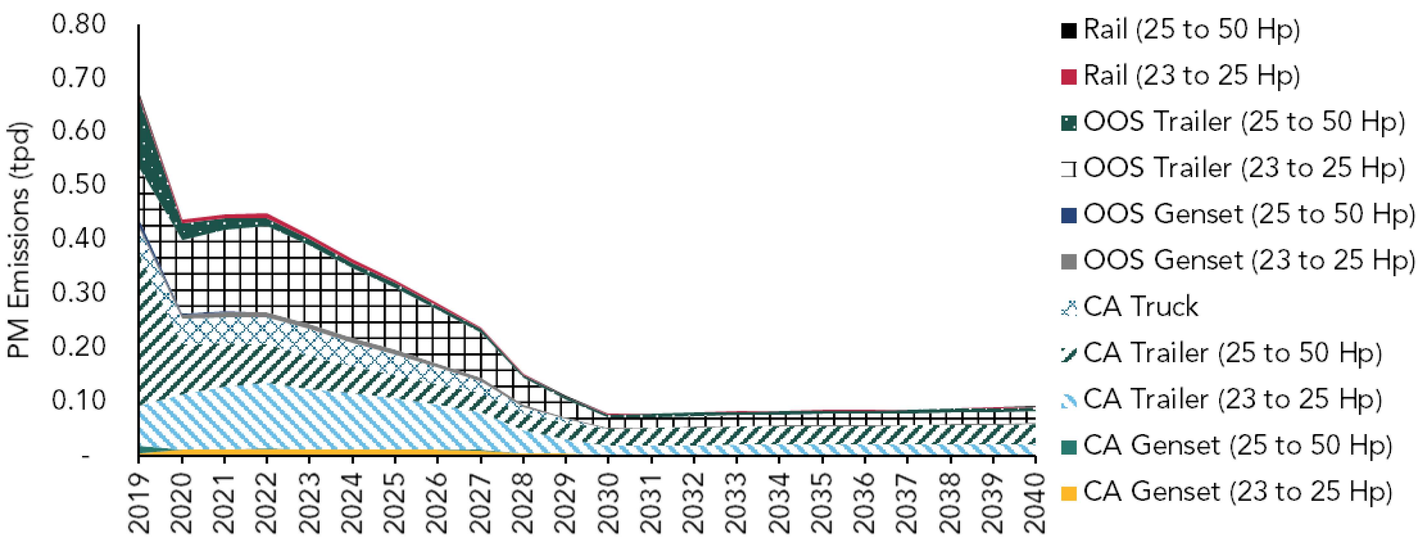


Figure 20 shows the Baseline statewide NOx emissions from TRUs. By 2035, NOx emissions will be slightly higher than 2019.

Figure 20. Baseline Statewide NOx Emissions by TRU Category with 100 Percent Compliance

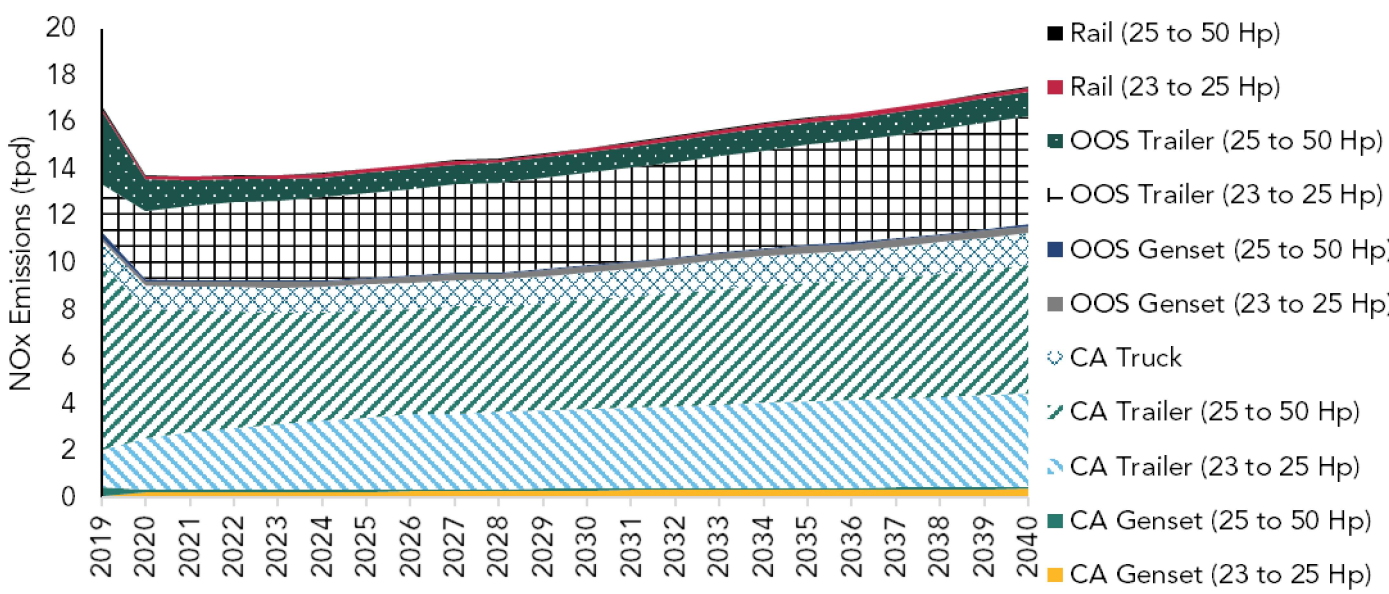


Figure 21 shows the statewide NOx emissions that would result from the Proposed Amendments based on the SRIA baseline. Beginning in 2024, NOx emissions are reduced slightly as truck TRUs begin to transition to zero-emission.

