Air Quality & Greenhouse Gas Emissions Assessment for the San Diego Clean Fuels Facility, LLC Project

National City, California

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

LIST OF ACRONYMS AND ABBREVIATIONS

Term	**Description**
AB	Assembly Bill
ASF	Age Sensitivity Factor
ATC	Authority to Construct
BNSF	Burlington Northern and Santa Fe
BR	Breathing Rate
BW	Body Weight
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CERP	Community Emissions Reduction Plan
City	National City
County	San Diego County
CO	Carbon Monoxide
CO_2	Carbon Dioxide

Term	Description
CO_2e	Carbon Dioxide Equivalent
DPM	Diesel Particulate Matter
ED	Exposure Duration
EF	Exposure Frequency
EO	Executive Order
FAH	Fraction of time at home
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GLC	Ground Level Concentration
HARP	Hot Spots Analysis & Reporting Program
HRA	Health Risk Assessment
HVAC	heating, ventilation, and air conditioning system
ICCT	International Council on Clean Transportation
IPCC	Intergovernmental Panel on Climate Change
I-5	Interstate 5
Kg	kilogram
L	Liter
MCAS	Maritime Clean Air Strategy
MEIR	Maximumly Exposed Individual Resident
MEIW	Maximumly Exposed Individual Worker
mg	milligram
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen Dioxide
NO_X	Nitric Oxides
O_3	Ozone
OEHHA	Office of Environment Health Hazard Assessment
PM	Particulate Matter
PM_{10}	Coarse Particulate Matter
$PM_{2.5}$	Fine Particulate Matter
ppm	Parts per Million
RAQS	Regional Air Quality Strategy
REL	Reference Exposure Level
ROG	reactive organic gases
SAF	Sustainable Aviation Fuel
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SoCAB	South Coast Air Basin
TAC	Toxic Air Contaminants
T-BACT	Toxics Best Available Control Technology
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

This report documents the results of an Air Quality, Health Risk, and Greenhouse Gas (GHG) Emissions Assessment completed for the San Diego Clean Fuels Facility (Project), which includes infrastructure for the transloading of bio-diesel fuel, renewable diesel fuel and either ethanol or sustainable aviation fuel (SAF) directly from rail cars into trucks on a 6.58-acre site in National City (City). This assessment was prepared using methodologies and assumptions recommended in the rules and regulations of the San Diego Air Pollution Control District (SDAPCD). Regional and local existing conditions are presented, along with pertinent emissions standards and regulations. The purpose of this assessment is to estimate Project-generated criteria air pollutants, health risk and GHG emissions attributable to the Project and to determine the level of impact the Project would have on the environment. Significance levels derived from SDAPCD regulations are utilized to compare modeled Project emissions and determine significance.

1.1 Project Location and Description

The Project Site, located in National City, is an industrial property bound by Civic Center Drive to the north, the existing Burlington Northern and Santa Fe (BNSF) Railway tracks to the west, W. 19th Street to the south, and the existing buildings along Cleveland Avenue to the east. The new San Diego Clean Fuels Facility will reconfigure one existing rail spur and add truck loading spots to transload clean renewable and bio-fuels (renewable diesel, biodiesel, ethanol, and potentially sustainable aviation fuels at a later date) directly from rail cars into trucks for more efficient delivery to local retailers than the current supply chain. Each truck loading location will consist of a pump skid, controls, and above ground manifold system. Small amounts of lubricity, conductivity, and regulated volatile organic compounds (VOC) red dye will be added in-line to renewable diesel fuels during the transload process depending on the customer specifications. The rail car unloading and truck loading areas will be equipped with a containment system capable of containing the contents of 110 percent of an entire rail car volume.

Rail cars will be delivered to the facility by BNSF Railway and placed directly on designated receiving tracks. After completing the quality and quantity assurance requirements for the product in each rail car, facility operators will unload the fuel commodities directly from the rail cars into trucks via a short manifold system. Emissions from loading will be managed in compliance with the SDAPCD's Air Permit requirements. Once emptied, the railroad will remove cars and replace them with full ones as needed.

Crews of 4 liquid fuel certified operators will work at the facility 24 hours per day, 7 days per week. Up to 10 operators would be on site at any given time (shift change). A total of 21 full-time operators with one supervisor per shift and one facility manager will be employed at the facility. An office trailer will be provided on site and will incorporate the control center for the equipment, restrooms, and an area for driver check-in and receipt of Bills of Lading.

Truck traffic will enter the site from 18th Street and exit on W 19th Street and on to their retail client deliveries. A second rail line will be added at the existing grade crossing on Civic Center Drive to facilitate rail car movements. These trucks trips will replace existing trips of conventional fuels, delivering the benefits of the lower carbon, renewable fuels to the area.

Construction of the Project is anticipated to last approximately six to eight months. Construction activities associated with the Proposed Project would include the addition of new receiving and departure rail spurs and four fixed truck loading spots with required secondary containment infrastructure.

2.0 AIR QUALITY

2.1 Environmental Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the San Diego Air Basin (SDAB), which encompasses the Project Site, pursuant to the regulatory authority of the SDAPCD.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project Area.

2.1.1 San Diego Air Basin

The Project Site is located in National City, which is in San Diego County (County). This region is within the SDAB. The topography in the SDAB varies greatly, from beaches on the west to mountains and desert on the east. Much of the topography in between consists of mesa tops intersected by canyon areas. The region's topography influences air flow and the dispersal and movement of pollutants in the basin. The mountains to the east prevent air flow mixing and prohibit dispersal of pollutants in that direction.

Regional climate and local meteorological conditions influence ambient air quality. The climate of the SDAB is dominated by a semi-permanent high-pressure cell located over the Pacific Ocean. This cell, called the Pacific High-Pressure Cell (or Zone) influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year. The high-pressure cell also creates two types of temperature inversions that may act to degrade local air quality. Subsidence inversions occur during the warmer months as descending air associated with the Zone meets cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. The other type of inversion, a radiation inversion, develops on winter nights, when air near the ground cools through radiation and the air aloft remains warm. The shallow inversion layer formed between these two air masses can also trap pollutants. During mild Santa Ana wind conditions, ambient air quality in the SDAB is affected by air quality in the South Coast Air Basin (the metropolitan areas of Los Angeles, Orange, San Bernardino, and Riverside counties). Air pollutants, specifically the components of smog, are transported to the County during relatively mild Santa Ana weather conditions. Winds blowing toward the southwest transport the polluted air from the South Coast Air Basin over the ocean. The sea breeze brings this air onshore into the County. When the transported smog is at ground level, the highest ozone (O_3) concentrations are measured at coastal and near-coastal monitoring sites. However, when the blown-in smog cloud is elevated, coastal sites may be passed over, and the transported O_3 is measured farther inland.

2.1.2 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. O_3, coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen oxides (NO_x), and sulfur dioxide (SO_2) are local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant in certain scenarios. Health effects commonly associated with criteria pollutants are summarized in Table 2-1.

Table 2-1. Summary of Criteria Air Pollutants Sources and Effects

Pollutant	Major Manufactured Sources	Human Health and Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_x	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROG) and nitrogen oxides (NOx) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
$PM_{2.5}$ & PM_{10}	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.

Source: California Air Pollution Control Offices Association (CAPCOA) 2013

2.1.2.1 Carbon Monoxide

CO, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease, and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances (i.e., up to 600 feet or 185 meters) of the source. Overall CO emissions are decreasing because of the Federal Motor

Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

2.1.2.2 Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NO_x). Motor vehicle emissions are the main source of NO_x in urban areas. NO_x is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_x, such as nitric oxide and nitrogen dioxide (NO_2), attribute to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_x concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

2.1.2.3 Ozone

Ozone (O_3) is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOC) also known as reactive organic gases (ROG) and NO_x undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicle and other internal combustion engine exhaust. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

2.1.2.4 Sulfur Dioxide

SO_2 is a colorless gas with a pungent odor, however sulfur dioxide can react with other particulates in the atmosphere to for particulates that contribute to the haze effect. SO_2 standards have been developed by the U.S. Environmental Protection Agency (USEPA) to regulate all sulfur oxides, however SO_2 is by far the most abundant sulfur oxide in the atmosphere. Currently, SO_2 is primarily a result of the burning of fossil fuels for power generation and other industrial sources. Modern regulations on diesel fuel have greatly reduced the amount of SO_2 in the atmosphere and there are currently no areas in California that have levels of SO_2 that are not acceptable by state or federal standards.

2.1.2.5 Particulate Matter

Particulate matter includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and smaller than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NOx, sulfur oxides (SOx) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the USEPA, some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

2.1.3 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TAC) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Carcinogenic TACs can also have noncarcinogenic health hazard levels.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children, whose lungs are still developing, and the elderly, who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Diesel engines also contribute to California's $PM_{2.5}$ air quality problems. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

2.1.3.1 Diesel Exhaust

As noted above, the California Air Resources Board (CARB) identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern based on the relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (i.e., heavy-duty, light-duty), engine operating conditions (i.e., idle, accelerate, decelerate), fuel formulations (i.e., high/low sulfur fuel), and the year of the manufacture of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

2.1.3.2 Ethanol

The storage of ethanol can potentially result in the emission of VOCs, which may pose health risks upon inhalation. The health effects from breathing VOCs emitted during ethanol storage depend on factors such as the concentration of VOCs, duration of exposure, and individual susceptibility. Some possible health effects associated with exposure to VOCs from stored ethanol include respiratory Irritation, headaches and dizziness, eye irritation, nausea and vomiting. Chronic exposure to certain VOCs emitted during the storage of ethanol may be associated with long-term health risks, including damage to the liver, kidneys, and the central nervous system. It is important to note that the health risks depend on the specific types and concentrations of VOCs emitted during ethanol storage. Adequate ventilation and proper storage practices can help minimize the release of VOCs.

2.1.4 Ambient Air Quality

Ambient air quality at the Project Site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations in comparison to health-based air quality standards established by California (California Ambient Air Quality Standards [CAAQS]) and the USEPA (National Ambient Air Quality Standards [NAAQS]). CARB and the USEPA compare ambient air criteria pollutant measurements with the CAAQS and NAAQS, respectively, to assess the status of air quality of regions. CARB maintains more than 60 monitoring stations throughout California. The Sherman Elementary School (450 24th Street, San Diego) air quality monitoring station, located approximately 3.5 miles north of the Project Area, is the closest station to the site and monitors ambient concentrations of O_3 and $PM_{2.5}$. The Chula Vista monitoring station (80 East J Street, Chula Vista), located approximately 4 miles southeast of the Project, monitors ambient concentrations of PM_{10}. The Sherman Elementary School monitoring station (450B 24th Street, San Diego) located approximately 3 miles north of the Project Site, monitors ambient concentrations of O_3 and $PM_{2.5}$. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered *generally* representative of ambient concentrations in the development area. Table

2-2 summarizes the published data concerning O_3, $PM_{10,}$ and $PM_{2.5}$ since 2018 from the Sherman Elementary School and Chula Vista monitoring stations for each year that the monitoring data is provided.

Table 2-2. Summary of Ambient Air Quality Data

Pollutant Scenario	2020	2021	2022
O_3 – Sherman Elementary School			
Max 1-hour concentration (ppm)	0.115	0.076	0.087
Max 8-hour concentration (ppm) (state/federal)	0.088 / 0.087	0.064 / 0.063	0.063 / 0.063
Number of days above 1-hour standard (state)	2	0	0
Number of days above 8-hour standard (state/federal)	3 / 3	0 / 0	0 / 0
PM_{10} – J Street			
Max 24-hour concentration ($\mu g/m^3$) (state/federal)	* / 178.5	* / 122.8	* / 150.9
Annual Average (federal)	50.8	43.0	42.1
Number of days above 24-hour standard (state/federal)	* / 15.0	* / 0.0	* / 0.0
$PM_{2.5}$ – Sherman Elementary School			
Max 24-hour concentration ($\mu g/m^3$) (state/federal)	54.4 / 51.9	26.3 / 25.6	20.8 / 20.8
Number of days above federal 24-hour standard	6.1	0.0	0.0

Sources: CARB 2023a
Notes: *Insufficient data available
$\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million

The USEPA and CARB designate air basins or portions of air basins and counties as being in *attainment* or *nonattainment* for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. Acceptable exceedances of the maximum value vary for the NAAQS from fourth highest concentration for the 8-hour O_3 standard to 99th percentile to the SO_2 standard. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The CAAQS are not to be exceeded during a three-year period. The attainment status for the San Diego County portion of the SDAB, which encompasses the Project Site, is included in Table 2-3.

Table 2-3. Attainment Status of Criteria Pollutants in the San Diego Air Basin

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

Source: CARB 2022a

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant The region is designated as a nonattainment area for the federal O_3 standard and is also a nonattainment area for the state standards for O_3, PM_{10}, and $PM_{2.5}$ (CARB 2022a).

2.1.5 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The Project Area is surrounded by a Costco Optical Laboratory directly to the west, and industrial and retail on all other sides. The nearest sensitive receptor is the McKinley Apartments Complex, approximately 380 feet east of the Project. The nearest school is Kimball Elemental School located approximately 0.3 mile (1,580 feet) east of the Project.

2.2 Regulatory Framework

2.2.1 Federal

2.2.1.1 Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those *sensitive receptors* most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the San Diego County portion of the SDAB for the criteria pollutants.

2.2.2 State

2.2.2.1 California Clean Air Act

The California Clean Air Act allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California’s State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

2.2.2.2 California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The County Regional Air Quality Strategy (RAQS) was initially adopted in 1991 and is updated on a periodic basis. The RAQS was updated in 1995, 1998, 2001, 2004, 2009, 2016 and most recently in 2022. The RAQS outlines the SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The SDAPCD has also developed the SDAB's input to the SIP, which is required under the federal CAA for pollutants that are designated as being in nonattainment of federal air quality standards for the basin.

The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth, to project future emissions and then establish the strategies necessary for the reduction of emissions through regulatory controls. The RAQS and the SIP utilized the *2021 Regional Plan* prepared by the SANDAG to project future growth in the air basin. The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin. The plan also includes rules and regulations that have been adopted by the SDAPCD to control emissions from stationary sources. Stationary source control measures are developed by the SDAPCD with the goal of setting limits on the amounts of emissions from various types of sources and/or requiring specific emissions control technologies. In order to implement control measures, a permit system is used to impose controls on new and modified stationary sources and to ensure compliance with regulations by prescribing specific operation conditions or equipment on a source.

The SDAPCD adopted the *2020 Plan for Attaining the National Ozone Standards*, which was voted for approval by the District Board in early October 2020. The plan was submitted to CARB for their approval, and then submittal to the USEPA as a revision to the California SIP for attaining the O_3 standards. The *2020 Plan for Attaining the National Ozone Standards* demonstrates how the region will further reduce air pollutant emissions in order to attain the current NAAQS for O_3 by specified dates. SANDAG was also involved in the preparation of the *2020 Plan for Attaining the National Ozone Standards* through the collection and review of the data necessary to generate comprehensive emission inventories, including socio-economic projections and industrial and travel activities.

2.2.2.3 Tanner Air Toxics Act & Air Toxics "Hot Spot" Information and Assessment Act

CARB's Statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics *Hot Spots* Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the *Hot Spots* Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

2.2.2.4 In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulations)

In November 2022, CARB approved amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation) aimed at further reducing emissions from the off-road sector. The amendments require fleets to phase-out use of the oldest and highest polluting off-road diesel vehicles in California; prohibit the addition of high-emitting vehicles to a fleet; and require the use of R99 or R100 renewable diesel in off-road diesel vehicles. Off-road vehicles subject to the amended rule are used in construction, mining, industrial operations, and other industries. The amended rule went into effect January 2024.

According to CARB (2022b), the amended rule will reduce harmful air pollutants from over 150,000 in-use off-road diesel vehicles that operate in California and is expected to yield $5.7 billion in health benefits, prevent more than 570 air-quality related deaths and nearly 200 hospitalizations and emergency room visits from 2023 to 2038. From 2024 through 2038, the current amendments will generate an additional reduction above and beyond the current regulation of approximately 31,087 tons of NOx and 2,717 tons of $PM_{2.5}$ (CARB 2022b). About half of those additional reductions are expected to be realized within the first five years of implementation (CARB 2022b).

2.2.3 Local

2.2.3.1 San Diego Air Pollution Control District

In addition to the RAQS, the SDAPCD has the primary responsibility for controlling emissions from construction activity throughout the SDAB. In December 2005, the SDAPCD adopted the *Measures to Reduce Particulate Matter* in the SDAB. This document identifies fugitive dust as the major source of directly emitted particulate matter in the SDAB, with mobile sources and residential wood combustion as minor contributors. Data on $PM_{2.5}$ source apportionment indicates that the main contributors to $PM_{2.5}$ in the SDAB are combustion organic carbon, and ammonium sulfate and ammonium nitrate from combustion sources. The main contributors to PM_{10} include resuspended soil and road dust from unpaved and paved roads, construction and demolition sites, and mineral extraction and processing. Based on the report's evaluation of control measures recommended by CARB to reduce particulate matter emissions, the SDAPCD adopted Rule 55, the Fugitive Dust Rule, in June 2009. The SDAPCD requires that construction activities implement the measures listed in Rule 55 to minimize fugitive dust emissions. Rule 55 requires the following:

1. No person shall engage in construction or demolition activity in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.

2. Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall be minimized by the use of any of the equally effective track-out/carry-out and erosion control measures listed in Rule 55 that apply to the project or operation. These measures include track-out grates or gravel beds at each egress point; wheel-washing at each egress during muddy conditions; soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; watering

for dust control; and using secured tarps or cargo covering, watering, or treating of transported material for outbound transport trucks. Erosion control measures must be removed at the conclusion of each workday when active operations cease, or every 24 hours for continuous operations.

There are other SDAPCD rules and regulations, not detailed here, which may apply to the Proposed Project, but are administrative or descriptive in nature. These include rules associated with fees, enforcement and penalty actions, and variance procedures. The following additional rules and regulations would apply to the construction of the Project:

- Rule 20 *New Source Review:* SDAPCD Rule 20 requires that any new or modified source of air emissions in the SDAB obtain an Authority to Construct (ATC) from the SDAPCD prior to construction of the project. Specifically Rule 20.2 applies to this project as it will be likely be considered a Non-Major Stationary Source. An Air Quality Impact Analysis must be conducted and excepted by the SDAPCD if the project stationary source emissions are over those presented in Table 20.2 – 1 found in SDAPCD Rule 20.2.
- Rule 50 *Visible Emissions:* Establishes limits to the opacity of emissions within the SDAPCD.
- Rule 51 *Nuisance*: Prohibits emissions that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health, or safety of any such persons or the public; or which cause injury or damage to business or property.
- Rule 52 *Particulate Matter*: Establishes limits to the discharge of any particulate matter from non-stationary sources.
- Rule 54 *Dust and Fumes*: Establishes limits to the amount of dust or fume discharged into the atmosphere in any single hour.
- Rule 67.0.1 *Architectural Coatings*: Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.
- Rule 67.7 *Cutback and Emulsified Asphalts:* Prohibits the sale and use of cutback and emulsified asphalt materials for the paving, construction or maintenance of parking lots, driveways, streets, and highways which exceed the County standards for the percent by volume of VOC that evaporate into the atmosphere under temperate conditions.

2.2.3.2 AB 617 Portside Community

AB 617 was established to reduce exposure to pollution in communities with high emission source densities. The Project is located in the Portside Community identified as a community with a high amount of emission sources. The *Maritime Clean Air Strategy* and *Community Emissions Reduction Plan* discussed below were developed through AB 617 programs to assist the community in reducing exposure to harmful emissions.

2.2.3.3 Maritime Clean Air Strategy

The Board of Port Commissioners adopted the Maritime Clean Air Strategy (MCAS) as a strategic planning document on October 12, 2021. The goals and objectives of the MCAS are aspirational, non-binding, and will be pursued through a variety of means. The MCAS vision statement is health equity for all. Per the document, the MCAS vision will be attained through strategic partnerships and various strategies determined by available technology. The majority of the strategies in the MCAS are focused on Port activities, however the general goals apply to all facilities in the Port district.

2.2.3.4 Community Emissions Reduction Plan

The Portside Community Emissions Reduction Plan (CERP) was adopted by both SDAPCD and CARB in 2021. The CERP aims to reduce the Portside community's exposure to emissions and promote health and environmental justice for the Portside community. The CERP is designed to guide the community and businesses to achieve emissions beyond regulatory standards, establishing various strategies to reduce criteria air pollutants emissions from various activities. The goals of the CERP are to be adjusted over time, as technology permits.

2.3 Air Quality Emissions Impact Assessment

2.3.1 Threshold of Significance

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1) Conflict with or obstruct implementation of any applicable air quality plan.
2) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
3) Expose sensitive receptors to substantial pollutant concentrations.
4) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

The significance criteria established by the applicable air quality management or air pollution control district (SDAPCD) may be relied upon to make the above determinations. According to the SDAPCD, an air quality impact is considered significant if the Proposed Project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SDAPCD recommends the usage of San Diego County thresholds of significance (San Diego County 2007) for air quality for construction and operational activities of land use development projects, such as that proposed, as shown in Table 2-4.

Table 2-4. SDAPCD Significance Thresholds – Pounds per Day	
Air Pollutant	**Construction and Operational Activities**
Reactive Organic Gas	75
Carbon Monoxide	550
Nitrogen Oxide	250
Sulfur Oxide	250
Coarse Particulate Matter	100
Fine Particulate Matter	55

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

In addition to the emission of criteria air pollutants, this Projects evaluates the health risk from construction and operations of the Proposed Project. Specifically, the potential exposure of nearby existing residents to DPM primarily from heavy duty trucks. The SDAPCD's states that potential Project health risks should be evaluated according to the *Office of Environment Health Hazard Assessment (OEHHA) Guidance Manual for Preparation of Health Risk Assessments* (2015). In addition to the OEHHA Guidelines, the SDAPCD has published Supplemental Guidelines (2022) for how dispersion modeling and risk assessments should be conducted for projects within San Diego County. According to the SDAPCD's *Supplemental Guidelines for Submission of Air Toxics "Hot Spots" Program Health Risk Assessments* (2022), cancer, non-cancer chronic and acute, and cancer burden isopleths (contours) are required if offsite cancer risks are equal to or exceed 10 in a million, the non-cancer health hazard index are equal to or exceed 1.0, or the cancer burden equals to or exceeds 1.0. In summary, the SDAPCD thresholds for what constitute an exposure of substantial air toxics from TAC sources are as follows.

- *Cancer Risk*: Emit carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in one million.
- *Non-Cancer Risk*: Emit toxic contaminants that exceed the maximum hazard quotient of 1 in one million.

Cancer risk is expressed in terms of expected incremental incidence per million population. The SDAPCD has established an incidence rate of 10 persons per million as the maximum acceptable incremental cancer risk due to TAC exposure from mobile sources. This threshold serves to determine whether a given project has a potentially significant development-specific and cumulative impact. The 10-in-one-million standard is a very health-protective significance threshold. A risk level of 10 in one million implies a likelihood that up to 10 persons out of one million equally exposed people would contract cancer if exposed continuously

(24 hours per day) to the levels of TACs over a specified duration of time. This risk would be an excess cancer that is in addition to any cancer risk borne by a person not exposed to these air toxics..

It is noted that SDAPCD Rule 1200 establishes a cancer risk threshold of 1 person per million incident rate for stationary sources of TACs that do not apply Toxics Best Available Control Technology (T-BACT) and a cancer risk threshold of 10 persons per million incidence rate for stationary sources of TACs that do apply T-BACT. It is noted that the Project TACs are primarily generated by mobile sources of emissions and therefore SDAPCD Rule 1200 does not directly apply to these sources. Furthermore, while fuel transfer activities from trains to trucks would occur on the Project Site, this activity would include T-BACT in the form of couplers that connect tanker trucks, spill containment drain valves, overfill prevention devices, and vent pressure/vacuum valves. Thus, consistent with SDAPCD Rule 1200 and San Diego County thresholds of significance (2007), the cancer risk threshold of 10 persons per million incidence rate is employed.

The SDAPCD has also established non-carcinogenic risk parameters for use in HRAs. Noncarcinogenic risks are quantified by calculating a *hazard index*, expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at, or below which health effects are not likely to occur. A hazard index less of than one (1.0) means that adverse health effects are not expected. Within this analysis, non-carcinogenic exposures of less than 1.0 are considered less than significant.

2.3.2 Methodology

Air quality impacts were assessed in accordance with methodologies recommended by the SDAPCD. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2022.1. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were calculated using CalEEMod model defaults for San Diego County and information provided by the Project proponent, such 7.5 of site acreage, 7.49 of which is assumed to be paved. Operational air pollutant emissions were calculated based on an office building square footage of 500 square feet identified in the Project Site plans, the Project's daily throughput, truck tanker capacity, and trip distances provided by US Compliance, a consultant firms specializing in environment, health, and safety compliance. In addition, the fleet mix was adjusted to reflect 69 heavy-duty trucks making both an inbound trip and outbound trip daily for a total of 138 daily heavy-duty truck trips and 42 passenger automobile trips associated with the onsite workers. In addition, mainline rail emissions were calculated with BNSF references (see Attachment A), and operational emissions were calculated with CARB Vision Access Database emission factors. In addition to operational emissions calculated using CalEEMod, health conservative VOC/ROG emissions were calculated by the US Compliance for the fuel transfer process and included in the summary tables (see Attachment B).

Additionally, offsite DPM concentrations resulting from onsite and offsite Project trucking operations within 1,000 feet of the Project were modeled. DPM Emissions were calculated using the CalEEMod program when possible and supplemental calculations prepared by ECORP Consulting, Inc., as presented in Attachment B. Mainline rail DPM emissions were calculated with BNSF references (see Attachment B). Emissions were also quantified for onsite and offsite heavy duty truck traffic and switching engine operations.

AERMOD version 21112 with a unitized emission rate was used to determine the source receptor relationship for the onsite and offsite sources of DPM associated with both Project construction and operations. AERMOD is a steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. Hot Spots Analysis & Reporting Program (HARP2, CAPCOA 2022) implements the latest regulatory guidance to develop inputs to the USEPA AERMOD dispersion model for dispersion and as the inputs for calculations for the various health risk levels. The resultant concentration values at vicinity sensitive receptors were then used to calculate chronic and carcinogenic health risk using the standardized equations contained in the *Office of Environment Health Hazard Assessment (OEHHA) Guidance Manual for Preparation of Health Risk Assessments* (2015).

2.3.3 Impact Analysis

2.3.3.1 Project Construction-Generated Criteria Air Quality Emissions

Emissions associated with Project construction would be temporary and short-term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions will be generated through construction of the Proposed Project: operation of the construction vehicles (i.e., tractors, forklifts, pavers), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving activities. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts.

Construction-generated emissions associated with the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. Attachment A provides more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in Table 2-5. Construction-generated emissions are short-term and of temporary duration, lasting only if construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the derived thresholds of significance.

Table 2-5. Construction-Related Criteria Air Pollutant Emissions						
Construction Year	**Pollutant (maximum pounds per day)**					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Project Construction	3.72	36.00	33.80	0.05	21.40	11.60
SDAPCD Potentially Significant Impact Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Exceed SDAPCD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.
Notes: Construction emissions taken from the season (summer or winter) with the highest output.

As shown in Table 2-5, emissions generated during Project construction would not exceed the SDAPCD's thresholds of significance. Therefore, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.

2.3.3.2 Project Operations Criteria Air Quality Emissions

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as O_3 precursors such as ROG and NO_X. Predicted maximum daily operational-generated emissions of criteria air pollutants for the Proposed Project are summarized in Table 2-6 and compared to the operational significance thresholds promulgated by the SDAPCD. Operational emissions were estimated using CalEEMod and estimated emissions for fuel transport and fugitive leaks calculated by the applicant. Trip counts and distances were calculated based on the Project's daily throughput, truck tanker capacity, and trip distances provided by US Compliance. In addition, mainline rail emissions were calculated for the portion of the trip in the SDAB using the BNSF ton-mile per gallon, Project throughput, BNSF engine inventory (BNSF 2020) and CARB Vision Access Database emission factors in grams per gallon diesel. EPA AP-42 Section 5.2 was used to estimate the emissions from the transloading process (see Attachment A).

Table 2-6. Operational Criteria Air Pollutant Emissions						
Emission Source	**Pollutant**					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Summer Emissions (Pounds per Day)						
CalEEMod Sources	0.30	8.79	4.37	0.06	1.87	0.57
Calculated Fugitive Evaporation	32.27	--	--	--	--	--
Mainline SDAB Rail Emissions	7.67	31.24	5.97	1.96	1.09	1.00
Project Emissions	**40.24**	**40.03**	**10.34**	**2.02**	**2.96**	**1.57**
Winter Emissions (Pounds per Day)						
CalEEMod Sources	0.28	9.12	4.32	0.06	1.87	0.57
Calculated Fugitive Evaporation	32.27	--	--	--	--	--
Mainline SDAB Rail Emissions	7.67	31.24	5.97	1.96	1.09	1.00
Project Emissions	**40.22**	**40.36**	**10.29**	**2.02**	**2.96**	**1.57**
Daily Significance Threshold	75	250	550	250	100	55
Exceed Daily Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Annual Emissions (Tons per Year)						
CalEEMod Sources	0.1	1.7	0.8	0.0	0.3	0.1
Calculated Fugitive Evaporation	5.9	--	--	--	--	--
Mainline SDAB Rail Emissions	1.4	5.7	1.1	0.4	0.2	0.2
Project Emissions	**7.4**	**7.4**	**1.9**	**0.4**	**0.5**	**0.3**
Annual Significance Threshold	*13.7*	*40*	*100*	*40*	*15*	*10*
Exceed Annual Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: [1]CalEEMod version 2022.1. Operational emissions for the Proposed Project fugitive VOC/ROG emissions calculated by US Compliance. Trip counts and distances were calculated based on the Project's daily throughput, truck tanker capacity, and trip distances provided by US Compliance. In addition, mainline rail emissions were calculated using the BNSF ton-mile per gallon, Project throughput, BNSF engine inventory and CARB Vision Access Database emission factors in grams per gallon diesel. Refer to Attachment A for Model Data Outputs.

As shown in Table 2-6, the Project's emissions would not exceed any SDAPCD thresholds for any criteria air pollutants during operations.

2.3.3.3 Project Consistency with Air Quality Planning

Consistency with RAQS

As part of its enforcement responsibilities, the USEPA requires each state with federal nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal air quality standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in federal nonattainment areas, using a combination of performance standards and market-based programs. The SDAPCD currently monitors implementation of the SIP in the SDAB through the RAQS, which as previously described contains strategies and tactics to be applied in order to attain and maintain acceptable air quality in the SDAB. The RAQS is the applicable air quality plan for the proposed project. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date. As previously described, the SDAPCD has prepared the *2020 Plan for Attaining the National Ozone Standards*.

Consistency with the RAQS is determined by two standards: (1) whether the Project would increase the frequency or severity of violations of existing air quality standards, contribute to new violations, or delay the timely attainment of air quality standards or interim reductions as contained in the RAQS; and (2) whether the Proposed Project would exceed assumptions contained in the RAQS. The air quality emission projections and emission reduction strategies in the RAQS are based on information from CARB and SANDAG regarding mobile and area source emissions. CARB mobile source emissions projections and SANDAG growth projections are derived from population and vehicle use trends, and land use plans developed by the cities and the County of San Diego as part of their general plans. A project that proposes development consistent with the growth anticipated in a general plan would be consistent with the RAQS and *2020 Plan for Attaining the National Ozone Standards*. Projects that propose development that is greater than the population growth projections and land use intensity of the adopted local general plan warrants further analysis to determine consistency with the RAQS and the SIP.

As evaluated above, the Project would not exceed the short-term construction standards or long-term operational standards (see Tables 2-5 and 2-6) and in so doing would not violate any air quality standards. Therefore, the Project would not contribute to new violations, or delay the timely attainment of air quality standards or interim reductions as contained in the RAQS. Thus, the Project would be consistent with the first criterion. Further, the Project proposal is consistent with the growth anticipated in the National City General Plan and therefore consistent with the second criterion. Therefore, the Project would not conflict with or obstruct implementation of the applicable air quality plan.

Consistency with Portside CERP

The CERP has various strategies to ensure the health, safety, and environmental justice of the Portside community, which surrounds the Project site. Several of the goals established by the CERP include reducing emissions and the health risks from the operations of commercial and industrial land uses within the community. The majority of the action items associated with the strategies within the CERP direct agencies such as SANDAG, SDAPCD, and local cities to develop and implement the outlined strategies. One of the categories that the CERP addresses is Heavy Duty Truck Strategies, which aims to reduce emissions from diesel trucks in the community. As noted in the Heavy Duty Truck Strategies, the USEPA and CARB have several upcoming actions that would reduce truck emissions statewide. These state and federal agencies will continue to make progress on the goals to reduce truck emissions. Within the CERP's strategies, Action E3 encourages the enforcement of the Truck Route. National City has an established Truck Route Map, indicating the main routes that trucks are permitted on. According to the Traffic Study prepared for the Proposed Project, approximately 97 percent of the truck distribution would head directly towards Interstate 5 (I-5) (KOA 2024). The remaining 3 percent of the truck trip distribution would head east on 18th Street.

These trucks would be expected to travel on the nearest primary truck route or alternate truck route in the necessary direction. As previously mentioned, the acceptable routes of which the trucks must travel are established in the National City Truck Route Map. The CERP establishes the City of National City as the enforcement officer of these truck routes within the City's limits. As such, the Proposed Project's trucking trips will be subject to the enforcement actions that the City may provide, including the requirement that Project trucks travel on the National City Truck Route exclusively.

Furthermore, the Proposed Project proposes to transload renewable fuels and SAF (non-petroleum-based) directly from rail cars into trucks for local deliveries. Renewable Diesel and SAF are able to fully replace petroleum-based fuels with zero modification to storage facilities or combustion engine systems. Biodiesel is a renewable, biodegradable that is often used as a blend with renewable diesel. This blend can be used to replace petroleum diesel with no changes or adverse effects to the engine. Furthermore, according to calculations completed by US Compliance, the Proposed Project's distribution of renewable diesel in the San Diego Area would result in reductions in local air pollutants from the replacement and combustion of regular diesel with renewable diesel. More specifically, the calculations showed meaningful local reductions in NOx, CO, and PM air pollutants from the introduction of renewable diesel from the Proposed Project, as shown in Table 2-7.

Table 2-7. Potential Emissions Reductions from Replacing Conventional Diesel Fuel with Renewable Diesel Fuel

Gallons per Day of Fuel Combustion	Criteria Air Pollutants (pounds per day)		
	Nitrogen Oxides	Carbon Monoxide	Particulate Matter
100 Gallons Replaced Daily	-4.3 lbs	-2.9 lbs	-0.1 lbs
200 Gallons Replaced Daily	-8.7 lbs	-5.7 lbs	-0.1 lbs
300 Gallons Replaced Daily	-13.0 lbs	-8.6 lbs	-0.2 lbs
400 Gallons Replaced Daily	-17.4 lbs	-11.4 lbs	-0.3 lbs
500 Gallons Replaced Daily	-21.7 lbs	-14.3 lbs	-0.4 lbs
600 Gallons Replaced Daily	-26.1 lbs	-17.1 lbs	-0.4 lbs
700 Gallons Replaced Daily	-30.4 lbs	-20.0 lbs	-0.5 lbs
800 Gallons Replaced Daily	-34.8 lbs	-22.8 lbs	-0.6 lbs
900 Gallons Replaced Daily	-39.1 lbs	-25.7 lbs	-0.7 lbs
1,000 Gallons Replaced Daily	-43.5 lbs	-28.5 lbs	-0.7 lbs

Source: US Compliance 2023. Calculations details can be provided upon request.

As identified in Table 2-7, for every 1,000 gallons of conventional diesel replaced with renewable diesel, combustion emissions of NOx, CO, and PM would be reduced by 43.5, 28.5, and 0.7 pounds, respectively. Additionally, a white paper published by the International Council on Clean Transportation (ICCT) on the air quality impacts of biodiesel found that biodiesel combustion results in lower emissions of PM, CO, and hydrocarbons (ICCT 2021). Furthermore, the amended Off-Road Regulation, which as previously described requires the use of R99 or R100 renewable diesel in off-road diesel vehicles, will reduce harmful air pollutants from over 150,000 in-use off-road diesel vehicles that operate in California and is expected to yield $5.7 billion in health benefits, prevent more than 570 air-quality related deaths and nearly 200 hospitalizations and emergency room visits from 2023 to 2038 (CARB 2022b). From 2024 through 2038, the current amendments will generate an additional reduction above and beyond the current regulation of approximately 31,087 tons of NOx and 2,717 tons of $PM_{2.5}$ (CARB 2022b). This confirms that the Proposed Project's distribution of renewable and biodiesel to the surrounding area may have a positive impact on local air quality. As such, the Proposed Project would not conflict with the CERP's goals to reduce diesel PM, would not impede progress towards the goals of establishing zero emission vehicle trucks within the Portside Community, and as described below, would not result in a substantial health risk.

The Project would not conflict with or obstruct implementation of the applicable air quality plan.

2.3.3.4 Exposure of Sensitive Receptors to Toxic Air Contaminants

As previously described, sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive land use to the Project Site is the McKinley Apartment complex located around 380 feet east of the Project.

Health Risk Assessment

A HRA was performed to determine the health risk associated with operations of the Proposed Project. The HRA analyzed cancer and chronic non-cancer risk calculated for 70-, 30- and 25-year exposure scenarios for operational emissions. Per OEHHA guidance, the 25-year scenario was used to model the health risk for workers at business locations and the 70- and 30-scenarios were used for residents in residential areas.

Operational Toxic Air Contaminant Emission Sources

Operational emissions sources include onsite and offsite trucks and rail traffic. Emissions from mainline and switching locomotives were quantified for a half mile buffer around the Project Site. Thirty minutes per day is used as a "worst case" estimate for local switching activities. The 10 mile an hour speed limitation, latest BNSF locomotive engine distribution and ton mile for a 0.95-mile section of the San Diego track were used to quantify mainline emissions.

In addition, small amounts of TACs emitted from residual fossil fuels in transfer equipment and "worst case" gasoline contents in the ethanol transferred were included. It should be noted that the trucks picking up fuel must either show proof that their last fuel load was the same (bio or renewable diesel) or have had a certified washout since their last fuel load. These emissions include benzene, xylene, and ethylbenzene. However, these emissions are well under their reportable levels. The VOC emissions from additives are less than a pound per year. Therefore, the effects of these TACs are considered negligible and they are not analyzed in this assessment.

Construction Toxic Air Contaminant Emission Sources

All onsite and offsite diesel truck traffic related emissions were generated using EMFAC2021 for construction beginning in the year 2024 and conservatively utilized throughout the proposed period of construction. As previously described, CARB has recently approved amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation) aimed at further reducing emissions from the off-road sector. The amendments require the use of R99 or R100 renewable diesel in off-road diesel vehicles. According to CARB (2022b), the amended rule will generate an additional reduction above and beyond the current regulation of approximately 31,087 tons of NOx and 2,717 tons of $PM_{2.5}$ (CARB 2022b). About half of those additional reductions are expected to be realized within the first five years of implementation (CARB 2022b). Construction emissions modeling for the Proposed Project does not account for the use of renewable diesel. Construction off-road equipment for onsite activities was modeled as 111 line-volume sources placed along the permitter of the Project Site totaling 0.82 mile. Construction on-road equipment for offsite activities was modeled as 55 line-volume sources traversing the entrance of the Project Site, onto 18th Street, then heading north onto Cleveland Avenue before heading east on Civic Center Drive where access to Interstate 5 is available. Roadway sources all have a width of 3.7 meters using standard line sizing and an estimated one lane. Annual off-road PM_{10} exhaust emissions generated using the CalEEMod model were used to represent emissions from onsite off-road diesel equipment used throughout construction. The annual emissions for all aspects of construction were used to conservatively estimate annual construction emissions for the estimated Project construction duration of eight months. Detailed calculations for construction emissions can be found in Attachment B of this document.

Dispersion Modeling

The air dispersion modeling for the HRA was performed using the USEPA AERMOD Version 21112 dispersion model. AERMOD is a steady-state, multiple-source, Gaussian dispersion model designed for use with emission sources situated in terrain where ground elevations can exceed the stack heights of the emission sources. The USGS_NED_13_n33w118 file found at U.S. Geological Survey (USGS) was used for elevation data for all sources and receptors in the Project domain. All regulatory defaults were used for dispersion modeling.

AERMOD requires hourly meteorological data consisting of wind vector, wind speed, temperature, stability class, and mixing height. Pre-processed meteorological data files provided by SDAPCD using USEPA's AERMET program, designed to create AERMOD input files for the Perkins Elementary School monitoring station, were selected as being the most representative meteorology based on proximity. The location of the monitoring station in respect to the Project Site is presented in Attachment B to this document. The unit emission rate of one gram per second was utilized in AERMOD to create plot files containing the dispersion factor (X/Q) for each source group. Emissions for each source group as described above were input into HARP2 to calculate the ground level concentrations (GLC) related to Project operations. AERMOD summary files, calculations and figures can be found in Attachment B.

A uniform grid was placed over the Project Area with a spacing of 50 meters encompassing a 2- x 2-kilometer grid and including receptors.

Risk during operations was also modeled utilizing worker factors and residential factors to find the Maximumly Exposed Individual Resident (MEIR) and Maximumly Exposed Individual Worker (MEIW). The chronic and carcinogenic health risk calculations are based on the standardized equations contained in the *OEHHA Guidance Manual* (2015) as implemented in CARB's HARP2 program (CAPCOA 2022). The risk associated with traffic emissions related to Project operations was assessed as risk associated with future Project operations.

Based on the OEHHA methodology, the residential inhalation cancer risk from the annual average TAC concentrations is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor (ASF), the frequency of time spent at home, and the exposure duration divided by averaging time, to yield the excess cancer risk. These factors are discussed in more detail below. Cancer risk must be separately calculated for specified age groups, because of age differences in sensitivity to carcinogens and age differences in intake rates (per kilogram [kg] body weight). Separate risk estimates for these age groups provide a health-protective estimate of cancer risk by accounting for greater susceptibility in early life, including both age-related sensitivity and amount of exposure.

Exposure through inhalation (Dose-air) is a function of the breathing rate, the exposure frequency, and the concentration of a substance in the air. For residential exposure, the breathing rates are determined for specific age groups, so Dose-air is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. To estimate cancer risk, the dose was estimated by applying the following formula to each ground-level concentration:

$$\textbf{Dose-air} = (C_{air} * \{BR/BW\} * A * EF * 10^{-6})$$

Where:

Dose-air	=	dose through inhalation (mg/kg/day)
C_{air}	=	air concentration (µg/m^3) from air dispersion model
{BR/BW}	=	daily breathing rate normalized to body weight (L/kg body weight – day) (361 L\kg BW-day for 3rd Trimester, 1,090 L/kg BW-day for 0<2 years, 861 L/kg BW-day for 2<9 years, 745 L/kg BW-day for 2<16 years, 335 L/kg BW-day for 16<30 years, and 290 L/kg BW-day 16<70 years)
A	=	Inhalation absorption factor (unitless [1])
EF	=	exposure frequency (unitless), days/365 days (0.96 [approximately 350 days per year])
10^{-6}	=	conversion factor (micrograms to milligrams, liters to cubic meters)

OEHHA developed ASFs to consider the increased sensitivity to carcinogens during early-in-life exposure. In the absence of chemical-specific data, OEHHA recommends a default ASF of 10 for the third trimester to age 2 years, an ASF of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood and an ASF of 1 for ages 16 through 70 years.

Fraction of time at home (FAH) during the day is used to adjust exposure duration and cancer risk from a specific facility's emissions, based on the assumption that exposure to the facility's emissions are not occurring away from home. OEHHA recommends the following FAH values: from the third trimester to age

<2 years, 85 percent of time is spent at home; from age 2 through <16 years, 72 percent of time is spent at home; from age 16 years and greater, 73 percent of time is spent at home.

To estimate the cancer risk, the dose is multiplied by the cancer potency factor, the ASF, the exposure duration divided by averaging time, and the frequency of time spent at home (for residents only):

$$\text{Riskinh-res} = (\text{Dose}_{air} * \text{CPH} * \text{ASF} * \text{ED/AT} * \text{FAH})$$

Where:

$\text{Risk}_{inh\text{-}res}$	=	residential inhalation cancer risk (potential chances per million)
Dose_{air}	=	daily dose through inhalation (mg/kg-day)
CPF	=	inhalation cancer potency factor (mg/kg-day^{-1})
ASF	=	age sensitivity factor for a specified age group (unitless)
ED	=	exposure duration (in years) for a specified age group (0.25 years for 3rd trimester, 2 years for 0<2, 7 years for 2<9, 14 years for 2<16, 14 years for 16<30, 54 years for 16-70)
AT	=	averaging time of lifetime cancer risk (years)
FAH	=	fraction of time spent at home (unitless)

Non-cancer chronic impacts are calculated by dividing the annual average concentration by the Reference Exposure Level (REL) for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The following equation was used to determine the non-cancer risk:

$$\text{Hazard Quotient} = \text{Ci/RELi}$$

Where:

Ci	=	Concentration in the air of substance i (annual average concentration in $\mu g/m^3$)
RELi	=	Chronic noncancer Reference Exposure Level for substance i ($\mu g/m^3$)

Cancer Risk

Operational cancer risk calculations for existing residential receptors are based on 70- and 30-year exposure periods and worker receptors are based on a 25-year exposure period to for workers. The calculated cancer risk accounts for 350 days per year of exposure to residential receptors. While the average American spends 87 percent of their life indoors (USEPA 2001), neither the pollutant dispersion modeling nor the health risk calculations account for the reduced exposure structures provide. Instead, health risk calculations account for the equivalent exposure of continual outdoor living. The calculated carcinogenic risk at Project vicinity receptors is depicted in Table 2-8.

Table 2-8. Maximum Cancer Risk Summary

Maximum Exposure Scenario	Total Maximum Risk
Project Operations	
70-Year Exposure Resident	8.92
30-Year Exposure Resident	7.56
25-Year Exposure Worker	1.02
Project Construction	
1-Year Exposure Resident	0.05
1-Year Exposure Worker	0.13
Significance Threshold	*10*
Exceed Threshold?	**No**

Source: ECORP Consulting 2023. See Attachment B.

As shown, neither Project operations nor Project construction would result in a significant contribution to cancer risk in the community. These calculations do not account for any pollutant-reducing remedial components inherent to the Project or the Project Site.

The MEIR is located at the southwest corner of the McKinley Apartments on McKinley Avenue while the MEIW is located at the boat facility directly to the east of the Project Site. The offsite Point of Maximum Impact is located on West 18th Street directly to the east of the Project Site. All of the above listed points are presented in Attachment B of this document.

Non-Carcinogenic Hazards

In addition to cancer risk, the significance thresholds for TAC exposure require an evaluation of non-cancer risk stated in terms of a hazard index. Non-cancer chronic impacts are calculated by dividing the annual average concentration by the REL for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The potential for acute non-cancer hazards is evaluated by comparing the maximum short-term exposure level to an acute REL. RELs are designed to protect sensitive individuals within the population. The calculation of acute non-cancer impacts is like the procedure for chronic non-cancer impacts. Acute impacts would not result from the fuel transfer operations as there is currently no acute hazard index for DPM.

An acute or chronic hazard index of 1.0 is considered individually significant. The hazard index is calculated by dividing the acute or chronic exposure by the REL. The highest maximum chronic hazard and acute hazard indexes for residents and workers in the Proposed Project vicinity as a result of operations emission exposure is shown in Table 2-9.

Table 2-9. Maximum Non-Carcinogenic Hazard Index Health Risk Summary			
Chronic Health Hazard Index			
Exposure Scenario	**Maximum (70 yr.) Residential Hazard**	**Maximum (30 yr.) Residential Hazard**	**Maximum (25 yr.) Worker Hazard**
Operation	0.003	0.003	0.0005
Construction	0.0001	0.0001	0.0000
Significance Threshold	*1*	*1*	*1*
Exceed Threshold?	**No**	**No**	**No**
Acute Health Hazard Index			
Exposure Scenario	**Maximum Residential Hazard**	**Maximum Worker Hazard**	**Maximum School Hazard**
Operation	0.0001	0.0006	--
Construction	0.0000	0.0000	--
Significance Threshold	*1*	*1*	*1*
Exceed Threshold?	**No**	**No**	**No**

Source: ECORP Consulting 2022. See Attachment B.