Figure 21. Statewide NOx Emissions by TRU Category under the Proposed Amendments with Full (i.e., 100 Percent) Compliance

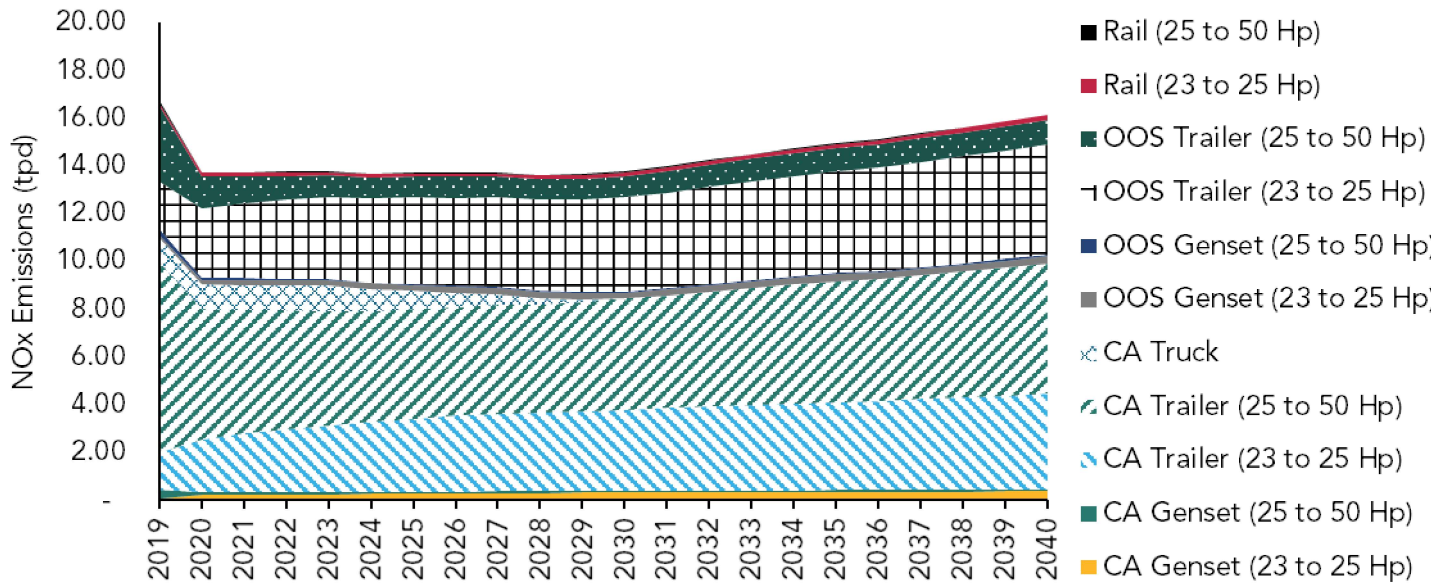
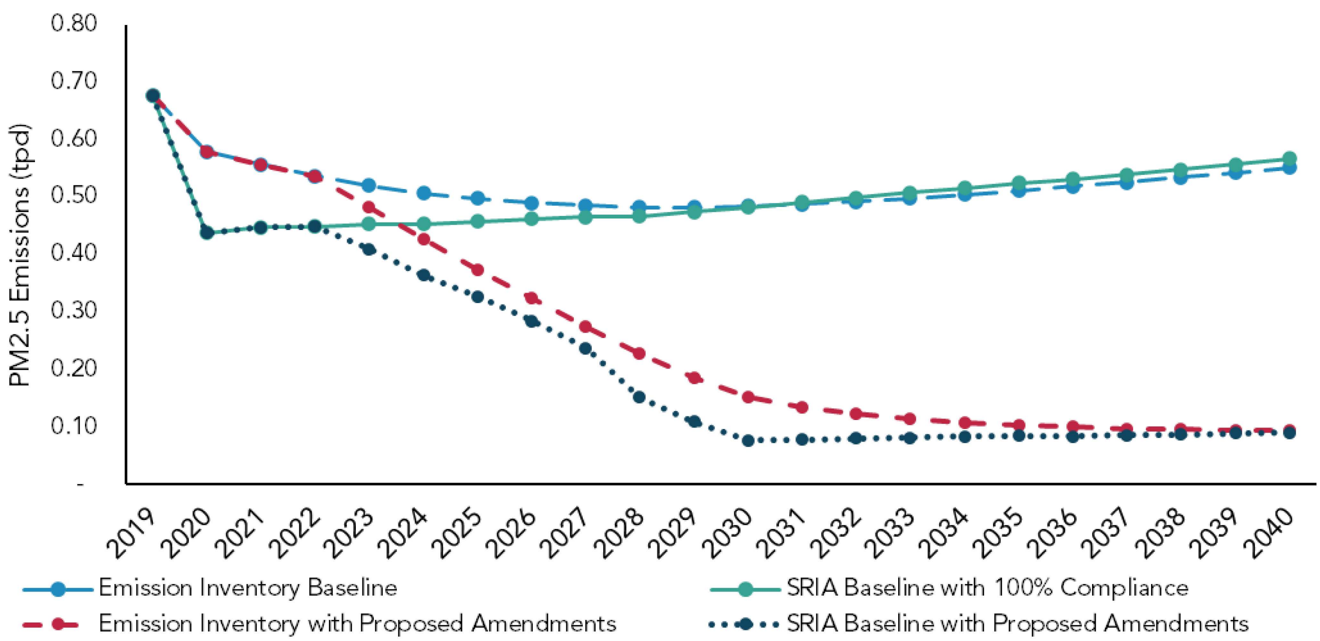