As shown in Table 2-9, impacts related to non-cancer risk (chronic and acute hazard index) because of the Project are less than significant.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or *hot spots*, are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SDAB is designated as attainment. Detailed modeling of Project-specific CO *hot spots* is not necessary and thus this potential impact is addressed qualitatively.

A CO *hot spot* would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. The analysis prepared for CO attainment in the South

Coast Air Quality Management District's (SCAQMD) *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD conducted a CO *hot spot* analysis as part of the 1992 CO Federal Attainment Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). In order to establish a more accurate record of baseline CO concentrations affecting the South Coast Air Basin, a CO *hot spot* analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This *hot spot* analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Current CO concentrations in the South Coast Air Basin are much lower than the measurements mentioned in this example and SDAB CO measurements are lower than the SoCAB.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District, the air pollution control officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

According to the Project's throughput amounts and capacity of the delivery trucks, the Proposed Project would generate no more than 169 automobile trips daily and would therefore not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day) and there is no likelihood of the Project traffic exceeding CO values.

2.3.3.5 Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory, and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word *strong* to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During construction, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the construction area. Therefore, construction odors would not adversely affect a substantial number of people to odor emissions.

According to the CARB Air Quality and Land Use Handbook: A Community Health Perspective (CARB 2005), the sources of the most common operational odor complaints received by local air districts include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. The Project does not contain any of the land uses identified as typically associated with emissions of objectionable odors.

3.0 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. More specifically, experts agree that human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020. (Intergovernmental Panel on Climate Change [IPCC] 2023).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Despite the sequestration of CO_2, human-caused climate change is already causing damaging effects, including weather and climate extremes in every region across the globe (IPCC 2023).

Table 3-1. Summary of Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about 12 years.[2]
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: (1) USEPA 2023a; (2) USEPA 2023b; (3) USEPA 2023c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.1.1 Sources of Greenhouse Gas Emissions

In 2023, CARB released the 2023 edition of the California GHG inventory covering calendar year 2021 emissions. In 2021, California emitted 381.3 million gross metric tons of CO_2e including from imported electricity. This inventory is 3.4 percent higher than the State's 2020 inventory, but 5.7 percent lower than 2019 level, which aligns with the global changes, shutdowns, and economic recoveries affected by the COVID-19 pandemic. Additionally, between 2020 and 2021, California's Gross Domestic Product (GDP) increased 7.8 percent while the GHG intensity of California's economy (GHG emissions per unit GDP) decreased 4.1 percent. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2021, accounting for approximately 38.2 percent of total GHG emissions in the state. Transportation emissions have increased 7.4 percent compared to 2020, which is most likely from light duty vehicle emissions that rebounded when COVID-19 shelter-in-place orders were lifted. Emissions from the electricity sector account for 16.4 percent of the inventory, which is an increase of 4.8 percent since 2020, despite the growth of in-state solar and imported renewable energy. California's industrial sector accounts for the second largest source of the state's GHG emissions in 2021, accounting for 19.4 percent, which saw an increase of nearly 1 percent since 2020 (CARB 2023b).

3.2 Regulatory Framework

3.2.1 State

3.2.1.1 Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

3.2.1.2 Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2022 Scoping Plan Update, outlines strategies and actions to reduce greenhouse gas emissions in California. The plan focuses on achieving the state's goal of reaching carbon neutrality by 2045 and reducing greenhouse gas emissions to 40 percent below 1990 levels by 2030. The plan includes a range of strategies across various sectors, including transportation, industry, energy, and agriculture. Some of the key strategies include transitioning to zero-emission vehicles, expanding renewable energy sources, promoting sustainable land use practices, implementing a low-carbon fuel standard, and reducing emissions from buildings. Additionally, the plan addresses equity and environmental justice by prioritizing investments in communities most impacted by pollution and climate change. The plan also aims to promote economic growth and job creation through the transition to a low-carbon economy.

3.2.1.3 Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Edmund "Jerry" Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030.

3.2.1.4 Senate Bill X1-2 of 2011, Senate Bill 350 of 2015, and Senate Bill 100 of 2018

In 2018, SB 100 was signed codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard

3.2.1.5 2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings

The Building and Efficiency Standards (Energy Standards) were first adopted and put into effect in 1978 and have been updated periodically in the intervening years. These standards are a unique California asset that have placed the State on the forefront of energy efficiency, sustainability, energy independence and climate change issues. The 2022 California Building Codes include provisions related to energy efficiency to reduce energy consumption and greenhouse gas emissions from buildings. Some of the key energy efficiency components of the codes are:

1. Energy Performance Requirements: The codes specify minimum energy performance standards for the building envelope, lighting, heating and cooling systems, and other components.
2. Lighting Efficiency: The codes require that lighting systems meet minimum efficiency standards, such as the use of energy-efficient light bulbs and fixtures.
3. HVAC Systems: The codes establish requirements for heating, ventilation, and air conditioning (HVAC) systems, including the use of high-efficiency equipment, duct sealing, and controls.
4. Building Envelope: The codes include provisions for insulation, air sealing, glazing, and other building envelope components to reduce energy loss and improve indoor comfort.
5. Renewable Energy: The codes encourage the use of renewable energy systems, such as photovoltaic panels and wind turbines, to reduce dependence on non-renewable energy sources.
6. Commissioning: The codes require the commissioning of building energy systems to ensure that they are installed and operate correctly and efficiently.

Overall, the energy efficiency provisions of the 2022 California Building Codes aim to reduce the energy consumption of buildings, lower energy costs for building owners and occupants, and reduce the environmental impact of the built environment. The 2022 Building Energy Efficiency Standards improve upon the 2019 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The exact amount by which the 2022 Building Codes are more efficient compared to the 2019 Building Codes would depend on the specific provisions that have been updated and the specific building being considered. However, in general, the 2022 Building Codes have been updated to include increased requirements for energy efficiency, such as higher insulation and air sealing standards, which are intended to result in more efficient buildings. The 2022 standards are a major step toward meeting Zero Net Energy.

3.2.2 Local

3.2.2.1 National City General Plan

National City adopted the General Plan in 2011. The Land Use and Community Character Planning Element of the General Plan contains statistics regarding existing and planned land uses. The Community Planning Element serves as the foundational guiding document regarding baseline conditions for the Climate Action Plan (CAP).

The CAP acts to support implementation of the General Plan through support for continued incremental changes to the urban land use form, providing greater transportation choices, and transforming the way energy is used and produced. Further, the CAP complements the General Plan policies to reduce GHG emissions with quantified benchmarks for success.

The Conservation and Sustainability Element of the General Plan includes goals related to reducing GHG emissions with a focus on the two largest emission sources: the built environment and vehicles. The Conservation and Sustainability Element contains numerous strategies the City aims to use to promote sustainability and conservation.

3.2.2.2 National City Climate Action Plan

The City prepared its first CAP in 2011 to address climate change at a local level. As part of the CAP, the City implemented emissions targets up until 2020. Per subsequent emissions inventories, the City has achieved the 2020 target. In 2023, the City established a CAP Update to address GHG emissions on a local level to help achieve the State's GHG emission reduction goals. The CAP Update has set targets for the City to reduce 2018 baseline conditions 40 percent by 2030 and 80 percent by 2050 to align its reductions with Statewide targets. These reduction targets equate to 310,959 metric tons of CO_2e by 2030 (4.5 metric tons of CO_2e per capita) and 103,653 metric tons (1.21 metric tons of CO_2e per capita) by 2050. The CAP Update has several strategies that it plans to employ to reduce community-wide GHG emissions, including from transportation, commercial and industrial land uses, residential land uses, solid waste, and water and wastewater.

3.2.3 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to GHG emissions if it would:

1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

2) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The Appendix G thresholds for GHG emissions do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 California Code of Regulations [CCR] 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently consider the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130). As a note, the CEQA Guidelines were amended in response to Senate Bill 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines § 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations, and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The SDAPCD does not identify any numeric GHG significance thresholds. As previously described, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). Thus, in the absence of any numeric GHG emissions significance thresholds, the Project is also evaluated for consistency with the City's CAP.

In addition to a comparison of Project consistency with the City CAP, Project GHG emissions are compared to the GHG thresholds recommended by the South Coast Air Quality Management District (SCAQMD), the air pollution control officer for the South Coast Air Basin. The SCAQMD threshold of 3,000 metric tons of CO_2e annually is considered appropriate for the purposes of this analysis due to the proximities of the South Coast Air Basin and the SDAB. The 3,000 metric tons of CO_2e per year threshold represents a 90 percent capture rate (i.e., this threshold captures projects that represent approximately 90 percent of GHG emissions from new sources). The 3,000 metric tons of CO_2e per year value is typically used in defining small projects that are considered less than significant because it represents less than one percent of future 2050 statewide GHG emissions target and the lead agency can provide more efficient implementation of CEQA by focusing its scarce resources on the top 90 percent. Land use projects above the 3,000 metric tons of CO_2e per year level would fall within the percentage of largest projects that are worth mitigating without wasting scarce financial, governmental, physical, and social resources. In Center for Biological Diversity v. Department of Fish and Wildlife (2015) 62 Cal. 4th 2014, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, Public Resources Code section 21003(f) provides it is a policy of the state that "[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient, expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227.)

3.3 Methodology

GHG-related impacts were assessed in accordance with methodologies recommended in the City's CAP. While GHG emission quantification is not required by the City, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2022.1 for disclosure purposes. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction generated GHG emissions were primarily calculated using CalEEMod model defaults for San Diego County and information provided by the Project proponent, such as the site acreage. Operational air pollutant emissions were calculated based on specific Project Site plans, the Project's daily throughput, truck tanker capacity, and trip distances. In addition, mainline rail emissions were calculated with the BNSF references, and operational emissions were calculated with CARB Vision Access Database emission factors (see Attachment A). Based on the Project's fuel throughput, delivery truck capacity, and other retailer location data from US Compliance, the average mileage of 12.32 per one way trip was calculated and accounted for in the modeling calculations. In addition, the fleet mix was adjusted to reflect 69 heavy-duty trucks making both an inbound trip and outbound trip daily for a total of 138 daily heavy-duty truck trips and 42 passenger automobile trips associated with the onsite workers.

3.3.1 Impact Analysis

3.3.1.1 Conflict with any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

As previously described, the City prepared a CAP Update in 2023 to establish new GHG reduction goals and to align with new California regulations and targets to address climate change. The CAP is a strategic planning document that identifies sources of GHG emissions within the City, presents current and future emission estimates, identifies a GHG reduction target for future years, and presents policy provisions to reduce emissions. As part of the CAP Update, the City implemented an emissions target of reducing 2018 baseline conditions 40 percent by 2030 and 80 percent by 2050.

The CAP Update has several required policies and actions that would apply to the Proposed Project's construction and operations. The Proposed Project would need to incorporate all applicable actions to demonstrate consistency with this climate planning document. These measures will be enforced as conditions of approval for ensuring that compliance can be confirmed before the Project can be implemented. Therefore, the following actions have been identified that apply to the Proposed Project:

- **TLU-2.1** Encourage all new residential, governmental, and commercial buildings to be electric vehicle ready (i.e. charging stations, preferred parking, etc.).
- **TLU-2.6** Encourage the reduction of idling times for commercial vehicles and construction equipment.
- **RCB-2.1** Encourage private development projects to exceed the energy efficiency requirements of CalGreen by providing technical assistance, financial assistance and other incentives.

- **RCB-2.2** Encourage LEED certification for all new commercial and industrial buildings.
- **RE-1.2** Encourage restricting new natural gas lines in buildings.

As noted above, the Proposed Project would need to incorporate all applicable CAP Update actions to demonstrate consistency with the City's climate action planning efforts. The Project proponent has noted that there will be no natural gas used as a part of the Project's operations, consistent with Action RE-1.2. Additionally, the Project is not proposing a new commercial or industrial building. Mitigation Measure GHG-1 ensures compatibility and consistency with the rest of the applicable GHG reduction plans, policies, and regulations.

GHG-1: Adhere to National City's Climate Action Planning Reduction Measures

The Project shall implement the following applicable greenhouse gas-reducing measures, consistent with National City Climate Action Plan Update:

- Ensure the employee parking lot is electric vehicle ready (i.e. charging stations, preferred parking, etc.).
- Encourage the reduction of idling times for all employee and tanker truck vehicles, as well as construction equipment.
- Ensure the requirements The California Green Building Standards Code—Part 11, Title 24, California Code of Regulations (CalGreen) are met.

Timing/Implementation: *Prior to the issuance of occupancy permits*

Monitoring/Enforcement: *The National City Planning Division*

Implementation of Mitigation Measure GHG-1 ensures compatibility and consistency with the City's climate action planning goals.

Furthermore, the GHG reduction strategies in the CAP Update build upon the City's previous CAP and updated emission inventory. Both the existing and the projected GHG inventories in the CAP were derived based on the land use designations defined in the City General Plan. The Proposed Project is consistent with the land use designation and development density presented in the General Plan. The Project is not proposing to amend the City General Plan and is consistent with all land use designations applied to the Site. Since the Project is consistent with the General Plan's land use designation map, it is consistent with the types, intensity, and patterns of land use envisioned for the site vicinity in the General Plan, and therefore aligns with the land use assumptions used in the CAP Update.

It is further noted that the Project proposes to transload renewable fuels and SAF (non-petroleum-based) directly from rail cars into trucks for local deliveries. Renewable Diesel and SAF can be produced with new or recycled vegetable oils, animal fats, greases, algae, crop residues or woody biomass. Renewable Diesel and SAF are also designated as a *drop-in* biofuel allowing them to fully replace petroleum-based fuels with zero modification to storage facilities or combustion engine systems. When used in diesel engines, renewable diesel can reduce GHG emissions by up to 70 percent compared to traditional diesel fuels when accounting for the complete life cycle of renewable diesel. Biodiesel is a renewable, biodegradable fuel manufactured domestically from vegetable oils, animal fats, or recycled restaurant grease. Biodiesel is often used as a blend with renewable diesel. Renewable diesel and a blend of biodiesel reduce GHG emissions compared with traditional diesel fuel and can be used to replace petroleum diesel with no changes or adverse effects to the engine. Project delivery trucks would be loaded with either renewable diesel fuel, ethanol or SAF. The fuel would then be distributed to the greater San Diego area via these truck to local retailers, promoting the goals set out by SB 32 and the latest CARB Scoping Plan (2022), which addresses ways for California to reach carbon neutrality by 2045 and reducing GHG emissions to 40 percent below 1990 levels by 2030. Effort to develop Projects like this one reduce reliance on fossil fuels, reduce and reuse waste streams, and reduces GHG emissions. Additionally, the production and use of biofuels advances the goal of California's Low-Carbon Fuels Standard, another component of the AB 32 Scoping Plan. Furthermore, with the ability to utilize a wide variety of resources to produce renewable diesel, biodiesel and SAS, these biofuels are considered 100 percent sustainable. These characteristics make these fuels environmentally, socially, and in long-term respects, economically preferable to petroleum-based fuels. Given these facts, once the proposed facility is completed, the National City would be considered a *Clean Fuels* hub for the greater San Diego Area.

3.3.1.2 Project Generated Greenhous Gas Emissions

Construction

Construction-related activities that would generate GHG emissions include on- and off-road equipment traffic. Table 3-2 illustrates the specific construction generated GHG emissions that would result from construction of the Project. Once construction is complete, the generation of these GHG emissions would cease.

Table 3-2. Construction Related Greenhouse Gas Emissions

Description	CO_2e Emissions (Metric Tons/Year)
Project Construction	282
Total Construction Emissions	**282**
Significance Threshold	*3,000*
Exceed Threshold?	**No**

Sources: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs

As shown in Table 3-2, Project construction would result in the generation of approximately 282 metric tons of CO_2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease.

Operations

Operation of the Project would result in GHG emissions predominantly associated with motor vehicle use. Long-term operational GHG emissions attributable to the Project are identified in Table 3-3. Emissions resulting from mainline train locomotive emissions are also included.

Table 3-3. Operational Related Greenhouse Gas Emissions	
Description	**CO_2e Emissions (Metric Tons/Year)**
Mobile	1,038
Area	<1
Energy	1
Water	<1
Waste	<1
Mainline Rail	486
Project Operations Total	**1,525**
Significance Threshold	*3,000*
Exceed Threshold?	**No**

Sources: CalEEMod version 2022.1. Emission projections are predominantly based on CalEEMod model defaults for San Diego County. Average daily vehicle trips provided by KOA (2022). Mainline rail emissions were calculated using the BNSF ton-mile per gallon, Project throughput, BNSF engine inventory and CARB Vision Access Database emission factors in grams per gallon diesel. See Attachment A for modeling assumptions.

As shown in Table 3-3, operational-generated emissions would total to approximately 1,525 metric tons of CO_2e, which would not exceed the numeric bright-line threshold of 3,000 metric tons of CO_2e annually. This significance threshold was developed based on substantial evidence that such thresholds represent quantitative levels of GHG emissions, compliance with which means that the environmental impact of the GHG emissions will normally not be cumulatively considerable under CEQA. The 3,000 metric tons of CO_2e per year value represents less than one percent of future 2050 statewide GHG emissions target.

4.0 REFERENCES

Burlington Northern Santa Fe (BNSF). 2020. Financial Information. https://www.bnsf.com/about-bnsf/financial-information/

California Air Pollution Control Offices Association (CAPCOA). 2022. HARP Air Dispersion Modeling and Risk Tool 22118. https://ww2.arb.ca.gov/resources/documents/harp-air-dispersion-modeling-and-risk-tool

_____. 2022. California Emissions Estimator Model (CalEEMod), version 2022.1.

_____. 2013. Health Effects. https://www.icpds.com/assets/California-Air-Pollution-Control-Officers-Association-2021-1642792251.pdf

California Air Resources Board (CARB). 2023a. Air Quality Data Statistics. http://www.arb.ca.gov/adam/index.html.

_____. 2023b. California Greenhouse Gas Emission Inventory 2023 Edition. https://ww2.arb.ca.gov/ghg-inventory-data

_____. 2022a. State and Federal Area Designation Maps. http://www.arb.ca.gov/desig/adm/adm.htm.

_____. 2022b. Website: In-Use Off-Road Diesel-Fueled Fleets Regulation. https://ww2.arb.ca.gov/our-work/programs/use-road-diesel-fueled-fleets-regulation.

_____. 2016. Vision 2.1 Locomotives Module. https://ww2.arb.ca.gov/resources/documents/vision-scenario-planning

_____. 2008. Climate Change Scoping Plan Appendices (Appendix F).

_____. 2005. CARB Air Quality and Land Use Handbook: A Community Health Perspective. http://www.aqmd.gov/docs/default-source/ceqa/handbook/california-air-resources-board-air-quality-and-land-use-handbook-a-community-health-perspective.pdf

Crockett, Alexander G. 2011. Addressing the Significance of Greenhouse Gas Emissions Under CEQA: California's Search for Regulatory Certainty in an Uncertain World.

ENVIRON International Corporation. 2008. Health Risk Assessment for the BNSF Railway San Diego Railyard. https://ww2.arb.ca.gov/sites/default/files/classic/railyard/hra/bnsf_sd_final.pdf

KOA. 2022. Transload Facility 18th Street and Cleveland Ave Traffic Study.

IPCC (Intergovernmental Panel on Climate Change). 2023. Climate Change 2023 Synthesis Report – Summary for Policymakers. https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf OEHHA. 2015. Guidance Manual for Preparation of Health Risk Assessments.

International Council on Clean Transportation. 2021. Air Quality Impacts of Biodiesel in the United States. https://theicct.org/publication/air-quality-impacts-of-biodiesel-in-the-united-states/

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Guidance Manual for Preparation of Health Risk Assessments.

National City. 2011. City of National City General Plan.

_____. 2023. City of National City 2022 Climate Action Plan Update.

San Diego County. 2007. Guidelines for Determining Significance and Report Content Requirements.

San Diego Air Pollution Control District. 2021. Portside Community Emissions Reductions Plan. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.sdapcd.org/content/dam/sdapcd/documents/capp/cerp/Portside-Environmental-Justice-CERP-July-2021.pdf

South Coast Air Quality Management District (SCAQMD). 2003. 2003 Air Quality Management Plan.

_____. 1992. 1992 Federal Attainment Plan for Carbon Monoxide.

USEPA. 2023a. Climate Change – Greenhouse Gas Emissions: Carbon Dioxide, http://www.epa.gov/climatechange/emissions/co2.html.

_____. 2023b. Methane, https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html.

_____. 2023c. Nitrous Oxide, https://www3.epa.gov/climatechange/ghgemissions/gases/n2o.html.

_____. 2002. Health Assessment Document for Diesel Engine Exhaust. https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=300055PV.TXT.

_____. 2001. National Human Activity Pattern Survey.

LIST OF ATTACHMENTS

ATTACHMENT A

Criteria Air Pollutants & Greenhouse Gas Emissions CalEEMod Output Files and Operational Permitting Calculations

CALIFORNIA EMISSIONS ESTIMATOR MODEL (CALEEMOD) OUTPUTS

National City Clean Fuels Facility Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	National City Clean Fuels Facility
Construction Start Date	3/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	21.0
Location	830 W 18th St, National City, CA 91950, USA
County	San Diego
City	National City
Air District	San Diego County APCD
Air Basin	San Diego
TAZ	6672
EDFZ	12
Electric Utility	San Diego Gas & Electric
Gas Utility	San Diego Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Unrefrigerated Warehouse-Rail	0.50	1000sqft	0.01	500	0.00	—	—	—
Other Asphalt Surfaces	7.49	Acre	7.49	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.72	36.0	33.8	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,465	5,465	0.22	0.05	0.68	5,486
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.72	36.0	33.7	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,456	5,456	0.22	0.05	0.02	5,476
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.41	10.4	10.7	0.02	0.47	4.46	4.93	0.43	2.24	2.67	—	1,699	1,699	0.07	0.02	0.13	1,706
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.26	1.89	1.95	< 0.005	0.09	0.81	0.90	0.08	0.41	0.49	—	281	281	0.01	< 0.005	0.02	282

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.72	36.0	33.8	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,465	5,465	0.22	0.05	0.68	5,486
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.72	36.0	33.7	0.05	1.60	19.8	21.4	1.47	10.1	11.6	—	5,456	5,456	0.22	0.05	0.02	5,476
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.41	10.4	10.7	0.02	0.47	4.46	4.93	0.43	2.24	2.67	—	1,699	1,699	0.07	0.02	0.13	1,706
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.26	1.89	1.95	< 0.005	0.09	0.81	0.90	0.08	0.41	0.49	—	281	281	0.01	< 0.005	0.02	282

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.30	8.79	4.37	0.06	0.10	1.77	1.87	0.09	0.47	0.57	0.47	6,274	6,274	0.40	0.97	13.8	6,586
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.28	9.12	4.32	0.06	0.10	1.77	1.87	0.09	0.47	0.57	0.47	6,263	6,264	0.40	0.97	0.36	6,563
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.29	9.08	4.30	0.06	0.10	1.75	1.85	0.09	0.47	0.56	0.47	6,263	6,264	0.40	0.97	5.96	6,568

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05	1.66	0.79	0.01	0.02	0.32	0.34	0.02	0.09	0.10	0.08	1,037	1,037	0.07	0.16	0.99	1,087

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.23	8.79	4.35	0.06	0.10	1.77	1.87	0.09	0.47	0.57	—	6,269	6,269	0.35	0.97	13.8	6,580
Area	0.07	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3.52	3.52	< 0.005	< 0.005	—	3.53
Water	—	—	—	—	—	—	—	—	—	—	0.22	1.27	1.49	0.02	< 0.005	—	2.22
Waste	—	—	—	—	—	—	—	—	—	—	0.25	0.00	0.25	0.03	0.00	—	0.89
Total	0.30	8.79	4.37	0.06	0.10	1.77	1.87	0.09	0.47	0.57	0.47	6,274	6,274	0.40	0.97	13.8	6,586
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.22	9.12	4.32	0.06	0.10	1.77	1.87	0.09	0.47	0.57	—	6,259	6,259	0.35	0.97	0.36	6,556
Area	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3.52	3.52	< 0.005	< 0.005	—	3.53
Water	—	—	—	—	—	—	—	—	—	—	0.22	1.27	1.49	0.02	< 0.005	—	2.22
Waste	—	—	—	—	—	—	—	—	—	—	0.25	0.00	0.25	0.03	0.00	—	0.89
Total	0.28	9.12	4.32	0.06	0.10	1.77	1.87	0.09	0.47	0.57	0.47	6,263	6,264	0.40	0.97	0.36	6,563
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.23	9.08	4.29	0.06	0.10	1.75	1.85	0.09	0.47	0.56	—	6,259	6,259	0.35	0.97	5.96	6,562
Area	0.06	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.04	0.04	< 0.005	< 0.005	—	0.04

Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	3.52	3.52	< 0.005	< 0.005	—	3.53
Water	—	—	—	—	—	—	—	—	—	—	0.22	1.27	1.49	0.02	< 0.005	—	2.22
Waste	—	—	—	—	—	—	—	—	—	—	0.25	0.00	0.25	0.03	0.00	—	0.89
Total	0.29	9.08	4.30	0.06	0.10	1.75	1.85	0.09	0.47	0.56	0.47	6,263	6,264	0.40	0.97	5.96	6,568
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	1.66	0.78	0.01	0.02	0.32	0.34	0.02	0.09	0.10	—	1,036	1,036	0.06	0.16	0.99	1,086
Area	0.01	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Energy	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.58	0.58	< 0.005	< 0.005	—	0.58
Water	—	—	—	—	—	—	—	—	—	—	0.04	0.21	0.25	< 0.005	< 0.005	—	0.37
Waste	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.15
Total	0.05	1.66	0.79	0.01	0.02	0.32	0.34	0.02	0.09	0.10	0.08	1,037	1,037	0.07	0.16	0.99	1,087

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.60	5.91	5.41	0.01	0.26	—	0.26	0.24	—	0.24	—	871	871	0.04	0.01	—	874
Dust From Material Movement	—	—	—	—	—	3.23	3.23	—	1.66	1.66	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	1.08	0.99	< 0.005	0.05	—	0.05	0.04	—	0.04	—	144	144	0.01	< 0.005	—	145
Dust From Material Movement	—	—	—	—	—	0.59	0.59	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.86	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	169	169	0.01	0.01	0.68	172

Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.76	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	160	160	0.01	0.01	0.02	162
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	26.5	26.5	< 0.005	< 0.005	0.05	26.9
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.39	4.39	< 0.005	< 0.005	0.01	4.45
Vendor	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
Hauling	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

3.3. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.90	18.2	18.8	0.03	0.84	—	0.84	0.77	—	0.77	—	2,958	2,958	0.12	0.02	—	2,969

Dust From Material Movement	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	3.00	3.09	< 0.005	0.14	—	0.14	0.13	—	0.13	—	486	486	0.02	< 0.005	—	488
Dust From Material Movement	—	—	—	—	—	1.16	1.16	—	0.56	0.56	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.55	0.56	< 0.005	0.03	—	0.03	0.02	—	0.02	—	80.5	80.5	< 0.005	< 0.005	—	80.8
Dust From Material Movement	—	—	—	—	—	0.21	0.21	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.74	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	145	145	0.01	0.01	0.58	147
Vendor	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
Hauling	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	22.7	22.7	< 0.005	< 0.005	0.04	23.1
Vendor	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
Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.76	3.76	< 0.005	< 0.005	0.01	3.82
Vendor	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
Hauling	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

3.5. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	1.28	1.65	< 0.005	0.06	—	0.06	0.06	—	0.06	—	248	248	0.01	< 0.005	—	249
Paving	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.23	0.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	41.1	41.1	< 0.005	< 0.005	—	41.3
Paving	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.74	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	145	145	0.01	0.01	0.58	147
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.65	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	137	137	0.01	0.01	0.02	139
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	22.7	22.7	< 0.005	< 0.005	0.04	23.1
Vendor	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

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.76	3.76	< 0.005	< 0.005	0.01	3.82
Vendor	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
Hauling	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

3.7. Architectural Coating (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.91	1.15	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	1.55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.91	1.15	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	1.55	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.15	0.19	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	21.9	21.9	< 0.005	< 0.005	—	22.0
Architectural Coatings	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.63	3.63	< 0.005	< 0.005	—	3.65
Architectural Coatings	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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

Hauling	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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
Vendor	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
Hauling	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

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	0.05	1.53	0.81	0.01	0.02	0.27	0.29	0.01	0.07	0.09	—	984	984	0.06	0.15	2.12	1,033
Other Asphalt Surfaces	0.18	7.26	3.55	0.05	0.08	1.50	1.58	0.08	0.40	0.48	—	5,285	5,285	0.29	0.81	11.7	5,546
Total	0.23	8.79	4.35	0.06	0.10	1.77	1.87	0.09	0.47	0.57	—	6,269	6,269	0.35	0.97	13.8	6,580
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	0.05	1.59	0.81	0.01	0.02	0.27	0.29	0.01	0.07	0.09	—	983	983	0.06	0.15	0.06	1,030

Other Asphalt Surfaces	0.17	7.53	3.51	0.05	0.08	1.50	1.58	0.08	0.40	0.48	—	5,275	5,275	0.29	0.82	0.30	5,526
Total	0.22	9.12	4.32	0.06	0.10	1.77	1.87	0.09	0.47	0.57	—	6,259	6,259	0.35	0.97	0.36	6,556
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	0.01	0.29	0.15	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	163	163	0.01	0.03	0.15	171
Other Asphalt Surfaces	0.03	1.37	0.64	0.01	0.02	0.27	0.29	0.01	0.07	0.09	—	873	873	0.05	0.13	0.84	916
Total	0.04	1.66	0.78	0.01	0.02	0.32	0.34	0.02	0.09	0.10	—	1,036	1,036	0.06	0.16	0.99	1,086

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	—	—	—	—	—	—	—	—	—	—	—	3.52	3.52	< 0.005	< 0.005	—	3.53
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3.52	3.52	< 0.005	< 0.005	—	3.53
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unrefriger Warehouse-Rail	—	—	—	—	—	—	—	—	—	—	—	3.52	3.52	< 0.005	< 0.005	—	3.53
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3.52	3.52	< 0.005	< 0.005	—	3.53
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	—	—	—	—	—	—	—	—	—	—	—	0.58	0.58	< 0.005	< 0.005	—	0.58
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.58	0.58	< 0.005	< 0.005	—	0.58

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	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
Other Asphalt Surfaces	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unrefrigerated	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
Other Asphalt Surfaces	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	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
Other Asphalt Surfaces	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
Total	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

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09

Total	0.07	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01
Total	0.01	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.01	0.01	< 0.005	< 0.005	—	0.01

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unrefrigerated	—	—	—	—	—	—	—	—	—	—	0.22	1.27	1.49	0.02	< 0.005	—	2.22
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.22	1.27	1.49	0.02	< 0.005	—	2.22
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	—	—	—	—	—	—	—	—	—	—	0.22	1.27	1.49	0.02	< 0.005	—	2.22
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.22	1.27	1.49	0.02	< 0.005	—	2.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	—	—	—	—	—	—	—	—	—	—	0.04	0.21	0.25	< 0.005	< 0.005	—	0.37
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.04	0.21	0.25	< 0.005	< 0.005	—	0.37

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	—	—	—	—	—	—	—	—	—	—	0.25	0.00	0.25	0.03	0.00	—	0.89
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.25	0.00	0.25	0.03	0.00	—	0.89
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	—	—	—	—	—	—	—	—	—	—	0.25	0.00	0.25	0.03	0.00	—	0.89
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.25	0.00	0.25	0.03	0.00	—	0.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unrefrigerated Warehouse-Rail	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.15
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.04	0.00	0.04	< 0.005	0.00	—	0.15

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	3/1/2024	5/23/2024	5.00	60.0	—
Grading	Grading	5/24/2024	8/15/2024	5.00	60.0	—
Paving	Paving	8/16/2024	11/7/2024	5.00	60.0	—
Architectural Coating	Architectural Coating	8/16/2024	11/7/2024	5.00	60.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41

Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	12.0	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.63	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	12.0	LDA,LDT1,LDT2
Grading	Vendor	—	7.63	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	12.0	LDA,LDT1,LDT2
Paving	Vendor	—	7.63	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.00	12.0	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.63	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	750	250	19,576

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	90.0	0.00	—
Grading	—	—	60.0	0.00	—
Paving	0.00	0.00	0.00	0.00	7.49

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Unrefrigerated Warehouse-Rail	0.00	0%
Other Asphalt Surfaces	7.49	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	589	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Unrefrigerated Warehouse-Rail	42.0	42.0	42.0	15,330	309	309	309	112,715
Other Asphalt Surfaces	138	138	138	50,358	1,700	1,700	1,700	620,405

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	750	250	19,576

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Unrefrigerated Warehouse-Rail	2,180	589	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	589	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Unrefrigerated Warehouse-Rail	115,625	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Unrefrigerated Warehouse-Rail	0.47	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.90	annual days of extreme heat
Extreme Precipitation	1.95	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	1.40	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	26.7
AQ-PM	52.4
AQ-DPM	91.0
Drinking Water	33.4
Lead Risk Housing	83.1
Pesticides	0.00
Toxic Releases	60.2
Traffic	68.2
Effect Indicators	—
CleanUp Sites	97.6
Groundwater	99.4
Haz Waste Facilities/Generators	99.4
Impaired Water Bodies	94.6
Solid Waste	96.4

Sensitive Population	—
Asthma	25.4
Cardio-vascular	14.4
Low Birth Weights	84.0
Socioeconomic Factor Indicators	—
Education	46.2
Housing	66.5
Linguistic	74.4
Poverty	68.0
Unemployment	43.1

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	—
Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—

Voting	—
Neighborhood	—
Alcohol availability	—
Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0
Asthma ER Admissions	86.1
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	78.9
Physically Disabled	55.6
Heart Attack ER Admissions	43.1

Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	26.8
Children	97.4
Elderly	96.3
English Speaking	0.0
Foreign-born	0.0
Outdoor Workers	70.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	6.8
Traffic Density	0.0
Traffic Access	52.3
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	79.0
Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	Portside EJ Communities

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Construction expected to take 8 months. No construction of any buildings.
Operations: Vehicle Data	Trips associated with warehouse land use to account for daily employee trips. Trips associated with asphalt surface land use to account for trucking trips. Total daily trips (138 tanker truck trips + 42 passenger vehicle trips) = 168. From US Compliance data, an average of 12.32 miles per truck trip was calculated.
Operations: Fleet Mix	Operations fleet mix to reflect the heavy duty truck trips associated with the Proposed Project. Of 168 total daily trips, 138 are truck trips (HHD) and 30 are employee trips (LDA)
Operations: Energy Use	No natural gas usage

EVAPORATIVE EMISSIONS CALCULATIONS

San Diego Clean Fuels LLC
National City, CA
Site Wide Total VOC Emissions

The enclosed emission calculations are for the transloading process of liquid fuels as noted in the table below.

Liquid Fuel	Maximum Daily Loading Throughput (gallons/day)	VOC Emissions lbs/day	VOC Emissions tons/yr
Denatured Ethanol / Aviation Fuel	420,000	2.83	0.52
Renewable Diesel	420,000	15.27	2.79
Biodiesel	126,000	1.77	0.32
Component Leaks	-	12.41	2.26
Site Total Emissions		**32.27**	**5.89**

Notes:
[1] The emissions from denatured ethanol and/or aviation fuel are assumed the worst case as denatured ethanol
[2] AP-42 Volume I, Chapter 5, Section 5.2 Transportation and Marketing of Petroleum Liquids

San Diego Clean Fuels LLC
National City, CA
Denatured Ethanol and Sustainable Aviation Fuel (SAF) Transloading

Regulated emission releases from Denatured ethanol and Sustainable Aviation Fuels (SAF) loading are calculated using the loading formula from EPA AP-42 section 5.2 and the associated partial pressures of each of the constituents listed on the SDS. The site will load a maximum of 10,000 barrels of either material combined. Emission calculations represent the worst case scenario.

Emission Calculation Equation

$$\text{Emissions (lbs)*} = 12.46 \times \frac{S \times P \times M \times Q \times (1-VC)}{T}$$

*Reference: EPA AP-42, Section 5.2, 2008

where

		Data		
S	=	0.60		Saturation factor: Submerged loading dedicated normal service (uncontrolled)
S	=	1.00		Saturation factor: Submerged loading dedicated vapor balance (controlled)
Q	=	See below		Volume of material loaded (1,000 gal/yr)
T	=	534.67		temperature of liquid, R (75 F)
VC	=	98.7%		Vapor Collection under NSPS-Level Annual Leak Test
		Denatured EtOH	*SAF* [2]	
P_{VOC}	=	See below	0.10156	Vapor Pressure of each VOC material (psia)
M_{VOC}	=	See below	170	Vapor molecular weight (lb/lb-mole)
Worst Case P*M Value	=	**22.22**		

	Denatured Ethanol								SAF
	Material Content (%)	Vapor Molecular Weight	Moles	Mole Fraction	Vapor Pressure (kPa)	Vapor Pressure (psia)	Partial Pressure (psia)	PM [Partial Pressure x MW]	PM Value
Ethanol	95	46	2.06	0.97	0.86	0.13	0.122	5.62	
Gasoline[1]	5	95	0.05	0.02	48.26	7.00	0.17	16.54	
Benzene	0.06	78	0.001	0.0004	12.80	1.86	0.001	0.05	
				Total PM value to use in Section 5.2 formula				**22.22**	**17.27**

[1] For gasoline, RVP7 was used for Vapor Pressure

[2] SAF is not broken down by material to calculate its PM value due to containing one constituent on the SDS

Moles = material content/MW

Mole Fraction = Moles/total Moles

1 kPa = 0.145038 psia

Partial Pressure = Mole Fraction x Vapor Pressure

Transloading from Railcars to Truck

Max Loading Rate (Total)			Q total	Emission Factor: Uncontrolled	Emission Factor: Controlled[1]	San Diego ACDP BACT threshold	VOC Emissions: Uncontrolled	VOC Emissions: Controlled	
(barrels/day)	(gals/day)	(gals/yr)	(1,000 gal/day)	(lbs/1000 gals)	(lbs/1000 gals)	(lbs/day)	(lbs/day)	(lbs/day)	(tons/yr)
10,000	420,000	153,300,000	420	0.311	0.007	10	130.5	2.83	0.52

[1] Emissions captured through a vapor balancing process back to the railcar are calculated at a capture efficiency of 98.7% for railcars passing the NSPS-level annual test as outlined under EPA AP-42 Section 5.2.

San Diego Clean Fuels LLC
National City, CA
Renewable Diesel Transloading

Regulated emission releases from Renewable Diesel loading are calculated using the loading formula from EPA AP-42 section 5.2 and the associated partial pressures of each of the constituents listed on the SDS.

Emission Calculation Equation

$$\text{Emissions (lbs)}^* = 12.46 \times \frac{S \times P \times M \times Q}{T}$$

*Reference: EPA AP-42, Section 5.2, 2008

where

		Data	
S	=	0.60	Saturation factor: Submerged loading dedicated normal service
P_{VOC}	=	0.013	Vapor pressure of material (psia)
M_{VOC}	=	200	Vapor molecular weight (lb/lb-mole)
Q	=	See below	Volume of material loaded (1,000 gal/yr)
T	=	535	temperature of liquid, R (75 F)

Transloading from Railcars to Truck

Fuel	Max Loading Rate (Total)			Q total	Emission Factor:	San Diego ACDP BACT threshold	VOC Emissions	
	(barrels/day)	(gals/day)	(gals/yr)	(1,000 gal/day)	(lbs/1000 gals)	(lbs/day)	(lbs/day)	(tons/yr)
Renewable Diesel	10,000	420,000	153,300,000	420	0.036	10	15.3	2.79
Additives	-	84	30,569	0.084	1.43E-06		6.02E-04	1.10E-04
				Total:	**0.036**		**15.3**	**2.79**

San Diego Clean Fuels LLC
National City, CA
Additives to Renewable Diesel

The additives listed in this document may be added to the permitted Renewable Diesel (RD) loading in the noted quantities. Actual regulated emissions from this process are negligible in quantity.

Additive	VOC	VOC (lbs/gal)	HAP Content		Volumes in Gallons: Volume of Additive	Volumes in Gallons: Load Batch	% of Batch (volume)	% of Batch (HAP Content)
Conductivity	0%	0.00	-	0%	84	672,000	0.01250%	0.00000%
Lubricity	5%	0.38	Triethanolamine	5%	2	672,000	0.00030%	0.00001%
Red Dye	32.60%	2.72	Xylene	35%	2	28,000	0.00714%	0.00250%
			Ethylbenzene	20%				0.00143%
Total Additives							0.01994%	0.00394%

Lubricity is to be added up to 100% of the RD loads
Conductivity is to be added up to 100% of the RD loads
Red Dye is to be added up to 50% of the RD loads

San Diego Clean Fuels LLC
National City, CA
Bio Diesel Transloading

Regulated emission releases from Bio Diesel loading are calculated using the loading formula from EPA AP-42 section 5.2 and the associated partial pressures of each of the constituents listed on the SDS.

Emission Calculation Equation

$$\text{Emissions (lbs)}^* = 12.46 \times \frac{S \times P \times M \times Q \times (1\text{-}VC)}{T}$$

*Reference: EPA AP-42, Section 5.2, 2008

where

		Data	
S	=	0.60	Sat factor: Submerged loading dedicated normal service (uncontrolled)
P_{VOC}	=	See Below	Partial pressure of each VOC material (psia)
M_{VOC}	=	See Below	Vapor molecular weight (lb/lb-mole)
Q	=	See below	Volume of material loaded (1,000 gal/yr)
T	=	535	temperature of liquid, R (75 F)

	Material Content (%)	Vapor Molecular Weight	Moles	Mole Fraction	Vapor Pressure (kPa)	Vapor Pressure (psia)	Partial Pressure (psia)	PM [Partial Pressure x MW]
Fuels, diesel	79	200	0.40	0.83	0.039	0.006	0.00467	0.9349
Methyl Esters	20	257	0.08	0.16	0.007	0.001	0.00	0.0413
Diesel Fuel	1	200	0.01	0.01	0.087	0.013	0.00	0.0264
				Total PM value to use in Section 5.2 formula				**1.003**

Moles = material content/MW
Mole Fraction = Moles/total Moles
1 kPa = 0.145038 psia
Partial Pressure = Mole Fraction x Vapor Pressure

Transloading from Railcars to Truck

Max Bio Diesel Loading Rate (Total)			Q total		Emission Factor:	San Diego ACDP BACT limit	VOC Emissions	
(barrels/day)	(gals/day)	(gals/yr)	(1,000 gal/day)	(1,000 gal/yr)	(lbs/1000 gals)	(lbs/day)	(lbs/day)	(tons/yr)
3,000	126,000	45,990,000	126	45,990	0.014	10	1.77	0.32

San Diego Clean Fuels LLC
National City, CA
Facility Wide Component Emissions

Source Unit		Service	Denatured Ethanol or SAF			Renewable Diesel			Biodiesel		
			Correlation Equation Factor[1] 500 ppm (lbs/year)	Number of Components	VOC Emissions (lbs/year)[3]	Correlation Equation Factor[1] 400 ppm (lbs/year)	Number of Components	VOC Emissions (lbs/year)[3]	Correlation Equation Factor[1] 300 ppm (lbs/year)	Number of Components	VOC Emissions (lbs/year)[3]
Valves	I & M Program	All	4.55	67	304.56	3.85	67	257.80	3.10	59	183.12
Pumps	Sealless Type	Light Liquid[2]	46.83	2	93.65	40.76	2	81.51	34.08	2	68.16
Connectors		All	2.86	22	62.95	2.43	22	53.42	1.96	20	39.29
Flanges (ANSI 16.5-1988)		All	6.99	145	1013.58	5.97	145	865.84	4.87	145	706.69
Pressure Relief Valves		All	4.55	8	36.37	3.85	8	30.78	3.10	8	24.83
Other (fittings, hatches, sight glasses, meters)		All	9.09	30	272.69	7.88	30	236.29	6.55	30	196.44
				VOC Emissions (lbs/day):	4.89		VOC Emissions (lbs/day):	4.18		VOC Emissions (lbs/day):	3.34
										VOC Emissions (lbs/day)	**12.41**

[1] Emission Factor from correlation equations based on Screening Value (SV) as listed
[2] Liquid with a vapor pressure greater than that of kerosene (>0.1 psia @ 100 F or 689 Pa @ 38 C)
[3] VOC emission calculations and equations come from Table IV-3a of South Coast AQMD's Guidelines for Fugitive Emission Calculations

San Diego Clean Fuels LLC
National City, CA
Vapor Collection System Background

AP-42, Section 5.2:

According to EPA AP-42 section 5.2 "Transportation and Marketing of Petroleum Liquids", page 6; trucks passing the NSPS-level annual leak test are assumed to have a collection efficiency of 98.7% across the collection system.

Documentation:

The models of trucks being used at the new San Diego Clean Fuels LLC facility are used at a similar site by the same owner and are required to pass the NSPS-level annual leak test at this facility. Similarly, San Diego Clean Fuels will require current proof of passing this required leak test for each truck that loads at the facility. This information will be used in the facility "authorization to load" software and will only allow trucks to load who have this current test on file at the facility. These leak tests will be available to San Diego APCD if requested.