Figure 22 shows the impact of assuming full compliance for the SRIA in a comparison of PM2.5 under the baseline inventory, SRIA baselines, and the Proposed Amendments.

Figure 22. PM2.5 Emissions under Inventory and SRIA Compliance Scenarios



ATTACHMENT D

CALIFORNIA
AIR RESOURCES BOARD

Gavin Newsom, Governor
Jared Blumenfeld, CalEPA Secretary
Liane M. Randolph, Chair

City Staff Response to Comments

July 14, 2021

Corey Alvin
Environmental Coordinator
City of Oakland, Planning and Building Department
250 Frank H. Ogawa Plaza, Suite 3315
Oakland, California 94612
calvin@oaklandca.gov

Dear Corey Alvin:

Thank you for providing the California Air Resources Board (CARB) with the opportunity to comment on the Air Quality Plan (Plan) for the operations of the Custom Goods Facility (Project) located in the City of Oakland (City). The Project consists of the operation of a 189,038 square foot warehouse facility located within an area designated as CC-1or New Central Gateway Parcel in the former Oakland Army Base (OAB). The Plan is required as part of the 2013 approved Standard Conditions of Approval/Mitigation Monitoring and Reporting Program (SCA/MMRP) prepared for the 2012 OAB Redevelopment Initial Study Addendum (IS/Addendum). The SCA/MMRP was adopted by the City to mitigate the significant health and air quality impacts in the West Oakland Community and the impacts to regional air quality resulting from the redevelopment of the former OAB.

Prologis is the lessee of the 58 acre Project site for the next 66 years. The 189,038 square foot warehouse facility will be leased solely to Custom Goods, who will operate the site as a Unite States Customs and Border Protection Centralized Examination Station. Tenant Improvements inside the building will include roughly 3,000 square feet of administrative offices, 11,000 square feet of secure U.S. Customs offices with accessory inspection areas, approximately 40,000 square feet of cold dock and refrigerated warehouse space for cold chain inspections, and a remainder of space to be used as dry cargo hold or inspection areas. Once fully operational, the Project is anticipated to add 307 daily vehicle trips, including 140 daily diesel-powered drayage trucks and 90 diesel-powered over the road heavy-duty trucks, along local roadways. Approximately 46 of the trucks serving the Project are anticipated to be equipped with 34 horsepower (hp) transportation refrigeration units (TRU). The Project also includes the operation of two diesel-powered yard hostlers and one diesel-powered forklift.

Freight facilities, like the described in the Plan, can result in high volumes of heavy-duty diesel trucks, and operation of on-site equipment (e.g., forklifts and yard tractors) that emit toxic diesel emissions, and contribute to regional air pollution and global climate change.[1]

1 With regard to greenhouse gas emissions from this project, CARB has been clear that local governments and project proponents have a responsibility to properly mitigate these impacts. CARB's guidance, set out in detail

Governor Gavin Newsom signed Executive Order N-79-20 on September 23, 2020. The executive order states: "It shall be a goal of the State that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. It shall be a further goal of the State that 100 percent of medium and heavy-duty vehicles in the State be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks. It shall be further a goal of the State to transition to 100 percent zero emission off-road vehicles and equipment by 2035 where feasible." The executive order further directs the development of regulations to help meet these goals. To ensure that lead agencies, like the City, stay in step with evolving scientific knowledge to protect public health from adverse air quality and greenhouse gas impacts from the transportation sector, which serves as the basis of the Governor's Executive Order N-79-20, CARB urges the City to require all trucks, TRUs, and cargo handling equipment servicing the Project to transition to zero emission prior to start of operations.

The Project Would Increase Exposure to Air Pollution in Disadvantaged Communities

The Project, in conjunction with the operation of the other industrial development at the former OAB, will expose nearby disadvantaged communities to increased levels of air pollution. Addressing the disproportionate impacts that air pollution has on disadvantaged communities is a pressing concern across the State, as evidenced by statutory requirements compelling California's public agencies to target these communities for clean air investment, pollution mitigation, and environmental regulation. The following three pieces of legislation need to be considered and included in the Plan when developing a project like this near a disadvantaged community:

Senate Bill 535 (De León, 2012)

Senate Bill 535 (De León, Chapter 830, 2012)[2] recognizes the potential vulnerability of low-income and disadvantaged communities to poor air quality and requires funds to be spent to benefit disadvantaged communities. The California Environmental Protection Agency (CalEPA) is charged with the duty to identify disadvantaged communities. CalEPA bases its identification of these communities on geographic, socioeconomic, public health, and environmental hazard criteria (Health and Safety Code, section 39711, subsection (a). In this capacity, CalEPA currently defines a disadvantaged community, from an environmental hazard and socioeconomic standpoint, as a community that scores within the top 25 percent of the census tracts, as analyzed by the California Communities Environmental Health

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in the Scoping Plan issued in 2017, makes clear that in CARB's expert view, local mitigation is critical to achieving climate goals and reducing greenhouse gases below levels of significance.

2 Senate Bill 535, De León, K., Chapter 800, Statutes of 2012, modified the California Health and Safety Code, adding § 39711, § 39713, § 39715, § 39721and § 39723.

Screening Tool Version 3.0 (CalEnviroScreen).[3] This Project is located with the boundary of the West Oakland Community. The maximum CalEnviroScreen score for the West Oakland Community is in the top 15 percent, indicating that the area is home to some of the most vulnerable neighborhoods in the State. The air pollution levels in the West Oakland Community routinely exceed state and federal air quality standards. CARB urges the City to ensure that the Project does not adversely impact neighboring disadvantaged communities.

Senate Bill 1000 (Leyva, 2016)

Senate Bill 1000 (SB 1000) (Leyva, Chapter 587, Statutes of 2016)[4] amended California's Planning and Zoning Law. SB 1000 requires local governments that have identified disadvantaged communities to incorporate the addition of an environmental justice element into their general plans upon the adoption or next revision of two or more elements concurrently on or after January 1, 2018. SB 1000 requires environmental justice elements to identify objectives and policies to reduce unique or compounded health risks in disadvantaged communities. Generally, environmental justice elements will include policies to reduce the community's exposure to pollution through air quality improvement. SB 1000 affirms the need to integrate environmental justice principles into the planning process to prioritize improvements and programs that address the needs of disadvantaged communities.

Assembly Bill 617 (Garcia, 2017)

The State of California has emphasized protecting local communities from the harmful effects of air pollution through the passage of Assembly Bill 617 (AB 617) (Garcia, Chapter 136, Statutes of 2017).[5] AB 617 requires CARB to develop the process that creates new community-focused and community-driven action to reduce air pollution and improve public health in communities that experience disproportionate burdens from exposure to air pollutants. In response to AB 617, CARB established the Community Air Protection Program with the goal of reducing exposure in communities heavily impacted by air pollution. As part of its role in implementing AB 617, CARB must annually consider the selection of communities for development and implementation of community air monitoring plans and/or community emission reduction programs for those communities affected by a high cumulative exposure burden. The West Oakland Community is one of 15 communities statewide chosen thus far for inclusion in the Community Air Protection Program.

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3 "CalEnviroScreen 3.0." Oehha.ca.gov, California Office of Environmental Health Hazard Assessment, June 2018, *https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30*

4 Senate Bill 1000, Leyva, S., Chapter 587, Statutes of 2016, amended the California Health and Safety Code, § 65302.

5 Assembly Bill 617, Garcia, C., Chapter 136, Statutes of 2017, modified the California Health and Safety Code, amending § 40920.6, § 42400, and § 42402, and adding § 39607.1, § 40920.8, § 42411, § 42705.5, and § 44391.2.

The West Oakland Community was selected the development of a Community Emissions Reduction Plan (CERP) due to its high cumulative exposure burden, the presence of a significant number of sensitive populations (children, elderly, and individuals with pre-existing conditions), and the socioeconomic challenges experienced by its residents. CARB approved the West Oakland Community Action Plan (WOCAP) in December 2019, which included 89 strategies to achieve emission and exposure reductions throughout this community, including significantly reducing or eliminating emissions from heavy-duty mobile sources and industrial stationary sources.

Health-harming emissions, including particulate matter (PM), toxic air contaminants, and diesel PM generated from the proposed increase in heavy and light industrial development in the Project area will negatively impact the community, which is already disproportionally impacted by air pollution from existing freight operations as well as stationary sources of air pollution. Part of the AB 617 process required CARB and the Bay Area Air Quality Management District (BAAQMD) to create a highly-resolved inventory of air pollution sources within this community.