TRAIN EMISSION CALCULATIONS

San Diego Clean Fuels Facility
Mainline Rail Criteria and GHG Emissions Calculations

Table A-1. Operational Assumptions for Train Transport of Liquid Fuels			
Description	**Value**	**Units**	**Source**
Avg Distance in SDAB (Mainline)	65	miles	GIS Based Estimate
Ton-mile per Gallon	970	ton-mi/gal	https://www.bnsf.com/
Trips per Year	104	#/yr	Two times per week
Truck Days per year	365	days/yr	Project Information
Ethanol Transferred/Sustainable Aviation Fuel	126,000	gal/day	Project Information
Renewable Diesel Transferred	336,000	gal/day	Project Information
Biodiesel Transferred	84,000	gal/day	Project Information
Ethanol Transferred	45,990,000	gal/yr	Trucks/Day * Days/Year
Renewable Diesel Transferred	122,640,000	gal/yr	Trucks/Day * Days/Year
Biodiesel Transferred	30,660,000	gal/yr	Trucks/Day * Days/Year
Total Throughput per year	199,290,000	gal/yr	Sum of Fuels
Ethanol Density	6.8	lb/gal	Conversion Factor
Renewable Diesel Density	7.3	lb/gal	Conversion Factor
Biodiesel Density	7.3	lb/gal	Conversion Factor
Average Daily Material Transferred	1,961	tons/day	Process Information
Annual Mass Transferred	715,681	ton/year	Process Information

Table A-2. Calculated Operational Values for Locomotive Trips			
	Value		
Operational Value	**daily**	**annual**	**Unit**
SDAB - Ton-Miles	127,450	46,519,268	ton-miles
Gallons Fuel Used	131	47,948	gallons

Table A-3. Composite Locomotive Emission Factors from CARB Vision Access Database							
	Emission Factor (g/gal transportation fuel)						
Source Type	**CO**	**NO_X**	**SO_2**	**ROG**	**PM_{10}**	**$PM_{2.5}$**	**CO2**
Mainline Composite	26.49	107.97	20.65	6.79	3.77	3.47	10,155

(1) Mainline composite Utilizes a composite from the latest BNSF Financial Report (BNSF, 2020)

Equations:

1. Emissions (lb/day) = Material Weight (tons/day) * Trip Distance (mi) * / (ton-miles/gallon) / 453.6 (g/lb)
2. Annual Emissions (tons/yr) = Material Weight (tons/yr) * Trip Distance (mi) * / (ton-miles/gallon) / 453.6 (g/lb)

Table A-4. Daily Emissions from Train Transport of Clean Fuels							
	Daily Emissions (lb/day)						
Air Basin	**CO**	**NO_X**	**SO_2**	**ROG**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**
Mainline Composite	7.67	31.24	5.97	1.96	1.09	1.00	2,938
CEQA Threshold	**550**	**250**	**250**	**137**	**100**	--	

Table A-5. Annual Emissions from Train Transport of Clean Fuels							
	Annual Emissions (tpy)						**MT**
Air Basin	**CO**	**NO_X**	**SO_2**	**ROG**	**PM_{10}**	**$PM_{2.5}$**	**CO2**
Mainline Composite	1.40	5.70	1.09	0.36	0.20	0.18	486
CEQA Threshold	**100**	**40**	**40**	**15**	**15**	**--**	**3,000**

San Diego Clean Fuels Facility
Mainline Rail Criteria and GHG Emissions Calculations

Acronyms

CO	carbon monoxide	PM	particulate matter
CO_2	carbon dioxide	PM_{10}	PM less than 10 microns in diameter
g	grams	$PM_{2.5}$	PM less than 2.5 microns in diameter
g/mi	grams per mile	ROG	Reactive Organic Gas
lb.	pound	SDAB	San Diego Bay Air Basin
mi	mile	SO2	sulfur dioxide
NOx	nitrogen oxide	tpy	tons per year
PM	particulate matter		

ATTACHMENT B

Health Risk Analysis Output Files

OPERATIONAL HEALTH RISK ASSESSMENT CALCULATIONS

Receptor Pathway

AERMOD

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Uniform Cartesian Grid

Receptor Network ID	Grid Origin X Coordinate [m]	Grid Origin Y Coordinate [m]	No. of X-Axis Receptors	No. of Y-Axis Receptors	Spacing for X-Axis [m]	Spacing for Y-Axis [m]
UCART1	488325.77	3613186.13	40	40	50.00	50.00

Discrete Receptors

Plant Boundary Receptors

Source Pathway - Source Inputs

AERMOD

Volume Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dim. [m]	Initial Vertical Dim. [m]
VOLUME	VOL1	489437.73	3614063.92	5.83	3.00	1.00000	49.47		11.50	4.20
		Onsite Idle								

Source Pathway - Source Inputs

AERMOD

Line Volume Sources

Source Type: LINE VOLUME
Source: SLINE1

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
45.00	1.00000		489416.53	3614035.65	5.30	0.00
			489292.85	3614417.30	4.00	0.00

Source Type: LINE VOLUME
Source: SLINE2 (Exit to I5N)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000		489642.69	3614722.96	8.50	2.55
			489248.68	3614586.92	3.57	2.55
			489188.60	3613931.40	2.86	2.55
			489460.70	3614019.75	6.06	2.55

Source Type: LINE VOLUME
Source: SLINE3 (Cleveland to Entrence)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000		489529.61	3614664.66	6.96	0.00
			489400.63	3614560.41	5.20	0.00
			489515.48	3614150.50	6.97	0.00
			489427.13	3614109.86	5.83	0.00

Source Type: LINE VOLUME
Source: SLINE4 (Exit to W 18 St)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000		489474.84	3614025.05	6.17	0.00
			489549.05	3614048.02	7.03	0.00
			489515.48	3614148.73	6.97	0.00

Source Pathway - Source Inputs

AERMOD

Source Type: LINE VOLUME
Source: SLINE5 (W18 ST)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000		489522.54	3614154.03	7.00	0.00
			489944.83	3614286.55	13.18	0.00

Source Type: LINE VOLUME
Source: SLINE6 (CLEVELAND SOUTH to I5)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
8.00	1.00000		489554.35	3614051.55	7.05	0.00
			489708.07	3613572.73	10.70	0.00
			489817.61	3613595.70	11.90	0.00

Source Pathway - Source Inputs

AERMOD

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000001	489409.60	3614057.05	5.47	0.00	0.11111	45.00		20.93	17.21
	L0000002	489395.72	3614099.86	5.29	0.00	0.11111	45.00		20.93	17.21
	L0000003	489381.85	3614142.67	5.11	0.00	0.11111	45.00		20.93	17.21
	L0000004	489367.98	3614185.48	4.93	0.00	0.11111	45.00		20.93	17.21
	L0000005	489354.10	3614228.29	4.76	0.00	0.11111	45.00		20.93	17.21
	L0000006	489340.23	3614271.09	4.58	0.00	0.11111	45.00		20.93	17.21
	L0000007	489326.36	3614313.90	4.40	0.00	0.11111	45.00		20.93	17.21
	L0000008	489312.48	3614356.71	4.22	0.00	0.11111	45.00		20.93	17.21
	L0000009	489298.61	3614399.52	4.04	0.00	0.11111	45.00		20.93	17.21

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000010	489638.91	3614721.66	8.39	2.55	0.01163	8.00		7.40	1.95
	L0000011	489623.86	3614716.46	8.20	2.55	0.01163	8.00		7.40	1.95
	L0000012	489608.82	3614711.27	8.01	2.55	0.01163	8.00		7.40	1.95
	L0000013	489593.77	3614706.07	7.82	2.55	0.01163	8.00		7.40	1.95
	L0000014	489578.72	3614700.88	7.62	2.55	0.01163	8.00		7.40	1.95
	L0000015	489563.67	3614695.68	7.43	2.55	0.01163	8.00		7.40	1.95
	L0000016	489548.62	3614690.48	7.24	2.55	0.01163	8.00		7.40	1.95
	L0000017	489533.58	3614685.29	7.05	2.55	0.01163	8.00		7.40	1.95
	L0000018	489518.53	3614680.09	6.85	2.55	0.01163	8.00		7.40	1.95
	L0000019	489503.48	3614674.90	6.66	2.55	0.01163	8.00		7.40	1.95
	L0000020	489488.43	3614669.70	6.47	2.55	0.01163	8.00		7.40	1.95
	L0000021	489473.38	3614664.50	6.28	2.55	0.01163	8.00		7.40	1.95
	L0000022	489458.34	3614659.31	6.08	2.55	0.01163	8.00		7.40	1.95

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000023	489443.29	3614654.11	5.89	2.55	0.01163	8.00		7.40	1.95
	L0000024	489428.24	3614648.92	5.70	2.55	0.01163	8.00		7.40	1.95
	L0000025	489413.19	3614643.72	5.51	2.55	0.01163	8.00		7.40	1.95
	L0000026	489398.14	3614638.52	5.31	2.55	0.01163	8.00		7.40	1.95
	L0000027	489383.10	3614633.33	5.12	2.55	0.01163	8.00		7.40	1.95
	L0000028	489368.05	3614628.13	4.93	2.55	0.01163	8.00		7.40	1.95
	L0000029	489353.00	3614622.94	4.74	2.55	0.01163	8.00		7.40	1.95
	L0000030	489337.95	3614617.74	4.54	2.55	0.01163	8.00		7.40	1.95
	L0000031	489322.90	3614612.54	4.35	2.55	0.01163	8.00		7.40	1.95
	L0000032	489307.86	3614607.35	4.16	2.55	0.01163	8.00		7.40	1.95
	L0000033	489292.81	3614602.15	3.97	2.55	0.01163	8.00		7.40	1.95
	L0000034	489277.76	3614596.96	3.77	2.55	0.01163	8.00		7.40	1.95
	L0000035	489262.71	3614591.76	3.58	2.55	0.01163	8.00		7.40	1.95
	L0000036	489248.58	3614585.85	3.40	2.55	0.01163	8.00		7.40	1.95
	L0000037	489247.13	3614569.99	3.38	2.55	0.01163	8.00		7.40	1.95
	L0000038	489245.68	3614554.14	3.36	2.55	0.01163	8.00		7.40	1.95
	L0000039	489244.22	3614538.29	3.35	2.55	0.01163	8.00		7.40	1.95
	L0000040	489242.77	3614522.43	3.33	2.55	0.01163	8.00		7.40	1.95
	L0000041	489241.32	3614506.58	3.31	2.55	0.01163	8.00		7.40	1.95
	L0000042	489239.86	3614490.73	3.29	2.55	0.01163	8.00		7.40	1.95
	L0000043	489238.41	3614474.87	3.27	2.55	0.01163	8.00		7.40	1.95
	L0000044	489236.96	3614459.02	3.25	2.55	0.01163	8.00		7.40	1.95
	L0000045	489235.51	3614443.17	3.24	2.55	0.01163	8.00		7.40	1.95
	L0000046	489234.05	3614427.31	3.22	2.55	0.01163	8.00		7.40	1.95
	L0000047	489232.60	3614411.46	3.20	2.55	0.01163	8.00		7.40	1.95

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000048	489231.15	3614395.61	3.18	2.55	0.01163	8.00		7.40	1.95
	L0000049	489229.69	3614379.75	3.16	2.55	0.01163	8.00		7.40	1.95
	L0000050	489228.24	3614363.90	3.14	2.55	0.01163	8.00		7.40	1.95
	L0000051	489226.79	3614348.05	3.13	2.55	0.01163	8.00		7.40	1.95
	L0000052	489225.33	3614332.19	3.11	2.55	0.01163	8.00		7.40	1.95
	L0000053	489223.88	3614316.34	3.09	2.55	0.01163	8.00		7.40	1.95
	L0000054	489222.43	3614300.49	3.07	2.55	0.01163	8.00		7.40	1.95
	L0000055	489220.98	3614284.63	3.05	2.55	0.01163	8.00		7.40	1.95
	L0000056	489219.52	3614268.78	3.03	2.55	0.01163	8.00		7.40	1.95
	L0000057	489218.07	3614252.93	3.02	2.55	0.01163	8.00		7.40	1.95
	L0000058	489216.62	3614237.07	3.00	2.55	0.01163	8.00		7.40	1.95
	L0000059	489215.16	3614221.22	2.98	2.55	0.01163	8.00		7.40	1.95
	L0000060	489213.71	3614205.37	2.96	2.55	0.01163	8.00		7.40	1.95
	L0000061	489212.26	3614189.51	2.94	2.55	0.01163	8.00		7.40	1.95
	L0000062	489210.81	3614173.66	2.92	2.55	0.01163	8.00		7.40	1.95
	L0000063	489209.35	3614157.81	2.91	2.55	0.01163	8.00		7.40	1.95
	L0000064	489207.90	3614141.95	2.89	2.55	0.01163	8.00		7.40	1.95
	L0000065	489206.45	3614126.10	2.87	2.55	0.01163	8.00		7.40	1.95
	L0000066	489204.99	3614110.25	2.85	2.55	0.01163	8.00		7.40	1.95
	L0000067	489203.54	3614094.39	2.83	2.55	0.01163	8.00		7.40	1.95
	L0000068	489202.09	3614078.54	2.81	2.55	0.01163	8.00		7.40	1.95
	L0000069	489200.64	3614062.69	2.79	2.55	0.01163	8.00		7.40	1.95
	L0000070	489199.18	3614046.83	2.78	2.55	0.01163	8.00		7.40	1.95
	L0000071	489197.73	3614030.98	2.76	2.55	0.01163	8.00		7.40	1.95
	L0000072	489196.28	3614015.13	2.74	2.55	0.01163	8.00		7.40	1.95

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000073	489194.82	3613999.27	2.72	2.55	0.01163	8.00		7.40	1.95
	L0000074	489193.37	3613983.42	2.70	2.55	0.01163	8.00		7.40	1.95
	L0000075	489191.92	3613967.57	2.68	2.55	0.01163	8.00		7.40	1.95
	L0000076	489190.47	3613951.71	2.67	2.55	0.01163	8.00		7.40	1.95
	L0000077	489189.01	3613935.86	2.65	2.55	0.01163	8.00		7.40	1.95
	L0000078	489199.49	3613934.94	2.78	2.55	0.01163	8.00		7.40	1.95
	L0000079	489214.63	3613939.85	2.98	2.55	0.01163	8.00		7.40	1.95
	L0000080	489229.77	3613944.77	3.17	2.55	0.01163	8.00		7.40	1.95
	L0000081	489244.92	3613949.69	3.36	2.55	0.01163	8.00		7.40	1.95
	L0000082	489260.06	3613954.60	3.56	2.55	0.01163	8.00		7.40	1.95
	L0000083	489275.20	3613959.52	3.75	2.55	0.01163	8.00		7.40	1.95
	L0000084	489290.34	3613964.44	3.94	2.55	0.01163	8.00		7.40	1.95
	L0000085	489305.48	3613969.35	4.14	2.55	0.01163	8.00		7.40	1.95
	L0000086	489320.62	3613974.27	4.33	2.55	0.01163	8.00		7.40	1.95
	L0000087	489335.77	3613979.18	4.53	2.55	0.01163	8.00		7.40	1.95
	L0000088	489350.91	3613984.10	4.72	2.55	0.01163	8.00		7.40	1.95
	L0000089	489366.05	3613989.02	4.91	2.55	0.01163	8.00		7.40	1.95
	L0000090	489381.19	3613993.93	5.11	2.55	0.01163	8.00		7.40	1.95
	L0000091	489396.33	3613998.85	5.30	2.55	0.01163	8.00		7.40	1.95
	L0000092	489411.47	3614003.76	5.49	2.55	0.01163	8.00		7.40	1.95
	L0000093	489426.62	3614008.68	5.69	2.55	0.01163	8.00		7.40	1.95
	L0000094	489441.76	3614013.60	5.88	2.55	0.01163	8.00		7.40	1.95
	L0000095	489456.90	3614018.51	6.08	2.55	0.01163	8.00		7.40	1.95

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000220	489526.50	3614662.14	6.96	0.00	0.02273	8.00		7.36	1.95
	L0000221	489514.19	3614652.19	6.80	0.00	0.02273	8.00		7.36	1.95
	L0000222	489501.87	3614642.24	6.64	0.00	0.02273	8.00		7.36	1.95
	L0000223	489489.56	3614632.29	6.48	0.00	0.02273	8.00		7.36	1.95
	L0000224	489477.25	3614622.34	6.33	0.00	0.02273	8.00		7.36	1.95
	L0000225	489464.93	3614612.38	6.17	0.00	0.02273	8.00		7.36	1.95
	L0000226	489452.62	3614602.43	6.01	0.00	0.02273	8.00		7.36	1.95
	L0000227	489440.31	3614592.48	5.85	0.00	0.02273	8.00		7.36	1.95
	L0000228	489427.99	3614582.53	5.70	0.00	0.02273	8.00		7.36	1.95
	L0000229	489415.68	3614572.58	5.54	0.00	0.02273	8.00		7.36	1.95
	L0000230	489403.37	3614562.62	5.38	0.00	0.02273	8.00		7.36	1.95
	L0000231	489403.95	3614548.56	5.39	0.00	0.02273	8.00		7.36	1.95
	L0000232	489408.22	3614533.31	5.45	0.00	0.02273	8.00		7.36	1.95
	L0000233	489412.49	3614518.07	5.50	0.00	0.02273	8.00		7.36	1.95
	L0000234	489416.77	3614502.82	5.55	0.00	0.02273	8.00		7.36	1.95
	L0000235	489421.04	3614487.58	5.61	0.00	0.02273	8.00		7.36	1.95
	L0000236	489425.31	3614472.33	5.66	0.00	0.02273	8.00		7.36	1.95
	L0000237	489429.58	3614457.09	5.72	0.00	0.02273	8.00		7.36	1.95
	L0000238	489433.85	3614441.84	5.77	0.00	0.02273	8.00		7.36	1.95
	L0000239	489438.12	3614426.60	5.83	0.00	0.02273	8.00		7.36	1.95
	L0000240	489442.39	3614411.35	5.88	0.00	0.02273	8.00		7.36	1.95
	L0000241	489446.66	3614396.10	5.94	0.00	0.02273	8.00		7.36	1.95
	L0000242	489450.94	3614380.86	5.99	0.00	0.02273	8.00		7.36	1.95
	L0000243	489455.21	3614365.61	6.05	0.00	0.02273	8.00		7.36	1.95
	L0000244	489459.48	3614350.37	6.10	0.00	0.02273	8.00		7.36	1.95

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000245	489463.75	3614335.12	6.16	0.00	0.02273	8.00		7.36	1.95
	L0000246	489468.02	3614319.88	6.21	0.00	0.02273	8.00		7.36	1.95
	L0000247	489472.29	3614304.63	6.27	0.00	0.02273	8.00		7.36	1.95
	L0000248	489476.56	3614289.39	6.32	0.00	0.02273	8.00		7.36	1.95
	L0000249	489480.83	3614274.14	6.38	0.00	0.02273	8.00		7.36	1.95
	L0000250	489485.11	3614258.90	6.43	0.00	0.02273	8.00		7.36	1.95
	L0000251	489489.38	3614243.65	6.49	0.00	0.02273	8.00		7.36	1.95
	L0000252	489493.65	3614228.41	6.54	0.00	0.02273	8.00		7.36	1.95
	L0000253	489497.92	3614213.16	6.60	0.00	0.02273	8.00		7.36	1.95
	L0000254	489502.19	3614197.92	6.65	0.00	0.02273	8.00		7.36	1.95
	L0000255	489506.46	3614182.67	6.71	0.00	0.02273	8.00		7.36	1.95
	L0000256	489510.73	3614167.43	6.76	0.00	0.02273	8.00		7.36	1.95
	L0000257	489515.00	3614152.18	6.82	0.00	0.02273	8.00		7.36	1.95
	L0000258	489502.68	3614144.61	6.66	0.00	0.02273	8.00		7.36	1.95
	L0000259	489488.30	3614138.00	6.48	0.00	0.02273	8.00		7.36	1.95
	L0000260	489473.92	3614131.38	6.29	0.00	0.02273	8.00		7.36	1.95
	L0000261	489459.53	3614124.76	6.11	0.00	0.02273	8.00		7.36	1.95
	L0000262	489445.15	3614118.15	5.92	0.00	0.02273	8.00		7.36	1.95
	L0000263	489430.77	3614111.53	5.74	0.00	0.02273	8.00		7.36	1.95

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000350	489478.66	3614026.23	6.35	0.00	0.08333	8.00		7.44	1.95
	L0000351	489493.93	3614030.96	6.55	0.00	0.08333	8.00		7.44	1.95
	L0000352	489509.20	3614035.68	6.74	0.00	0.08333	8.00		7.44	1.95
	L0000353	489524.47	3614040.41	6.94	0.00	0.08333	8.00		7.44	1.95

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000354	489539.74	3614045.14	7.13	0.00	0.08333	8.00		7.44	1.95
	L0000355	489547.07	3614053.94	7.23	0.00	0.08333	8.00		7.44	1.95
	L0000356	489542.02	3614069.11	7.16	0.00	0.08333	8.00		7.44	1.95
	L0000357	489536.96	3614084.27	7.10	0.00	0.08333	8.00		7.44	1.95
	L0000358	489531.91	3614099.44	7.03	0.00	0.08333	8.00		7.44	1.95
	L0000359	489526.85	3614114.60	6.97	0.00	0.08333	8.00		7.44	1.95
	L0000360	489521.80	3614129.77	6.90	0.00	0.08333	8.00		7.44	1.95
	L0000361	489516.74	3614144.94	6.84	0.00	0.08333	8.00		7.44	1.95

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0000362	489526.36	3614155.23	6.96	0.00	0.03448	8.00		7.22	1.95
	L0000363	489541.17	3614159.88	7.15	0.00	0.03448	8.00		7.22	1.95
	L0000364	489555.98	3614164.52	7.34	0.00	0.03448	8.00		7.22	1.95
	L0000365	489570.79	3614169.17	7.53	0.00	0.03448	8.00		7.22	1.95
	L0000366	489585.60	3614173.82	7.72	0.00	0.03448	8.00		7.22	1.95
	L0000367	489600.41	3614178.46	7.91	0.00	0.03448	8.00		7.22	1.95
	L0000368	489615.21	3614183.11	8.10	0.00	0.03448	8.00		7.22	1.95
	L0000369	489630.02	3614187.76	8.29	0.00	0.03448	8.00		7.22	1.95
	L0000370	489644.83	3614192.41	8.48	0.00	0.03448	8.00		7.22	1.95
	L0000371	489659.64	3614197.05	8.67	0.00	0.03448	8.00		7.22	1.95
	L0000372	489674.45	3614201.70	8.86	0.00	0.03448	8.00		7.22	1.95
	L0000373	489689.26	3614206.35	9.07	0.00	0.03448	8.00		7.22	1.95
	L0000374	489704.07	3614210.99	9.33	0.00	0.03448	8.00		7.22	1.95
	L0000375	489718.88	3614215.64	9.57	0.00	0.03448	8.00		7.22	1.95
	L0000376	489733.69	3614220.29	9.80	0.00	0.03448	8.00		7.22	1.95

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE5	L0000377	489748.50	3614224.94	10.00	0.00	0.03448	8.00		7.22	1.95
	L0000378	489763.30	3614229.58	10.19	0.00	0.03448	8.00		7.22	1.95
	L0000379	489778.11	3614234.23	10.48	0.00	0.03448	8.00		7.22	1.95
	L0000380	489792.92	3614238.88	10.80	0.00	0.03448	8.00		7.22	1.95
	L0000381	489807.73	3614243.52	11.14	0.00	0.03448	8.00		7.22	1.95
	L0000382	489822.54	3614248.17	11.50	0.00	0.03448	8.00		7.22	1.95
	L0000383	489837.35	3614252.82	11.83	0.00	0.03448	8.00		7.22	1.95
	L0000384	489852.16	3614257.47	12.02	0.00	0.03448	8.00		7.22	1.95
	L0000385	489866.97	3614262.11	12.16	0.00	0.03448	8.00		7.22	1.95
	L0000386	489881.78	3614266.76	12.30	0.00	0.03448	8.00		7.22	1.95
	L0000387	489896.58	3614271.41	12.44	0.00	0.03448	8.00		7.22	1.95
	L0000388	489911.39	3614276.05	12.58	0.00	0.03448	8.00		7.22	1.95
	L0000389	489926.20	3614280.70	12.72	0.00	0.03448	8.00		7.22	1.95
	L0000390	489941.01	3614285.35	12.85	0.00	0.03448	8.00		7.22	1.95

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE6	L0000391	489555.57	3614047.74	7.34	0.00	0.02564	8.00		7.43	1.95
	L0000392	489560.45	3614032.54	7.40	0.00	0.02564	8.00		7.43	1.95
	L0000393	489565.33	3614017.33	7.46	0.00	0.02564	8.00		7.43	1.95
	L0000394	489570.21	3614002.13	7.53	0.00	0.02564	8.00		7.43	1.95
	L0000395	489575.10	3613986.92	7.59	0.00	0.02564	8.00		7.43	1.95
	L0000396	489579.98	3613971.72	7.65	0.00	0.02564	8.00		7.43	1.95
	L0000397	489584.86	3613956.52	7.71	0.00	0.02564	8.00		7.43	1.95
	L0000398	489589.74	3613941.31	7.78	0.00	0.02564	8.00		7.43	1.95
	L0000399	489594.62	3613926.11	7.84	0.00	0.02564	8.00		7.43	1.95

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE6	L0000400	489599.50	3613910.90	7.90	0.00	0.02564	8.00		7.43	1.95
	L0000401	489604.38	3613895.70	7.96	0.00	0.02564	8.00		7.43	1.95
	L0000402	489609.26	3613880.49	8.03	0.00	0.02564	8.00		7.43	1.95
	L0000403	489614.15	3613865.29	8.10	0.00	0.02564	8.00		7.43	1.95
	L0000404	489619.03	3613850.08	8.20	0.00	0.02564	8.00		7.43	1.95
	L0000405	489623.91	3613834.88	8.32	0.00	0.02564	8.00		7.43	1.95
	L0000406	489628.79	3613819.67	8.45	0.00	0.02564	8.00		7.43	1.95
	L0000407	489633.67	3613804.47	8.61	0.00	0.02564	8.00		7.43	1.95
	L0000408	489638.55	3613789.26	8.79	0.00	0.02564	8.00		7.43	1.95
	L0000409	489643.43	3613774.06	8.93	0.00	0.02564	8.00		7.43	1.95
	L0000410	489648.31	3613758.85	9.06	0.00	0.02564	8.00		7.43	1.95
	L0000411	489653.20	3613743.65	9.18	0.00	0.02564	8.00		7.43	1.95
	L0000412	489658.08	3613728.44	9.31	0.00	0.02564	8.00		7.43	1.95
	L0000413	489662.96	3613713.24	9.43	0.00	0.02564	8.00		7.43	1.95
	L0000414	489667.84	3613698.04	9.56	0.00	0.02564	8.00		7.43	1.95
	L0000415	489672.72	3613682.83	9.70	0.00	0.02564	8.00		7.43	1.95
	L0000416	489677.60	3613667.63	9.83	0.00	0.02564	8.00		7.43	1.95
	L0000417	489682.48	3613652.42	9.95	0.00	0.02564	8.00		7.43	1.95
	L0000418	489687.36	3613637.22	10.03	0.00	0.02564	8.00		7.43	1.95
	L0000419	489692.24	3613622.01	10.09	0.00	0.02564	8.00		7.43	1.95
	L0000420	489697.13	3613606.81	10.15	0.00	0.02564	8.00		7.43	1.95
	L0000421	489702.01	3613591.60	10.22	0.00	0.02564	8.00		7.43	1.95
	L0000422	489706.89	3613576.40	10.28	0.00	0.02564	8.00		7.43	1.95
	L0000423	489719.92	3613575.21	10.45	0.00	0.02564	8.00		7.43	1.95
	L0000424	489735.55	3613578.49	10.65	0.00	0.02564	8.00		7.43	1.95