The City and Prologis Must Implement All Feasible Mitigation Measures to Reduce the Project's Potentially Cumulatively Considerable Impact on Air Quality and Public Health

As previously mentioned, the Project is located within the former OAB. Based on the air quality impact analysis presented in the 2012 IS/Addendum, which included the Project, the operation of the development proposed within the OAB would emit nitrogen oxide (NOx) emissions that would exceed the BAAQMD's significance thresholds. Consequently, the City concluded in the 2012 IS/Addendum that the development proposed within the OAB would result in a cumulatively considerable impact on air quality. Furthermore, the City concluded in the 2012 IS/Addendum that the combined operation of the industrial developments within the OAB, which includes the Project, would expose nearby residences within the West Oakland that would result in significant and unavoidable impact. Outside of the OAB area, the Project is also located near other air pollutant emission sources such as the Port of Oakland and Union Pacific Rail Yard.

The Plan includes a series of measures to reduce the Project's contribution to regional and local cumulative air quality and health risk impacts. CARB has reviewed the measures presented in the Plan and have the following comments:

All TRUs Accessing the Project Site Should be Required to be Plug-In Capable

According to the Plan, approximately 40 percent of the trucks arriving at the Project site will be equipped with TRUs. TRUs on trucks and trailers can emit large quantities of diesel exhaust while operating within the Project-site. Residences and other sensitive receptors (e.g., daycare facilities, senior care facilities, and schools) located near where these TRUs could be operating would be exposed to diesel exhaust emissions resulting in significant cancer risk. To reduce the air pollutant emissions emitted during the operation of these TRUs, the Plan requires the installation of electrical outlets to serve the plug-in capable TRUs and a requirement that plug-in capable TRUs are plugged in while loading or unloading goods either in loading docks or non-dock parking spaces. However, the Plan state's that a "good faith" effort will be made to encourage the use of these electrical outlets by posting signs on the loading docks indicating plug-in availability and email notifications to vendors. Although the Plan includes the infrastructure to support plug-in capable TRUs, there is no plan or enforcement mechanism to require that they are used by all plug-in capable TRUs visiting the Project site. To this end, CARB urges the City to include in the Plan that would require Custom Goods to have contractual language in tenant lease agreements that requires all TRUs entering the Project site to be plug-in capable and to plug-in while at loading/unloading docks.

- **Response:** Custom Goods does not anticipate tenant lease agreements. See additional responses below for actions Custom Goods will take to support plug-in TRUs.

The City Should Require all Project-related Trucks and On-site equipment to be Zero-Emission

The Project would include the operation of diesel-powered trucks and onsite equipment. These trucks and onsite equipment, and others operating at industrial facilities within the OAB, will increase air pollutions exposure in the West Oakland Community. As previously discussed, the Project would result in 140 daily diesel-powered drayage truck trips and 90 daily diesel-powered on-road truck trips. The Plan also states that the operation of the Project would include the operation of one 35,000 pound capacity diesel forklift and two diesel yard hostlers. To reduce the Project's air pollutant emissions and be consistent with Executive Order N-79-20, CARB urges the City to require the trucks and onsite equipment serving the Project to be completely zero emission.

- **Response**: Custom Goods has agreed to use a high capacity electric forklift instead of the 35,000 lb capacity diesel forklift previously proposed . In addition, Custom Goods is currently converting on-site equipment to all electric, including yard hostlers, with newer sealed battery technology, which conversion will be completed. Custom Goods has initiated orders on this equipment. Estimated time for full conversion is end of 2023 to mid 2024, which could shift depending on the state of global supply chains and final delivery time frames from the manufacturers. Ultimately, all on site equipment will be zero emission. For a discussion of trucks associated with the project, see responses below. As noted below, Custom Goods will be subject to a technology review every three years.

The City can obtain a list of commercially available zero-emission trucks from the Hybrid and Zero Emission Truck and Bus Voucher Incentive Project (HVIP).[6] The HVIP is a part of California Climate Investments to incentivize the purchase of zero emission trucks. According to the emission calculations presented in the Plan, the drayage trucks would consist of heavy-duty drayage, and the on-road trucks would consist of heavy heavy-duty T7 Trucks. Based on CARB review of the zero emission trucks listed in the HVIP, electric trucks such as the Kenworth T680E Battery Electric Truck or BYD 8TT Class 8 Battery Electric Truck could meet the cargo transportation needs of the Project today. Yard tractors and forklifts are also commercially available and can be purchased using incentive funding from CARB's Clean Off-Road Equipment Voucher Incentive Project (CORE) administered by CALSTART[7] or the HVIP.

Although the Plan does include a Technology Assessment Program that commits Custom Goods to search out cleaner technology that could be implemented into the Project every

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6 Zero-Emission Truck and Bus Voucher Incentive Project. Accessible at: *https://californiahvip.org/*

7 Clean Off-Road Equipment Voucher Incentive Project. Accessible at: *https://californiacore.org/how-to-participate/*

three years, the technology for zero emission trucks is readily available today. To guarantee that the Project does not increase air pollution emissions in the West Oakland Community, the Plan should include a measure requiring the use of electric trucks. CARB urges the City to include in the Plan, a requirement that Custom Goods should include contractual language in tenant lease agreements that requires all trucks accessing the Project site to be completely electric starting no later than 2023.