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE6	L0000425	489751.18	3613581.77	10.85	0.00	0.02564	8.00		7.43	1.95
	L0000426	489766.81	3613585.05	11.05	0.00	0.02564	8.00		7.43	1.95
	L0000427	489782.44	3613588.32	11.25	0.00	0.02564	8.00		7.43	1.95
	L0000428	489798.07	3613591.60	11.45	0.00	0.02564	8.00		7.43	1.95
	L0000429	489813.70	3613594.88	11.65	0.00	0.02564	8.00		7.43	1.95

Meteorology Pathway

Met Input Data

Surface Met Data

Filename: ..\PES_2010_2012_sigma_v19191.SFC

Format Type: Default AERMET format

Profile Met Data

Filename: ..\PES_2010_2012_sigma_v19191.PFL

Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 4.00 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2010			SAN DIEGO/LINDBERGH FIELD
Upper Air		2010			
On-Site		2010			

Data Period

Data Period to Process

Start Date: 1/1/2010 Start Hour: 1 End Date: 12/31/2012 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Source Pathway - Source Inputs

AERMOD

Volume Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dim. [m]	Initial Vertical Dim. [m]
VOLUME	VOL2	489384.90	3614154.63	4.80	1.50	1.00000	13.00		3.02	1.86
		Fuel Transfer Volume Source								
VOLUME	VOL3	489400.28	3614108.51	4.89	1.50	1.00000	13.00		3.02	1.86
		Fuel Transfer Volume Source								
VOLUME	VOL4	489416.67	3614063.42	5.47	1.50	1.00000	13.00		3.02	1.86
		Fuel Transfer Volume Source								

Source Pathway

AERMOD

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID: VOL4	List of Sources in Group (Source Range or Single Sources)
	VOL4

Source Group ID: VOL3	List of Sources in Group (Source Range or Single Sources)
	VOL3

Source Group ID: VOL2	List of Sources in Group (Source Range or Single Sources)
	VOL2

Source Group ID: ALL	List of Sources in Group (Source Range or Single Sources)
	All Sources Included

Receptor Pathway

AERMOD

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Uniform Cartesian Grid

Receptor Network ID	Grid Origin X Coordinate [m]	Grid Origin Y Coordinate [m]	No. of X-Axis Receptors	No. of Y-Axis Receptors	Spacing for X-Axis [m]	Spacing for Y-Axis [m]
UCART1	488325.77	3613186.13	40	40	50.00	50.00

Discrete Receptors

Plant Boundary Receptors

Results Summary

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UNITIZED - Concentration - Source Group: ALL

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	11783.84105	ug/m^3	489425.77	3614086.13	5.20	0.00	5.20	10/13/2011, 21
PERIOD		2476.72796	ug/m^3	489425.77	3614086.13	5.20	0.00	5.20	

UNITIZED - Concentration - Source Group: VOL2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	6339.52725	ug/m^3	489375.77	3614186.13	4.50	0.00	4.50	1/26/2012, 23
PERIOD		1637.73417	ug/m^3	489375.77	3614136.13	4.60	0.00	4.60	

UNITIZED - Concentration - Source Group: VOL3

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	5665.98728	ug/m^3	489425.77	3614086.13	5.20	0.00	5.20	12/10/2010, 7
PERIOD		758.36747	ug/m^3	489425.77	3614086.13	5.20	0.00	5.20	

UNITIZED - Concentration - Source Group: VOL4

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	10209.56162	ug/m^3	489425.77	3614086.13	5.20	0.00	5.20	10/13/2011, 21
PERIOD		1561.64647	ug/m^3	489425.77	3614086.13	5.20	0.00	5.20	

San Diego Clean Fuels Facility
Offsite Truck Emission Calculations

Table B-1. Modeled Roadway Dimensions

Roadway Link Description[1]	AERMOD ID	Length (miles)	Width (m)	Area (m^2)
Exit to I5N	SLINE2	0.85	7.4	10,075
I5 to Entrance	SLINE3	0.43	7.4	5,098
Exit to W 18th St	SLINE4	0.11	7.4	1,310
18th Street	SLINE5	0.28	7.4	3,297
Cleveland South to I5	SLINE6	0.38	7.4	4,570

(1) Onsite emissions accounted for in Onsite Idling Calculations

Table B-2. Total Trip Information

Trip Type	Trips
Average Daily Trips[1]	138

(1) Average Daily Truck trips are one way.

Table B-3. Vehicle EMFAC2021 Emission Rates

Vehicle Type	DPM Emission Rates[1] (g/mi)				
	Idle[2]	5 mph	10 mph	35 mph	Composite
HHDT	0.017	0.015	0.013	0.008	0.010

(1) EMFAC2021 PM10 2023 exhaust emission factors for San Diego County Heavy Duty Trucks.

(2) Idle emission rates in grams per hour as generated in EMFAC.

(3) Composite factor is 80% @ 35 mph + 5% @ 10 mph + 15% @ 5 mph + 1 minute idle per 10 miles

Table B-4. Modeled Roadway Trip Information

Roadway Link	Trip Information		
	Percentage Total Trips	Peak Hourly	Average Daily
Exit to I5N	87%	10.9	120.1
I5 to Entrance	87%	10.9	120.1
Exit to W 18th St	13%	1.6	17.9
18th Street	3%	0.4	4.1
Cleveland South to I5	10%	1.3	13.8

San Diego Clean Fuels Facility
Offsite Truck Emission Calculations

Table B-5. Calculated Emissions from Offsite Truck Traffic

	Emissions	
Roadway Link	**Peak Hourly (lbs/hr)**	**Annual (lbs/yr)**
Exit to I5N	0.09	0.98
I5 to Entrance	0.04	0.49
Exit to W 18th St	0.0017	0.019
18th Street	0.001	0.01
Cleveland South to I5	0.00	0.05

San Diego Clean Fuels Facility
Onsite Truck Emission Calculations

Table B-6. Calculated Emissions for Onsite Truck Activities

On-Site Idle Emissions	Composite Emission Factor (g/hour)	Idling Time (min)	Daily Trucks	Peak Hourly (lbs/hr)	Annual (lbs/yr)
Project Trucks	0.017	20	69	0.0001	0.31
Total Onsite				0.0001	0.31

Source: EMFAC2021. PM10 Emission Factors are derived from the Year 2023 Heavy-Duty Trucks

San Diego Clean Fuels Facility
Switching Activity Emissions Calculations

Table B-7. Modeled Switching Area Dimensions

Source Description	AERMOD ID	Length (miles)	Width (m)	Area (m^2)
Switching Line Volume Source	SLINE1	0.11	20	3,541

(1) All rail activity modeled as a line volume source of 20 meter width.

Table B-8. Activity Information

Trip Type	Hours
Average Daily Switching Activity	0.5

Table B-9. Vehicle EMFAC2021 Emission Rates

	DPM Emission Rates[1] (g/hr)				
Engine Type	**Idle**	**Breaking**	**1**	**2**	**Composite**
Switching Engine	31.0	56.0	23.0	76.0	30.4

(1) Source: SAN DIEGO TAC EMISSIONS INVENTORY (Environ from BNSF, 2008)
Composite EF = mode 1 * .8 + mode 2 * .1 + Idle * .05 + Breaking * .05

Equations

Hourly Emissions (lbs/hr) = Hours per Day * Composite DPM ER (g/hr) / 454 (g/lb)
Annual Emissions (lbs/yr) = Hourly Emissions (lbs/hr) * 365 (days/yr) * 30 min / 60 min/hr

Table B-9. Calculated Emissions from Switching Activities

	Emissions	
Source Description	**Peak Hourly (lbs/hr)**	**Annual (lbs/yr)**
Switching Line Volume Source	0.03	6.1

San Diego Clean Fuels Facility

Fuel Transfer Toxic Air Contaminant Speciations and Emissions

Diesel Residual

1 % of RD/BD VOC emissions conservativly representing potential diesel residual: 0.29 lb/day

Table B-10. Diesel Fuel Speciation (Air Force 2021 Guidance Document) and Calculated Emissions

CAS	Pollutant	Wt (%)	lb/day	lb/yr	lb/hr
120-12-7	Anthracene	5.76E-08	1.70E-10	6.19E-08	1.70E-11
71-43-2	Benzene	1.94E-01	5.71E-04	2.08E-01	5.71E-05
132-64-9	Dibenzofuran	1.26E-04	3.71E-07	1.35E-04	3.71E-08
100-41-4	Ethyl Benzene	3.10E-01	9.13E-04	3.33E-01	9.13E-05
86-73-7	Fluorene	5.48E-05	1.61E-07	5.89E-05	1.61E-08
110-54-3	Hexane	3.91E-02	1.15E-04	4.20E-02	1.15E-05
91-20-3	Naphthalene	2.15E-01	6.33E-04	2.31E-01	6.33E-05
85-01-8	Phenanthrene	1.21E-05	3.56E-08	1.30E-05	3.56E-09
129-00-0	Pyrene	5.06E-07	1.49E-09	5.44E-07	1.49E-10
108-88-3	Toluene	2.19E+00	6.45E-03	2.35E+00	6.45E-04
1330-20-7	Xylenes	6.06E+00	1.78E-02	6.51E+00	1.78E-03

Jet Fuel Residual

1 % of Aviation Fuel/Ethenol VOC emissions representing potential Jet-A residual: 0.03 lb/day

Table B-11. JP-8/Jet A Speciation (Air Force 2021 Guidance Document) and Calculated Emissions

CAS	Pollutant	Wt (%)	lb/day	lb/yr	lb/hr
71-43-2	Benzene	1.550	4.39E-04	1.60E-01	4.39E-05
98-82-8	Cumene (Isopropylbenzene)	0.381	1.08E-04	3.94E-02	1.08E-05
100-41-4	Ethyl Benzene	0.716	2.03E-04	7.40E-02	2.03E-05
86-73-7	Fluorene	0.000	3.42E-10	1.25E-07	3.42E-11
540-84-1	2,2,4-Trimethyl Pentane	0.002	5.66E-07	2.07E-04	5.66E-08
91-20-3	Naphthalene	0.032	9.06E-06	3.31E-03	9.06E-07
92-52-4	Phenylbenzene (1,1'-biphenyl)	0.001	2.20E-07	8.05E-05	2.20E-08
129-00-0	Pyrene	0.000	9.37E-15	3.42E-12	9.37E-16
108-88-3	Toluene	2.830	8.01E-04	2.92E-01	8.01E-05
1330-20-7	Xylenes	4.690	1.33E-03	4.84E-01	1.33E-04

1 % of Aviation Fuel/Ethenol VOC emissions representing potential Jet-A residual: 2.83 lb/day

Table B-12. Ethanol Speciation (up to 5% gasoline) and Calculated Emissions

CAS	Pollutant	Wt (%)	lb/day	lb/yr	lb/hr
71-43-2	Benzene	0.060	1.70E-05	6.20E-03	1.70E-06
100-41-4	Ethyl Benzene	0.065	1.83E-05	6.66E-03	1.83E-06
110-54-3	Hexane	0.095	2.67E-05	9.76E-03	2.67E-06
91-20-3	Naphthalene	0.009	2.46E-06	8.99E-04	2.46E-07
115-07-1	Propylene (propene)	0.00001	1.73E-09	6.30E-07	1.73E-10
108-88-3	Toluene	0.282	7.97E-05	2.91E-02	7.97E-06
1330-20-7	Xylenes	0.330	9.32E-05	3.40E-02	9.32E-06

San Diego Clean Fuels Facility

Fuel Transfer Toxic Air Contaminant Speciations and Emissions

Table B-13. Total Potential Onsite Emissions assuming 1% petrolium residual and "Worst Case" Ethanol

CAS	Pollutant	Total Emissions		Emissions/ Source	
		lb/yr	lb/hr	lb/yr	lb/hr
120-12-7	Anthracene	6.19E-08	1.70E-11	2.06E-08	5.65E-12
71-43-2	Benzene	3.75E-01	1.03E-04	1.25E-01	3.42E-05
98-82-8	Cumene (Isopropylbenzene)	3.94E-02	1.08E-05	1.31E-02	3.59E-06
132-64-9	Dibenzofuran	1.35E-04	3.71E-08	4.51E-05	1.24E-08
100-41-4	Ethyl Benzene	4.14E-01	1.13E-04	1.38E-01	3.78E-05
86-73-7	Fluorene	5.90E-05	1.62E-08	1.97E-05	5.39E-09
110-54-3	Hexane	5.18E-02	1.42E-05	1.73E-02	4.73E-06
540-84-1	2,2,4-Trimethyl Pentane	2.07E-04	5.66E-08	6.89E-05	1.89E-08
91-20-3	Naphthalene	2.35E-01	6.44E-05	7.84E-02	2.15E-05
85-01-8	Phenanthrene	1.30E-05	3.56E-09	4.33E-06	1.19E-09
92-52-4	Phenylbenzene (1,1'-biphenyl)	8.05E-05	2.20E-08	2.68E-05	7.35E-09
115-07-1	Propylene (propene)	6.30E-07	1.73E-10	2.10E-07	5.75E-11
129-00-0	Pyrene	5.44E-07	1.49E-10	1.81E-07	4.97E-11
108-88-3	Toluene	2.67E+00	7.33E-04	8.92E-01	2.44E-04
1330-20-7	Xylenes	7.03E+00	1.93E-03	2.34E+00	6.42E-04

San Diego Clean Fuels Facility
Switching Activity Emissions Calculations

Table B-14. Operational Assumptions for Train Transport of Liquid Fuels			
Description	**Value**	**Units**	**Source**
Avg Distance in SDAB (Mainline)	0.9	miles	AERMOD Run
Ton-mile per Gallon	970	ton-mi/gal	https://www.bnsf.com/
Trips per Year	104	#/yr	Two times per week
Truck Days per year	365	days/yr	Project Information
Ethanol Transferred/Sustainable Aviation Fuel	126,000	gal/day	Project Information
Renewable Diesel Transferred	336,000	gal/day	Project Information
Biodiesel Transferred	84,000	gal/day	Project Information
Ethanol Transferred	45,990,000	gal/yr	Trucks/Day * Days/Year
Renewable Diesel Transferred	122,640,000	gal/yr	Trucks/Day * Days/Year
Biodiesel Transferred	30,660,000	gal/yr	Trucks/Day * Days/Year
Total Fuel Throughput per year	199,290,000	gal/yr	Sum of Fuels
Ethanol Density	6.8	lb/gal	Conversion Factor
Renewable Diesel Density	7.3	lb/gal	Conversion Factor
Biodiesel Density	7.3	lb/gal	Conversion Factor
Average Daily Material Transferred	1,961	tons/day	Process Information
Annual Mass Transferred	715,681	ton/year	Process Information

Table B-15. Calculated Operational Values for Locomotive Trips			
	Value		
Operational Value	**daily**	**annual**	**Unit**
Ton-Miles	1,765	644,113	ton-miles
Gallons Fuel Used	2	664	gallons

Table B-16. Composite Locomotive Emission Factors from CARB Vision Access Database							
	Emission Factor (g/gal transportation fuel)						
Source Type					**DPM**		
Mainline Composite					3.77		

(1) Mainline composite Utilizes a composite from the latest BNSF Financial Report (BNSF, 2020)

Equations:

1. Emissions (lb/day) = Material Weight (tons/day) * Trip Distance (mi) * / (ton-miles/gallon) / 453.6 (g/lb)
2. Annual Emissions (tons/yr) = Material Weight (tons/yr) * Trip Distance (mi) * / (ton-miles/gallon) / 453.6 (g/lb)

Table B-17. Daily Emissions from Train Transport of Clean Fuels							
	Daily Emissions (lb/hr)						
Air Basin					**DPM**		
Mainline Composite	-	-	-	-	0.002	-	-

Table B-18. Annual Emissions from Train Transport of Clean Fuels							
	Annual Emissions (tpy)						
Air Basin					**DPM**		
Mainline Composite	-	-	-	-	5.52	-	-

San Diego Clean Fuels Facility
Switching Activity Emissions Calculations

Acronyms

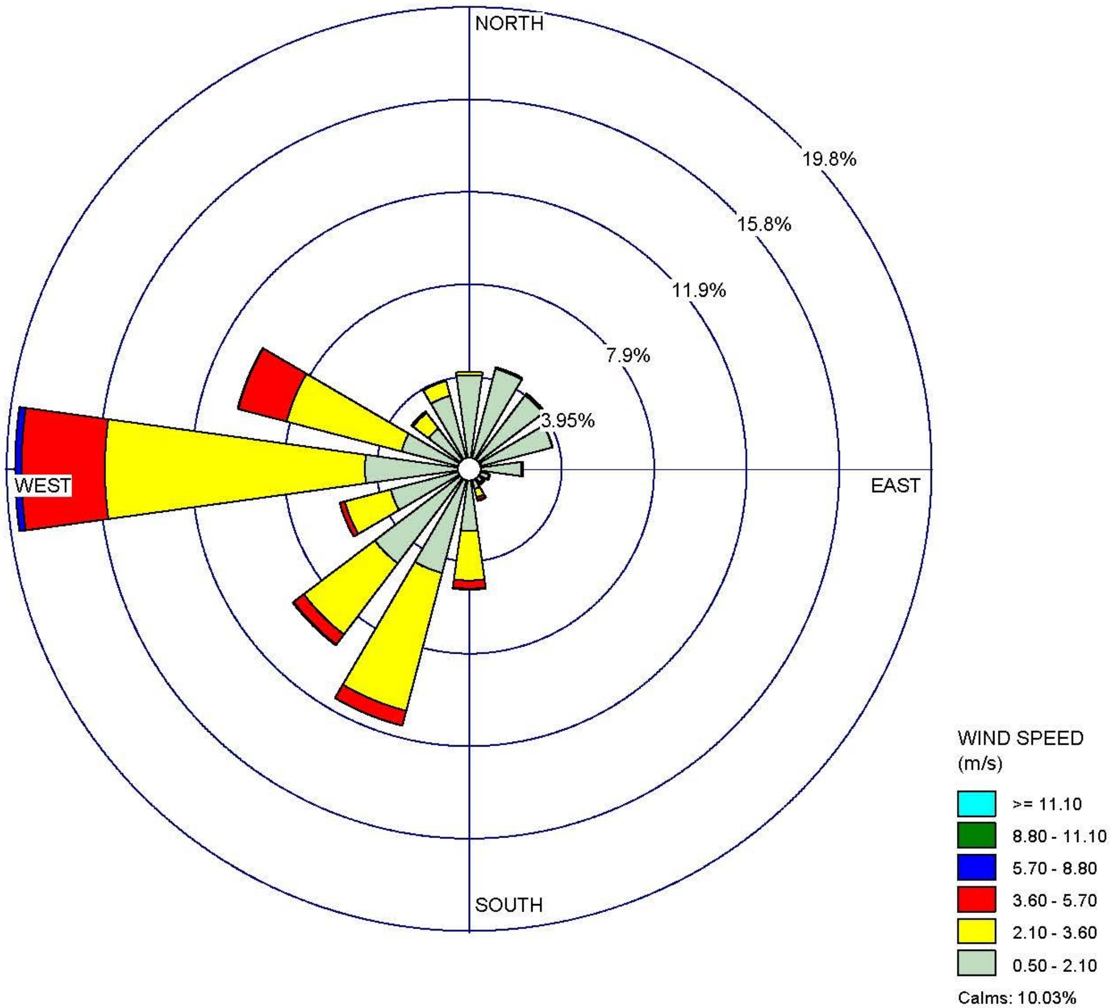
DPM	Diesel Particulate Matter	$PM_{2.5}$	PM less than 2.5 microns in diameter
g	grams	ROG	Reactive Organic Gas
g/mi	grams per mile	SDAB	San Diego Bay Air Basin
lb.	pound		
mi	mile		
PM	particulate matter		

WIND ROSE PLOT:

Perkins Elementry School

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: AERMET Processed Data	DATA PERIOD: **Start Date: 1/1/2010 - 00:00** **End Date: 12/31/2012 - 23:59**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **10.03%**	TOTAL COUNT: **26302 hrs.**	
	AVG. WIND SPEED: **1.91 m/s**	DATE: **6/17/2022**	PROJECT NO.: **2021-285**

WRPLOT View - Lakes Environmental Software

Figure B-1. PES Wind Rose (SDAPCD Data)

2021-285 San Diego Clean Fuels Terminal

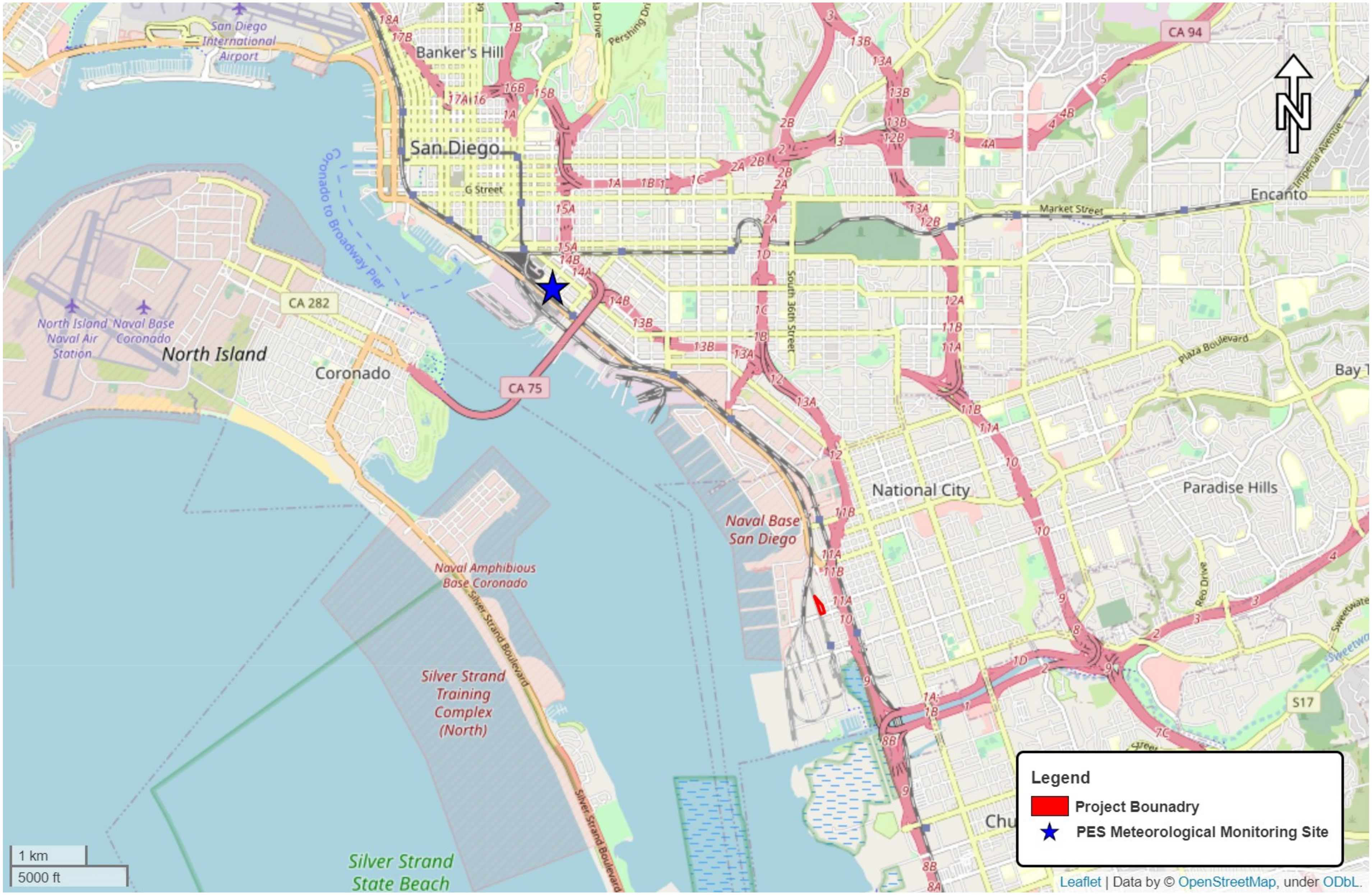


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Figure B-2. Surface Station Location

2021-285 San Diego Clean Fuels Terminal

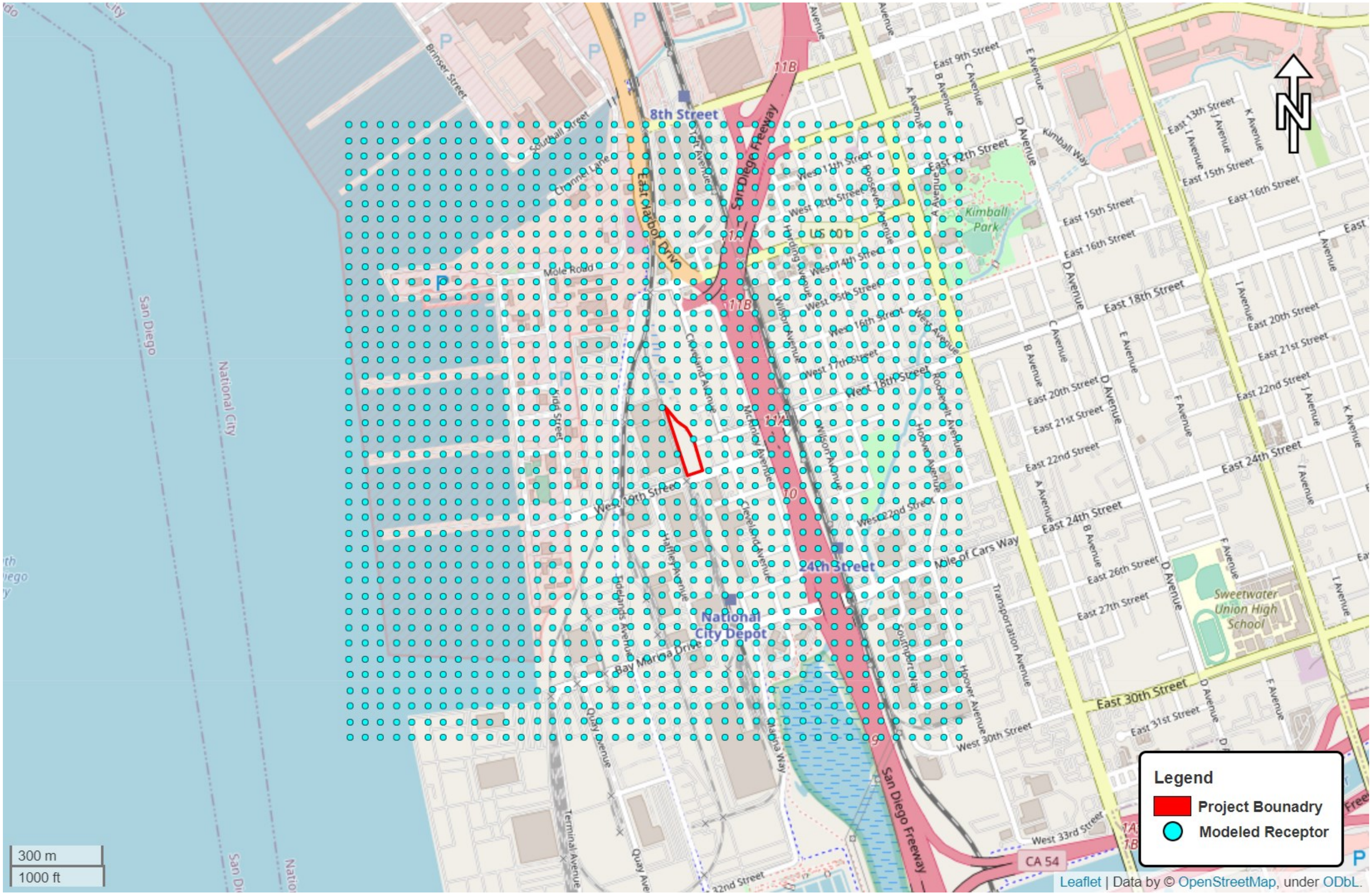

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Figure B-3. Modeled Receptor Locations

2021-285 San Diego Clean Fuels Terminal

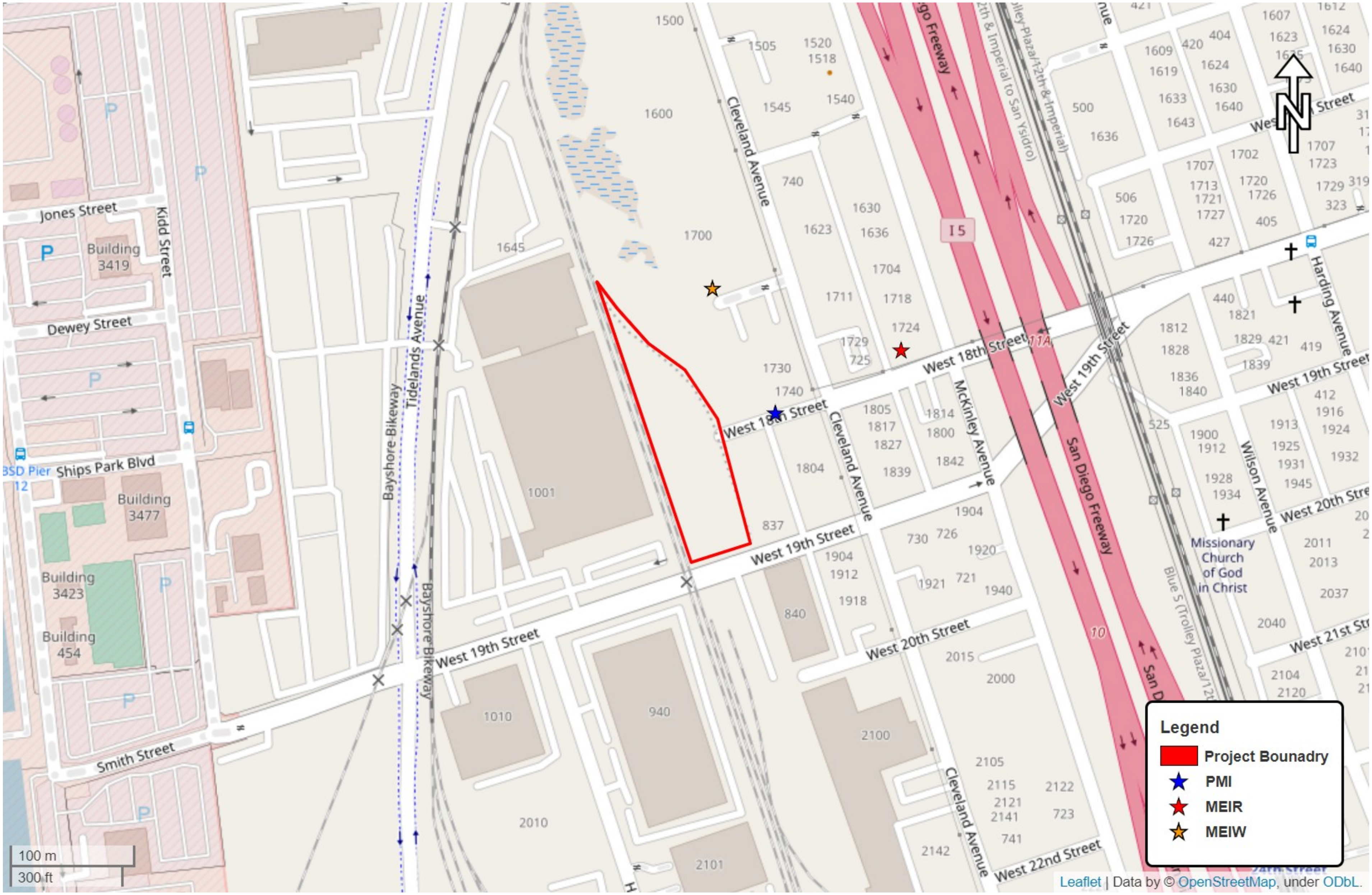

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Figure B-4. PMI, MEIR, MEIW Locations

2021-285 San Diego Clean Fuels Terminal

CONSTRUCTION HEALTH RISK ASSESSMENT CALCULATIONS

Receptor Pathway

AERMOD

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Uniform Cartesian Grid

Receptor Network ID	Grid Origin X Coordinate [m]	Grid Origin Y Coordinate [m]	No. of X-Axis Receptors	No. of Y-Axis Receptors	Spacing for X-Axis [m]	Spacing for Y-Axis [m]
UCART1	488805.30	3613564.90	21	21	75.00	75.00

Discrete Receptors

Plant Boundary Receptors

Cartesian Plant Boundary

Primary

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	489288.46	3614756.22	FENCEPRI	2.84	
2	489263.38	3614425.54	FENCEPRI	2.88	
3	489393.37	3614019.61	FENCEPRI	4.77	
4	489493.71	3614051.54	FENCEPRI	5.52	
5	489452.66	3614158.73	FENCEPRI	5.22	
6	489409.33	3614181.53	FENCEPRI	4.65	
7	489299.87	3614564.66	FENCEPRI	3.47	
8	489311.27	3614744.82	FENCEPRI	3.18	

Receptor Groups

Record Number	Group ID	Group Description
1	FENCEPRI	Cartesian plant boundary Primary Receptors

Source Pathway - Source Inputs

AERMOD

Line Volume Sources

Source Type: LINE VOLUME

Source: SLINE1 (Construction equipment)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
6.00	1.00000		489299.87	3614731.13	2.96	0.00
			489279.34	3614427.82	2.62	0.00
			489407.05	3614037.86	5.50	0.00
			489475.46	3614062.94	5.49	0.00
			489443.54	3614156.44	5.24	0.00
			489395.65	3614174.69	4.80	0.00
			489295.30	3614546.41	2.69	0.00

Source Type: LINE VOLUME

Source: SLINE2 (Haul)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
6.00	1.00000		489465.10	3614132.77	5.13	0.00
			489515.66	3614147.22	5.13	0.00
			489357.37	3614626.33	2.84	0.00
			489448.59	3614654.40	3.45	0.00
			489447.71	3614655.28	3.45	0.00

Source Pathway - Source Inputs

AERMOD

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000001	489299.66	3614728.14	3.05	0.00	0.00901	6.00		5.57	0.79
	L0000002	489298.85	3614716.20	3.02	0.00	0.00901	6.00		5.57	0.79
	L0000003	489298.05	3614704.26	3.01	0.00	0.00901	6.00		5.57	0.79
	L0000004	489297.24	3614692.32	2.97	0.00	0.00901	6.00		5.57	0.79
	L0000005	489296.43	3614680.38	2.88	0.00	0.00901	6.00		5.57	0.79
	L0000006	489295.62	3614668.44	2.81	0.00	0.00901	6.00		5.57	0.79
	L0000007	489294.82	3614656.51	2.73	0.00	0.00901	6.00		5.57	0.79
	L0000008	489294.01	3614644.57	2.77	0.00	0.00901	6.00		5.57	0.79
	L0000009	489293.20	3614632.63	2.97	0.00	0.00901	6.00		5.57	0.79
	L0000010	489292.39	3614620.69	3.02	0.00	0.00901	6.00		5.57	0.79
	L0000011	489291.58	3614608.75	3.10	0.00	0.00901	6.00		5.57	0.79
	L0000012	489290.78	3614596.81	3.21	0.00	0.00901	6.00		5.57	0.79
	L0000013	489289.97	3614584.87	3.04	0.00	0.00901	6.00		5.57	0.79
	L0000014	489289.16	3614572.93	2.94	0.00	0.00901	6.00		5.57	0.79
	L0000015	489288.35	3614560.99	2.95	0.00	0.00901	6.00		5.57	0.79
	L0000016	489287.54	3614549.05	2.95	0.00	0.00901	6.00		5.57	0.79
	L0000017	489286.74	3614537.12	2.83	0.00	0.00901	6.00		5.57	0.79
	L0000018	489285.93	3614525.18	2.50	0.00	0.00901	6.00		5.57	0.79
	L0000019	489285.12	3614513.24	2.63	0.00	0.00901	6.00		5.57	0.79
	L0000020	489284.31	3614501.30	2.75	0.00	0.00901	6.00		5.57	0.79
	L0000021	489283.50	3614489.36	2.80	0.00	0.00901	6.00		5.57	0.79
	L0000022	489282.70	3614477.42	2.76	0.00	0.00901	6.00		5.57	0.79
	L0000023	489281.89	3614465.48	2.76	0.00	0.00901	6.00		5.57	0.79
	L0000024	489281.08	3614453.54	2.58	0.00	0.00901	6.00		5.57	0.79

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000025	489280.27	3614441.60	2.60	0.00	0.00901	6.00		5.57	0.79
	L0000026	489279.47	3614429.66	2.64	0.00	0.00901	6.00		5.57	0.79
	L0000027	489282.49	3614418.20	2.62	0.00	0.00901	6.00		5.57	0.79
	L0000028	489286.22	3614406.83	2.61	0.00	0.00901	6.00		5.57	0.79
	L0000029	489289.94	3614395.46	2.79	0.00	0.00901	6.00		5.57	0.79
	L0000030	489293.66	3614384.09	2.71	0.00	0.00901	6.00		5.57	0.79
	L0000031	489297.39	3614372.72	2.63	0.00	0.00901	6.00		5.57	0.79
	L0000032	489301.11	3614361.34	2.71	0.00	0.00901	6.00		5.57	0.79
	L0000033	489304.84	3614349.97	2.52	0.00	0.00901	6.00		5.57	0.79
	L0000034	489308.56	3614338.60	2.57	0.00	0.00901	6.00		5.57	0.79
	L0000035	489312.28	3614327.23	2.73	0.00	0.00901	6.00		5.57	0.79
	L0000036	489316.01	3614315.86	2.63	0.00	0.00901	6.00		5.57	0.79
	L0000037	489319.73	3614304.48	3.16	0.00	0.00901	6.00		5.57	0.79
	L0000038	489323.46	3614293.11	3.06	0.00	0.00901	6.00		5.57	0.79
	L0000039	489327.18	3614281.74	3.34	0.00	0.00901	6.00		5.57	0.79
	L0000040	489330.91	3614270.37	3.29	0.00	0.00901	6.00		5.57	0.79
	L0000041	489334.63	3614259.00	3.60	0.00	0.00901	6.00		5.57	0.79
	L0000042	489338.35	3614247.62	3.36	0.00	0.00901	6.00		5.57	0.79
	L0000043	489342.08	3614236.25	3.66	0.00	0.00901	6.00		5.57	0.79
	L0000044	489345.80	3614224.88	3.95	0.00	0.00901	6.00		5.57	0.79
	L0000045	489349.53	3614213.51	4.16	0.00	0.00901	6.00		5.57	0.79
	L0000046	489353.25	3614202.14	4.28	0.00	0.00901	6.00		5.57	0.79
	L0000047	489356.97	3614190.76	4.35	0.00	0.00901	6.00		5.57	0.79
	L0000048	489360.70	3614179.39	4.43	0.00	0.00901	6.00		5.57	0.79
	L0000049	489364.42	3614168.02	4.58	0.00	0.00901	6.00		5.57	0.79

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000050	489368.15	3614156.65	4.43	0.00	0.00901	6.00		5.57	0.79
	L0000051	489371.87	3614145.28	4.52	0.00	0.00901	6.00		5.57	0.79
	L0000052	489375.60	3614133.90	4.57	0.00	0.00901	6.00		5.57	0.79
	L0000053	489379.32	3614122.53	4.71	0.00	0.00901	6.00		5.57	0.79
	L0000054	489383.04	3614111.16	4.76	0.00	0.00901	6.00		5.57	0.79
	L0000055	489386.77	3614099.79	4.96	0.00	0.00901	6.00		5.57	0.79
	L0000056	489390.49	3614088.42	5.30	0.00	0.00901	6.00		5.57	0.79
	L0000057	489394.22	3614077.04	5.69	0.00	0.00901	6.00		5.57	0.79
	L0000058	489397.94	3614065.67	5.18	0.00	0.00901	6.00		5.57	0.79
	L0000059	489401.66	3614054.30	5.16	0.00	0.00901	6.00		5.57	0.79
	L0000060	489405.39	3614042.93	5.30	0.00	0.00901	6.00		5.57	0.79
	L0000061	489413.28	3614040.14	5.97	0.00	0.00901	6.00		5.57	0.79
	L0000062	489424.51	3614044.26	5.38	0.00	0.00901	6.00		5.57	0.79
	L0000063	489435.74	3614048.38	5.25	0.00	0.00901	6.00		5.57	0.79
	L0000064	489446.98	3614052.50	5.18	0.00	0.00901	6.00		5.57	0.79
	L0000065	489458.21	3614056.62	5.48	0.00	0.00901	6.00		5.57	0.79
	L0000066	489469.45	3614060.74	5.55	0.00	0.00901	6.00		5.57	0.79
	L0000067	489473.67	3614068.21	5.48	0.00	0.00901	6.00		5.57	0.79
	L0000068	489469.80	3614079.53	5.47	0.00	0.00901	6.00		5.57	0.79
	L0000069	489465.93	3614090.85	5.41	0.00	0.00901	6.00		5.57	0.79
	L0000070	489462.07	3614102.18	5.31	0.00	0.00901	6.00		5.57	0.79
	L0000071	489458.20	3614113.50	5.19	0.00	0.00901	6.00		5.57	0.79
	L0000072	489454.33	3614124.83	5.12	0.00	0.00901	6.00		5.57	0.79
	L0000073	489450.47	3614136.15	5.34	0.00	0.00901	6.00		5.57	0.79
	L0000074	489446.60	3614147.48	5.32	0.00	0.00901	6.00		5.57	0.79

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000075	489441.21	3614157.33	5.16	0.00	0.00901	6.00		5.57	0.79
	L0000076	489430.03	3614161.59	4.76	0.00	0.00901	6.00		5.57	0.79
	L0000077	489418.85	3614165.85	4.71	0.00	0.00901	6.00		5.57	0.79
	L0000078	489407.66	3614170.11	4.69	0.00	0.00901	6.00		5.57	0.79
	L0000079	489396.48	3614174.37	4.64	0.00	0.00901	6.00		5.57	0.79
	L0000080	489392.76	3614185.38	4.34	0.00	0.00901	6.00		5.57	0.79
	L0000081	489389.64	3614196.93	4.07	0.00	0.00901	6.00		5.57	0.79
	L0000082	489386.52	3614208.48	3.98	0.00	0.00901	6.00		5.57	0.79
	L0000083	489383.41	3614220.04	3.46	0.00	0.00901	6.00		5.57	0.79
	L0000084	489380.29	3614231.59	3.16	0.00	0.00901	6.00		5.57	0.79
	L0000085	489377.17	3614243.14	3.03	0.00	0.00901	6.00		5.57	0.79
	L0000086	489374.05	3614254.70	2.51	0.00	0.00901	6.00		5.57	0.79
	L0000087	489370.93	3614266.25	2.70	0.00	0.00901	6.00		5.57	0.79
	L0000088	489367.81	3614277.80	2.80	0.00	0.00901	6.00		5.57	0.79
	L0000089	489364.69	3614289.35	2.84	0.00	0.00901	6.00		5.57	0.79
	L0000090	489361.58	3614300.91	2.55	0.00	0.00901	6.00		5.57	0.79
	L0000091	489358.46	3614312.46	2.20	0.00	0.00901	6.00		5.57	0.79
	L0000092	489355.34	3614324.01	2.36	0.00	0.00901	6.00		5.57	0.79
	L0000093	489352.22	3614335.56	2.97	0.00	0.00901	6.00		5.57	0.79
	L0000094	489349.10	3614347.12	2.92	0.00	0.00901	6.00		5.57	0.79
	L0000095	489345.98	3614358.67	2.98	0.00	0.00901	6.00		5.57	0.79
	L0000096	489342.86	3614370.22	3.42	0.00	0.00901	6.00		5.57	0.79
	L0000097	489339.75	3614381.78	3.02	0.00	0.00901	6.00		5.57	0.79
	L0000098	489336.63	3614393.33	2.93	0.00	0.00901	6.00		5.57	0.79
	L0000099	489333.51	3614404.88	2.71	0.00	0.00901	6.00		5.57	0.79

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000100	489330.39	3614416.43	2.60	0.00	0.00901	6.00		5.57	0.79
	L0000101	489327.27	3614427.99	2.62	0.00	0.00901	6.00		5.57	0.79
	L0000102	489324.15	3614439.54	2.62	0.00	0.00901	6.00		5.57	0.79
	L0000103	489321.03	3614451.09	2.70	0.00	0.00901	6.00		5.57	0.79
	L0000104	489317.92	3614462.65	2.61	0.00	0.00901	6.00		5.57	0.79
	L0000105	489314.80	3614474.20	2.55	0.00	0.00901	6.00		5.57	0.79
	L0000106	489311.68	3614485.75	2.52	0.00	0.00901	6.00		5.57	0.79
	L0000107	489308.56	3614497.30	2.83	0.00	0.00901	6.00		5.57	0.79
	L0000108	489305.44	3614508.86	2.53	0.00	0.00901	6.00		5.57	0.79
	L0000109	489302.32	3614520.41	2.43	0.00	0.00901	6.00		5.57	0.79
	L0000110	489299.20	3614531.96	2.49	0.00	0.00901	6.00		5.57	0.79
	L0000111	489296.09	3614543.51	2.75	0.00	0.00901	6.00		5.57	0.79

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000112	489467.98	3614133.59	5.11	0.00	0.01818	6.00		5.58	0.79
	L0000113	489479.52	3614136.89	5.03	0.00	0.01818	6.00		5.58	0.79
	L0000114	489491.05	3614140.19	5.12	0.00	0.01818	6.00		5.58	0.79
	L0000115	489502.59	3614143.48	5.01	0.00	0.01818	6.00		5.58	0.79
	L0000116	489514.13	3614146.78	5.07	0.00	0.01818	6.00		5.58	0.79
	L0000117	489512.40	3614157.09	5.01	0.00	0.01818	6.00		5.58	0.79
	L0000118	489508.63	3614168.48	4.97	0.00	0.01818	6.00		5.58	0.79
	L0000119	489504.87	3614179.88	4.84	0.00	0.01818	6.00		5.58	0.79
	L0000120	489501.11	3614191.27	4.82	0.00	0.01818	6.00		5.58	0.79
	L0000121	489497.34	3614202.66	4.76	0.00	0.01818	6.00		5.58	0.79
	L0000122	489493.58	3614214.05	4.66	0.00	0.01818	6.00		5.58	0.79

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000123	489489.82	3614225.44	4.61	0.00	0.01818	6.00		5.58	0.79
	L0000124	489486.05	3614236.83	4.44	0.00	0.01818	6.00		5.58	0.79
	L0000125	489482.29	3614248.23	4.40	0.00	0.01818	6.00		5.58	0.79
	L0000126	489478.53	3614259.62	4.32	0.00	0.01818	6.00		5.58	0.79
	L0000127	489474.76	3614271.01	4.27	0.00	0.01818	6.00		5.58	0.79
	L0000128	489471.00	3614282.40	4.14	0.00	0.01818	6.00		5.58	0.79
	L0000129	489467.23	3614293.79	3.99	0.00	0.01818	6.00		5.58	0.79
	L0000130	489463.47	3614305.18	3.98	0.00	0.01818	6.00		5.58	0.79
	L0000131	489459.71	3614316.58	3.85	0.00	0.01818	6.00		5.58	0.79
	L0000132	489455.94	3614327.97	3.81	0.00	0.01818	6.00		5.58	0.79
	L0000133	489452.18	3614339.36	3.74	0.00	0.01818	6.00		5.58	0.79
	L0000134	489448.42	3614350.75	3.70	0.00	0.01818	6.00		5.58	0.79
	L0000135	489444.65	3614362.14	3.65	0.00	0.01818	6.00		5.58	0.79
	L0000136	489440.89	3614373.53	3.60	0.00	0.01818	6.00		5.58	0.79
	L0000137	489437.12	3614384.93	3.60	0.00	0.01818	6.00		5.58	0.79
	L0000138	489433.36	3614396.32	3.50	0.00	0.01818	6.00		5.58	0.79
	L0000139	489429.60	3614407.71	3.50	0.00	0.01818	6.00		5.58	0.79
	L0000140	489425.83	3614419.10	3.39	0.00	0.01818	6.00		5.58	0.79
	L0000141	489422.07	3614430.49	3.40	0.00	0.01818	6.00		5.58	0.79
	L0000142	489418.31	3614441.88	3.38	0.00	0.01818	6.00		5.58	0.79
	L0000143	489414.54	3614453.28	3.30	0.00	0.01818	6.00		5.58	0.79
	L0000144	489410.78	3614464.67	3.29	0.00	0.01818	6.00		5.58	0.79
	L0000145	489407.01	3614476.06	3.23	0.00	0.01818	6.00		5.58	0.79
	L0000146	489403.25	3614487.45	3.22	0.00	0.01818	6.00		5.58	0.79
	L0000147	489399.49	3614498.84	3.10	0.00	0.01818	6.00		5.58	0.79