- **Response**: As noted above, Custom Goods does not conduct tenant leasing.

The Plan Should Include Cumulative Air Pollutant Emissions from the OAB Development

The Plan includes a measure that would require the City and tenants to evaluate feasible emission reduction measures in the event cumulative air pollutant emissions from the combined operation of the OAB exceed the BAQMD's significance thresholds. This measure further states that "any measures agreed to by both City and tenants shall be implemented within a reasonable time period agreed upon by the City and the tenant(s)." For complete transparency to the public, specifically the West Oakland Community, the City should define, in the Plan, the criteria that would be used to determine if an emission reduction measure is feasible or not, and what constitutes a reasonable period of time in which a measure would be implemented. The Plan also includes a measure that would require the City to calculate the cumulative air pollutant emissions of all permanent projects at the OAB, based on the prior operational air quality plans, and compare them against the BAAQMD's significance thresholds. However, the Plan does not appear to include the cumulative air pollutant emissions of industrial developments in the OAB to date. CARB urges the City to a table in the revised Plan summarizing the cumulative air pollution emissions from the OAB.

- **Response:**. A table describing cumulative emissions from the OAB prepared by Dave Mitchell dated October 25, 2021, is added as an attachment to the Plan.

The Technology Review Program Should Evaluate New Technologies Every Two Years.

The Plan commits Custom Goods to implement a Technology Review Program. As part of this program, Custom Goods will identify the cleanest commercially available technologies every three years. Custom Goods will implement the technologies within 12 months if the identified technologies are practical and economically feasible. Given the rate of advancement in technology, the City should require that these technology reviews occur every two years and be submitted to the City for evaluation and approval, in consultation with BAAQMD and CARB.

- **Response:** All of the existing tenants at the Gateway Industrial District at the former Oakland Army Base are required to complete a technology review every three years, and it would not be appropriate or equitable to require a different timeline from Custom Goods.

The Plan Should Include Substantial Evidence to Support the Assumptions Used in the Project's Air Pollutant Emissions Calculations.

CARB has reviewed the air pollution emission calculations presented in Exhibit A of the Plan and has concerns regarding the assumptions used to estimate the Project's PM and NOx emissions.

The City assumed all TRUs visiting the Project site would not idle longer than one hour. Data obtained by CARB staff indicates that TRUs can operate for as long as two hours per visit, which is well above the one-hour duration assumed in the Project's air quality analysis. Unless the City restricts TRU idling durations to less than one hour, the Project's air pollutant emission estimates should be revised. The revised air pollutant calculations should assume a TRU idling duration legitimized by substantial evidence.

- **Response:** Approximately 115 trucks are expected to visit the site daily, 70 drayage trucks inbound from the Port and 45 over-the-road trucks that will carry outbound product. All refrigerated product coming from the Port will be transported on reefer containers that are equipped with electric TRUs which are plug-in capable and will be plugged in upon arrival to outlets on pedestals or the dock wall. Approximately 10 percent of the outbound over-the-road trucks entering the site equipped with TRUs attached to a reefer trailer would be plug-in capable. Custom Goods estimates that on a daily basis, approximately 16 truck/trailers with TRUs would not be plug-in capable. As described in the AQ Plan and per the operating procedures of Custom Goods for outbound, loading typically happens within approximately 30 minutes, reducing the idle time for any TRUs that are not plug-in capable. Seals at the loading doors will keep the dock temperature modulated so that TRUs do not need to be run continuously. Custom Goods will modify the AQ Plan to restrict idling of TRUs that are not plug-in capable to one-hour. Custom Goods will establish on-site enforcement, including, but not limited to, monitoring by designated personnel and posting signs near the site entrance and truck parking areas.

The City assumed 40 percent of the trucks assessing the Project site would be equipment with TRUs. It is unclear in the Plan how this estimate was derived. Due to the large size of the proposed warehouse development, CARB is concerned that the number of TRUs visiting the Project site may be underestimated in the Project's air quality analysis. CARB urges the City to provide substantial evidence to support this assumption.

The City assumed the TRUs accessing the Project site would have an average power rating of 34 hp. TRUs with a power rating of less than 25 hp have a higher PM emission rate (0.3 g/bhp-hr) than those greater than 25 hp (0.02 g/bhp-hr). Unless the City prohibit TRUs with a power rating of less than 25 hp from accessing the Project site, the Project's air quality analysis should be revised. The revised Plan should assume a conservative percentage of the TRUs entering the Project site will have a power rating of less than 25 hp, legitimized by substantial evidence.

- **Response:** The analysis was revised to reflect percentages of TRUs less than 25 hp and over 25 hp using the CARB 2021 TRU Emission Inventory and based the types of TRUs to be used at the project site (see Appendix C). The inventory operating hours for each TRU type was used to estimate a fraction for each TRU category. According to the inventory, the 25 hp and over TRUs are used on approximately 60 percent California Trailer TRUs compared to 40 percent of California Trailer TRUs that are under 25 hp. The CARB emission factors for each engine size were then used to calculate the emissions for each category. The revised TRU calculations are included in an emissions spreadsheet attached to the AQ Plan. A copy of the TRU Inventory document is also attached to the AQ Plan.

The Plan used CalEEMod's 9.5-mile default trip distance to model the Project's mobile emissions from the 90 daily over the road trucks trips leaving the Project site. According to the Plan, port drayage trucks would transport goods to the Project site and over the road trucks would transport the inspected goods to other destinations. It is unclear in the Plan how far outbound trucks would travel from the Project. CARB urges the City to base the Project's air quality analysis on Project-specific trip distances in the revised Plan.

- **Response:** The outbound truck trip emission estimate used the CalEEMod trip lengths for Alameda County which are 9.5 miles for commercial-work (C-W) and 7.3 miles for commercial-non work (C-NW) trips. The 2012 Addendum estimated truck emissions based on 20 minutes of travel at an average speed of 15 MPH, which results in a trip length of 4.5 miles. The use of the 9.5/7.3-mile trip length is more conservative than the trip length used in the 2012 Addendum and is appropriate for determining consistency with the EIR.

The air pollutant emission calculations presented in the Plan assumed 28 percent of the total daily TRUs visiting the Project site would be plug-in capable and will be connect to electrical outlets while at loading/unloading docks. Unless the Plan includes a measure that would require at a minimum of 28 percent of the all TRUs visiting the Projects site to plug-in while loading or unloading goods at the Project site, the Project's air pollutant emission estimates should be revised assuming none of the TRUs are plug-in capable.

- **Response**: Approximately 115 trucks/trailers are expected to visit the site, of which forty-six are expected to be equipped with TRUs. Sixty percent of all truck/trailers visiting the site are coming from the Port. All trucks/trailers from the Port equipped with TRUs are plug-in capable. Therefore, approximately 30 of the 46 truck/trailers with TRUs, or 67 percent, are expected to be plug-in capable. Custom Goods will establish a monitoring program that will track the number of trucks equipped with TRUs and demonstrate that a minimum 28% of the total truck/trailers equipped with TRUs are plug-in capable.

Conclusion

To reduce the exposure of toxic diesel PM emissions in disadvantaged communities already impacted by air pollution, the final design of the Project should include all existing and emerging zero-emission technologies to minimize diesel PM and NOx emissions, as well as the greenhouse gas emissions that contribute to climate change. CARB encourages the City to implement the recommendations listed in this comment letter to reduce the Project's operational air pollution emissions.

CARB also urges the City to extend the 17-day review and comment period for this and future air quality plans within the OAB to at least 45 days. An extension of the review and comment period will allow stakeholders and members of the community more time to review the plans submitted by the City.

- **Response:** CARB and BAAQMD comments are the only comments received. Also, Staff has not received any other requests to extend the 17-day review and comment period.

Given the breadth and scope of projects subject to review under the California Environmental Quality Action (CEQA) throughout California that have air quality and greenhouse gas impacts, coupled with CARB's limited staff resources to substantively respond to all issues associated with a project, CARB must prioritize its substantive comments here based on staff time, resources, and its assessment of impacts. CARB's deliberate decision to substantively comment on some issues does not constitute an admission or concession that it substantively agrees with the lead agency's findings and conclusions on any issues on which CARB does not substantively submit comments.

CARB appreciates the opportunity to comment on the Plan for the Project and can provide assistance on zero-emission technologies and emission reduction strategies, as needed. If you have questions, please contact Stanley Armstrong, Air Pollution Specialist via email at *stanley.armstrong@arb.ca.gov*.

Sincerely,

Robert Krieger, Branch Chief, Risk Reduction Branch

cc: See next page.

cc: State Clearinghouse
state.clearinghouse@opr.ca.gov

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Stanley Armstrong, Air Pollution Specialist, Risk Reduction Branch

City Staff Response to Comments

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AIR QUALITY
MANAGEMENT
DISTRICT

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(Secretary)
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Jack P. Broadbent
EXECUTIVE OFFICER/APCO

Connect with the
Bay Area Air District:

July 15, 2021

Corey Alvin
Environmental Coordinator
City of Oakland Planning and Building Department
250 Frank H. Ogawa Plaza, Suite 3315
Oakland, CA 94612

RE: Air Quality Plan for the Operations of Custom Goods

Dear Mr. Corey Alvin:

Bay Area Air Quality Management District (Air District) staff has reviewed the Air Quality Plan for Operations (Plan) for Custom Goods (Project). The Project will occupy 189,038 square feet of warehouse at the Oakland Global Logistics Center, located at 2001 Maritime Street and referred to as the CC-1 Warehouse. The CC-1 Warehouse is part of the Oakland Army Base (OAB) and subject to Standard Conditions of Approval (SCAs) and Mitigation Measures (MM) adopted by the Oakland City Council (City) and Port of Oakland (Port) to lessen the significant air quality impacts anticipated with OAB buildout. The OAB also is adjacent to West Oakland, which suffers from disproportionately high exposure to toxic air contaminants (TACs) and particulate matter (PM) emissions.