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000148	489395.72	3614510.24	3.13	0.00	0.01818	6.00		5.58	0.79
	L0000149	489391.96	3614521.63	3.08	0.00	0.01818	6.00		5.58	0.79
	L0000150	489388.20	3614533.02	3.04	0.00	0.01818	6.00		5.58	0.79
	L0000151	489384.43	3614544.41	3.01	0.00	0.01818	6.00		5.58	0.79
	L0000152	489380.67	3614555.80	2.93	0.00	0.01818	6.00		5.58	0.79
	L0000153	489376.91	3614567.19	2.93	0.00	0.01818	6.00		5.58	0.79
	L0000154	489373.14	3614578.59	2.87	0.00	0.01818	6.00		5.58	0.79
	L0000155	489369.38	3614589.98	2.87	0.00	0.01818	6.00		5.58	0.79
	L0000156	489365.61	3614601.37	2.73	0.00	0.01818	6.00		5.58	0.79
	L0000157	489361.85	3614612.76	2.88	0.00	0.01818	6.00		5.58	0.79
	L0000158	489358.09	3614624.15	2.87	0.00	0.01818	6.00		5.58	0.79
	L0000159	489366.64	3614629.19	2.85	0.00	0.01818	6.00		5.58	0.79
	L0000160	489378.10	3614632.71	2.88	0.00	0.01818	6.00		5.58	0.79
	L0000161	489389.57	3614636.24	2.96	0.00	0.01818	6.00		5.58	0.79
	L0000162	489401.04	3614639.77	2.97	0.00	0.01818	6.00		5.58	0.79
	L0000163	489412.50	3614643.30	3.23	0.00	0.01818	6.00		5.58	0.79
	L0000164	489423.97	3614646.83	3.42	0.00	0.01818	6.00		5.58	0.79
	L0000165	489435.44	3614650.36	3.44	0.00	0.01818	6.00		5.58	0.79
	L0000166	489446.91	3614653.88	3.43	0.00	0.01818	6.00		5.58	0.79

Meteorology Pathway

AERMOD

Met Input Data

Surface Met Data

Filename: C:\Users\smyers\Desktop\Met Data files\Perkins Elementary School - National City\PES_2010_2012_sigma_

Format Type: Default AERMET format

Profile Met Data

Filename: C:\Users\smyers\Desktop\Met Data files\Perkins Elementary School - National City\PES_2010_2012_sigma_

Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 10.00 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2010			SAN DIEGO/LINDBERGH FIELD
Upper Air		2010			
On-Site		2010			

Data Period

Data Period to Process

Start Date: 1/1/2010 Start Hour: 1 End Date: 12/31/2012 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Source Pathway

AERMOD

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID	List of Sources in Group (Source Range or Single Sources)
SLINE2	SLINE2
SLINE1	SLINE1
ALL	All Sources Included

Results Summary

C:\Lakes\AERMOD View\San Diego Clean Fuels Terminal LLC Project\San

PM10 - Concentration - Source Group: ALL

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1191.40347	ug/m^3	489405.30	3614464.90	3.20	0.00	3.20	11/17/2012, 19
24-HR	1ST	436.16962	ug/m^3	489405.30	3614539.90	3.00	0.00	3.00	1/22/2011, 24
ANNUAL		291.37200	ug/m^3	489405.30	3614539.90	3.00	0.00	3.00	

PM10 - Concentration - Source Group: SLINE1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	738.59712	ug/m^3	489299.87	3614564.66	3.47	0.00	3.47	10/2/2012, 21
24-HR	1ST	358.59589	ug/m^3	489330.30	3614314.90	2.20	0.00	2.20	1/22/2011, 24
ANNUAL		239.32727	ug/m^3	489330.30	3614314.90	2.20	0.00	2.20	

PM10 - Concentration - Source Group: SLINE2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	1166.02205	ug/m^3	489405.30	3614464.90	3.20	0.00	3.20	11/17/2012, 19
24-HR	1ST	378.66920	ug/m^3	489405.30	3614539.90	3.00	0.00	3.00	1/22/2011, 24
ANNUAL		252.98225	ug/m^3	489405.30	3614539.90	3.00	0.00	3.00	

Table B-19. Modeled Roadway Dimensions

Roadway Link Description	AERMOD ID	Length (miles)	Width (m)	Area (m^2)
Onsite	SLINE1	0.82	3.7	4,882.74
18th St to Cleveland Ave to Civic Cener Drive	SLINE2	0.40	3.7	2,381.82

Notes: All roadways modeled with standard 3.7 meter width per lane.

Table B-20. Total Haul and Vendor Trip Information

Trip Type	Trips/Day
Duty Trucks (Vendor and Hauling)	15

Note: Construction trips taken from the phase with the highest vendor (building construction) and hauling (grading/site preparation) truck trips.

Table B-21. Modeled Roadway Trip Information

	Truck Trips		
Roadway Link	Percentage Total Trips	Hourly	Average Daily
18th St to Cleveland Ave to Civic Cener Drive	100%	1.9	15
Onsite	100%	1.9	15

Notes: Offsite truck travel assumed from the Project's Transportation Analysis

Table B-22. Onroad DPM Emission Rates

	DPM Emission Rates[1] (g/mi)					
Vehicle Type	Idle[2]	5 mph	15 mph	35 mph	Onsite Composite[4]	Offsite Composite[5]
HHDT	0.017	0.015	0.001	0.008	0.004	0.008
Composite[3]	0.017	0.015	0.001	0.008	0.004	0.008

(1) EMFAC2021 PM10 2023 exhaust emission factors for San Diego County Heavy Duty Trucks.
(2) Idle emission rates in grams per minute.
(3) Vender diesel vehicle fleet mix estimated at 100% HHDT
(4) Onsite Composite factor is 85% @ 15 mph + 15% @ 5 mph + 1 minute idle per mile
(5) Offsite Composite factor is 80% @ 45 mph + 10% @ 15 mph + 10% @ 5 mph + .1 minute idle per mile

Table B-23. Modeled Roadway Emission Rates

	DPM Emissions[1,2]	
Roadway Link	**Peak Hourly (lbs/hr)**	**Annual (lbs/yr)**
18th St to Cleveland Ave to Civic Cener Drive	0.0000	0.0120
Onsite	0.0000	0.0247

(1) Peak Hourly Emissions = DPM Emission Rate (g/mi) * Peak Hourly Trips * Link Length (mi) / 453.6 (g/lb)
(2) Annual Emissions = DPM Emission Rate (g/mi) * Daily Trips * Link Length (mi) * 365 (days/yr) / 453.6 (g/lb)

Fremont Clean Fuels Terminal
Construction Emission Calculations

TableB-24. Construction Phase Information

Phase Name	Start Date	End Date
Site Preperation	3/1/2024	5/23/2024
Grading	5/24/2024	8/15/2024
Paving	8/16/2024	11/7/2024
Architectural Coating	8/16/2024	11/7/2024

Source: CalEEMod

Table B-25. Construction Offroad Equipment List

Phase Name	Equipment Type	Amount	Usage Hours	Load
Site Preparation	Rubber Tired Dozers	3	8	0.4
Site Preparation	Tractors/Loaders/Backhoes	4	8	0.37
Grading	Graders	1	8	0.41
Grading	Excavators	1	8	0.38
Grading	Tractors/Loaders/Backhoes	3	8	0.37
Grading	Rubber Tired Dozers	1	8	0.4
Paving	Pavers	2	8	0.42
Paving	Paving Equipment	2	8	0.36
Paving	Rollers	2	8	0.38
Architectural Coating	Air Compressors	1	6	0.48

Source: CalEEMod - Annual Onsite Construction Equipment

Fremont Clean Fuels Terminal
Construction Emission Calculations

Table B-26. Annual Onsite Offroad DPM Exhaust Construction Emissions by Phase

	Emissions (tons/yr)	
Phase	**2024**	**Total (tons)**
Site Preparation	0.0500	0.0500
Grading	0.0300	0.0300
Paving	0.0100	0.0100
Architectural Coating	0.0050	0.0050
Annual DPM Emissions	**0.1513**	**0.1513**

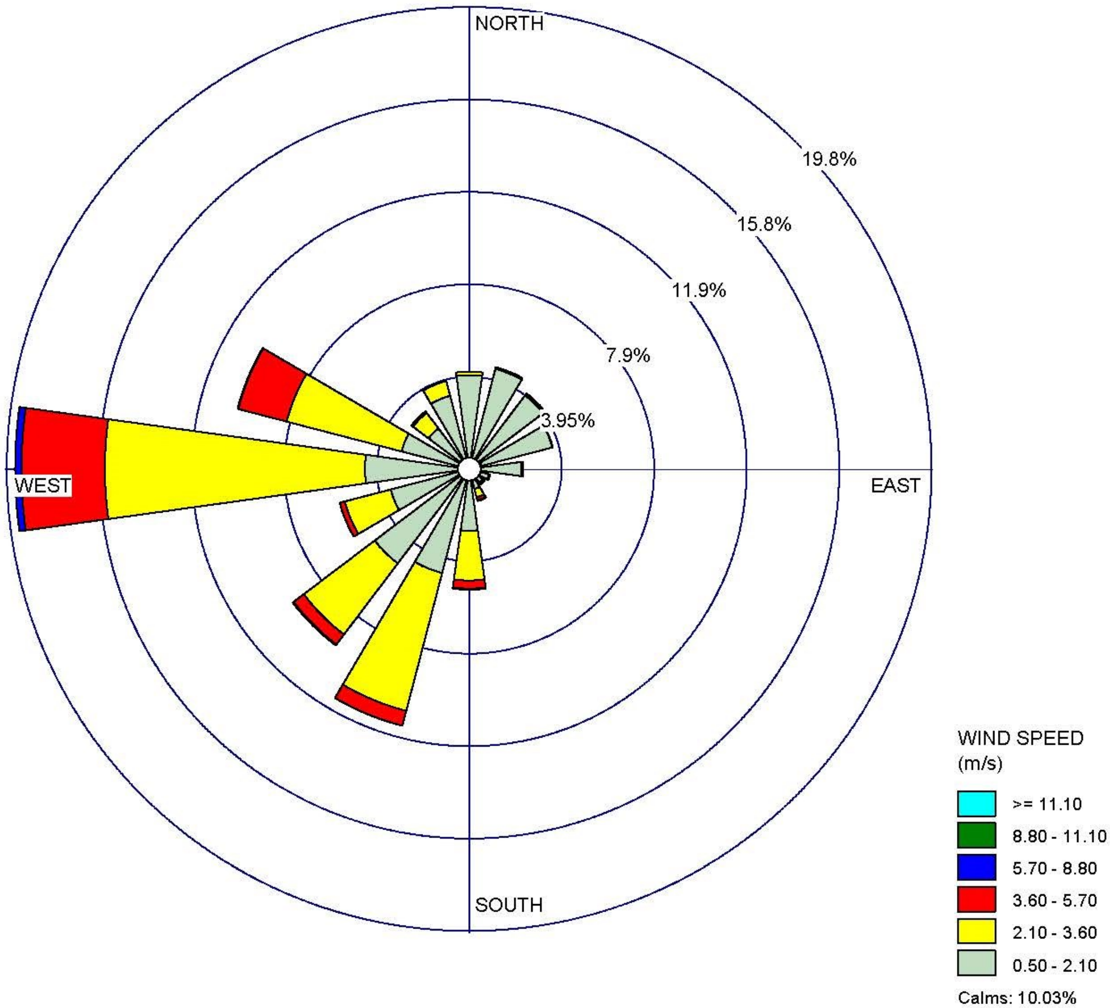
Source: CalEEMod - Annual onsite PM10 exhaust total emissions

WIND ROSE PLOT:

Perkins Elementry School

DISPLAY:

Wind Speed
Direction (blowing from)



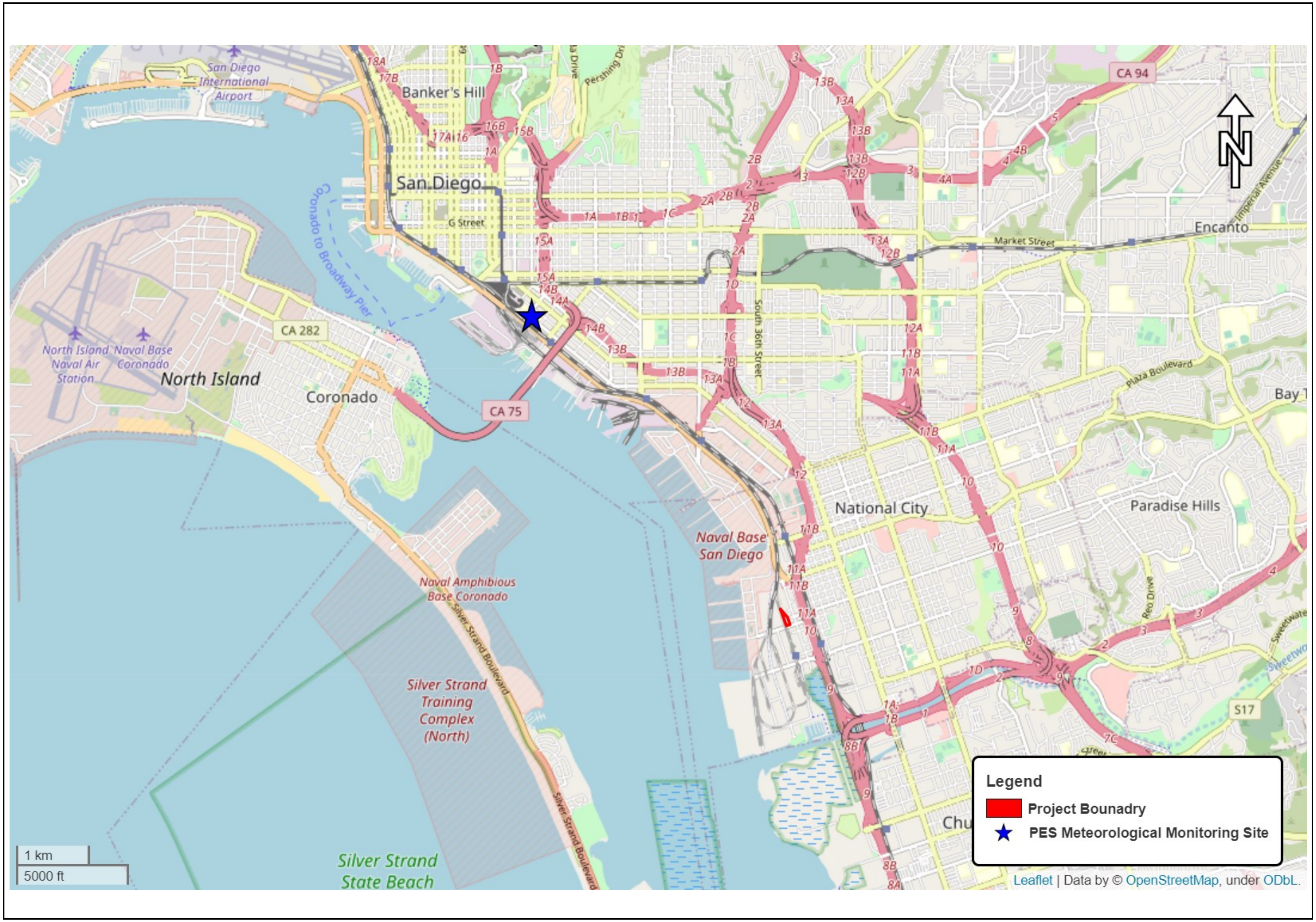
COMMENTS:	DATA PERIOD:	COMPANY NAME:	
AERMET Processed Data	**Start Date: 1/1/2010 - 00:00** **End Date: 12/31/2012 - 23:59**		
		MODELER:	
	CALM WINDS: **10.03%**	TOTAL COUNT: **26302 hrs.**	
	AVG. WIND SPEED: **1.91 m/s**	DATE: **6/17/2022**	PROJECT NO.: **2021-285**

WRPLOT View - Lakes Environmental Software

Figure B-1. PES Wind Rose (SDAPCD Data)

2021-285 San Diego Clean Fuels Terminal

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure B-2. Surface Station Location

2021-285 San Diego Clean Fuels Terminal

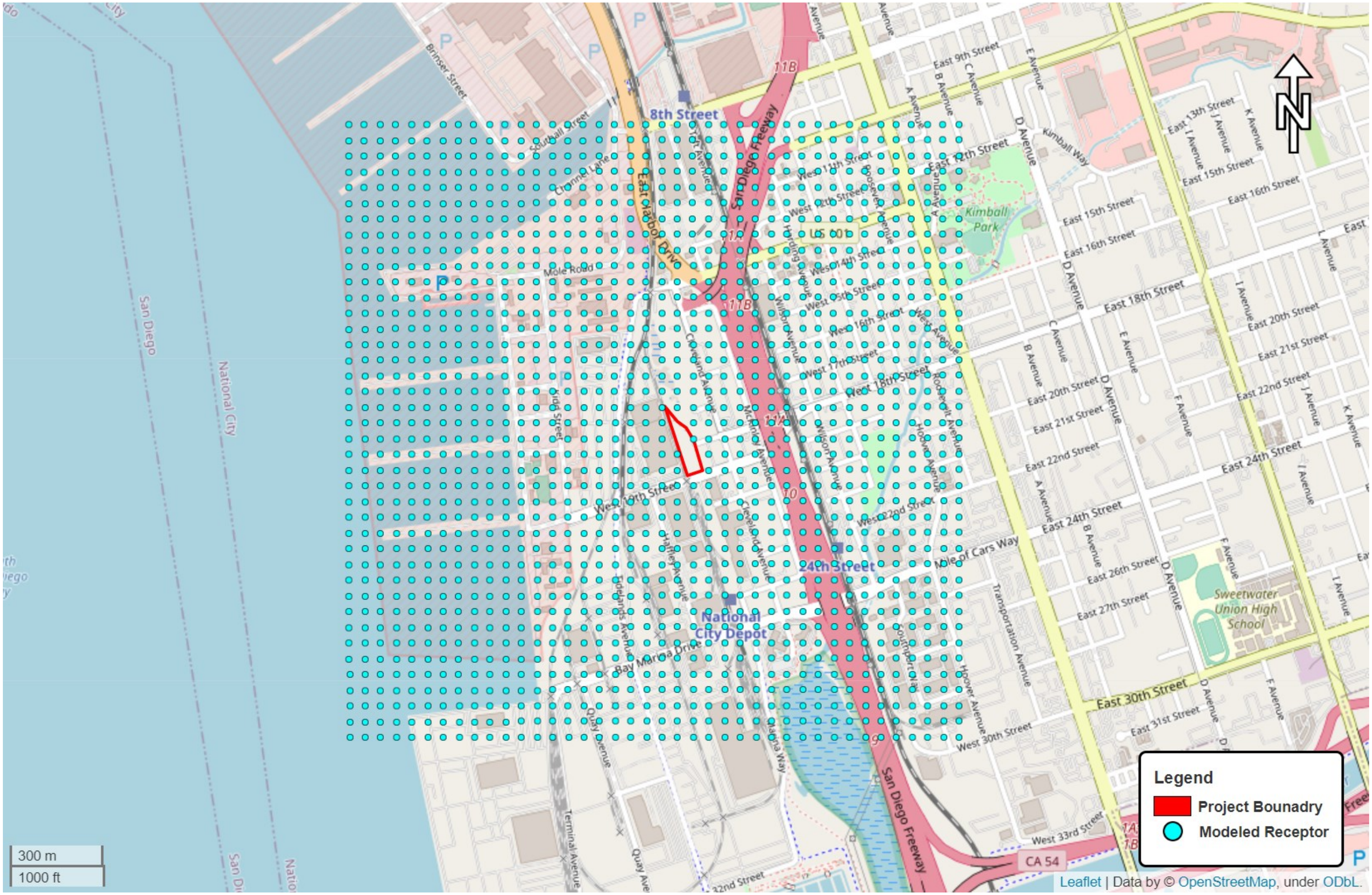
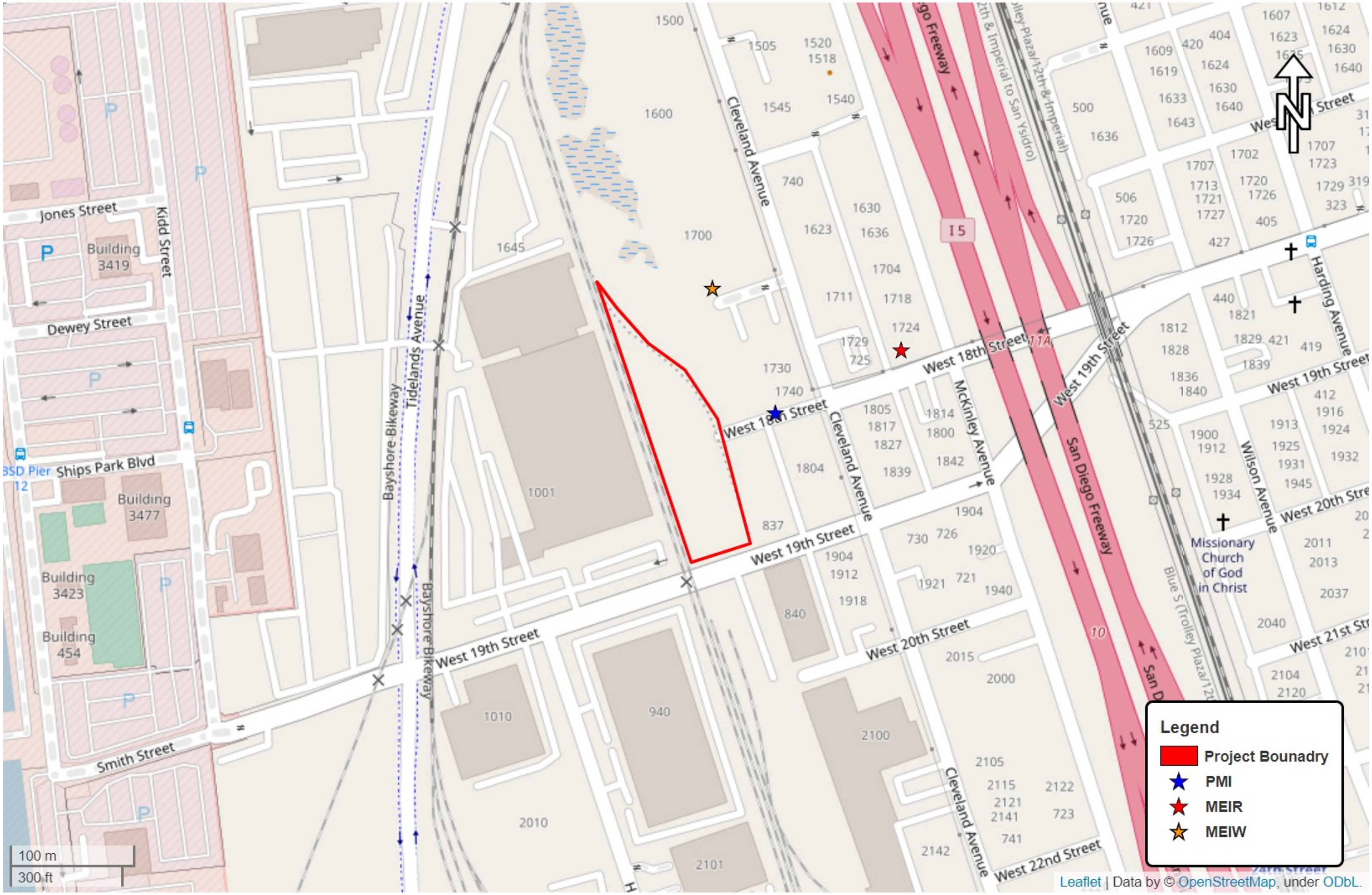


Figure B-3. Modeled Receptor Locations

2021-285 San Diego Clean Fuels Terminal



ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure B-4. PMI, MEIR, MEIW Locations

2021-285 San Diego Clean Fuels Terminal