Due to TACs and PM emissions in the community, West Oakland is the focus of substantial efforts by the Air District and others to reduce public exposure to these emissions. For example, West Oakland was selected for the first AB 617 Community Health Protection Action Plan in the Bay Area. Approved by the State Legislature in 2017, AB 617 established the Community Air Protection Program to improve conditions in communities like West Oakland. Co-led by the Air District and the West Oakland Environmental Indicators Project, *Owning Our Air: The West Oakland Community Action Plan*, illustrates both the community's disproportionate exposure to emissions and strategies to reduce emissions and exposure.

Air District staff recognizes that the tenant, Custom Goods, has committed to the following measures that mitigate Project emissions:

- Limiting idling to two minutes for all in-bound and out-bound delivery vehicles,
- Developing a dock management program,
- Implementing zero and near-zero emissions off-road equipment,
- Installing LEED gold features, including bike storage, low-flow plumbing fixtures, energy-efficient lighting, and natural ventilation,
- Using renewable energy, including on-site solar photovoltaic power, and
- Encouraging delivery trucks with electrified transport refrigeration units to plug in during loading and unloading at the dock.

While these actions will mitigate Project emissions, many of the other actions cited in the Plan simply require the tenant to comply with existing regulations. Complying with existing regulations, such as the California Air Resources Board Truck and Bus Regulation, Drayage

Truck Regulation, Tractor-Trailer Greenhouse Gas Reduction Regulation, and City of Oakland truck routes and other truck regulations, is extremely important. However, regulatory compliance is not considered a mitigation.

To meet the spirit of *Owning Our Air* and to reduce emissions beyond what is required by law, staff strongly recommends the Plan also should *require*:

- An aggressive schedule to transition the tenant's diesel Tier 4 interim and Tier 4 fleet to zero-emissions equipment and vehicles,
    - **Response:** Custom Goods has agreed to dis-continue use of its 35,000lb capacity diesel forklift. In addition, Custom Goods is currently converting on-site equipment to all electric with newer sealed battery technology by mid-2024, which could shift depending on the state of global supply chains and final delivery timeframes from the manufacturers . As noted below, Custom Goods will be subject to a technology review every three years.

- All trucks entering the OAB property to meet 2010 diesel emission standards immediately (i.e., ahead of regulatory deadlines), and
    - **Response:** Custom Goods does not have its own fleet of trucks and is unable to regulate the third party trucking companies and independent operators that will come to the site. All diesel trucks coming to the site will meet current laws and regulation.

- All trucks with transport refrigeration units to be electric plug-in ready and to plug in when at the loading dock.

    Response Approximately 115 trucks are expected to visit the site daily, 70 drayage trucks inbound from the Port and 45 over-the-road trucks that will carry outbound product. All refrigerated product coming from the Port will be transported on reefer containers that are equipped with electric TRUs which are plug-in capable and will be plugged in upon arrival to outlets on pedestals or the dock wall. Approximately 10 percent of the outbound over-the-road trucks entering the site equipped with TRUs attached to a reefer trailer would be plug-in capable. Custom Goods estimates that on a daily basis, approximately 16 truck/trailers with TRUs would not be plug-in capable. As described in the AQ Plan and per the operating procedures of Custom Goods for outbound, loading typically happens within approximately 30 minutes, reducing the idle time for any TRUs that are not plug-in capable. Seals at the loading doors will keep the dock temperature modulated so that TRUs do not need to be run continuously. Custom Goods will modify the AQ Plan to restrict idling of TRUs that are not plug-in capable to one-hour. Custom Goods will establish on-site enforcement, including, but not limited to, monitoring by designated personnel and posting signs near the site entrance and truck parking areas.

In addition, Air District staff encourages the tenant to take advantage of the following Air District programs to reduce emissions from vehicles and equipment:

- **Incentives and Grants:** To learn more about the Air District's incentive programs which may be available to help Custom Goods fund equipment replacements, visit the website baaqmd.gov/funding-and-incentives.

- **Demonstration Projects:** To support demonstration projects, please contact Areana Flores (aflores@baaqmd.gov), Senior Staff Specialist in our Technology Implementation Office to learn about how the Air District can assist Custom Goods with projects that demonstrate alternative energy generation, including on-site solar photovoltaic power.

Air District staff continues to be willing and ready to work with the City, Port, developers, and tenants to develop an Air Quality Plan for Operations that will do more to protect the health of the West Oakland community. If you have any questions or would like to discuss Air District recommendations further, please contact Alison Kirk, Principal Environmental Planner, at akirk@baaqmd.gov.

Sincerely,

Greg Nudd
Deputy Air Pollution Control Officer

cc: BAAQMD Secretary John J. Bauters
BAAQMD Director Pauline Russo Cutter
BAAQMD Director David Haubert
BAAQMD Director Nate Miley