

AIR QUALITY ASSESSMENT

Valley Center Storage Project San Diego County, CA

Prepared for:

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LIST OF COMMON ACRONYMS

Battery Energy Storage System (BESS)
California Air Resource Board (CARB)
California Ambient Air Quality Standards (CAAQS)
California Environmental Quality Act (CEQA)
Carbon Monoxide (CO)
Carbon Dioxide (CO₂)
Diesel Particulate Matter (DPM)
Environmental Protection Agency (EPA)
Hydrogen Sulfide (H₂S)
Level of Service (LOS)
Low Carbon Fuel Standard (LCFS)
National ambient air quality standards (NAAQS)
Nitrogen Dioxide (NO₂)
Ozone (O₃)
Reactive Organic Gas (ROG)
Regional Air Quality Strategy (RAQS)
San Diego Air Basin (SDAB)
San Diego Air Pollution Control District (SDAPCD)
San Diego County (County)
South Coast Air Quality Management District (SCAQMD)
State Implementation Plan (SIP)
Valley Center Storage Project (Project)
Volatile Organic Compounds (VOC)

EXECUTIVE SUMMARY

This air quality assessment has been completed to determine potential air quality impacts associated with construction and operation of the Valley Center Storage Project (Project). The Project site is a lithium-ion based battery energy storage facility capable of delivering up to 140 megawatts (MW) for approximately 4 hours on an 8.93-acre parcel and associated utility and access easement in the unincorporated community of Valley Center in San Diego County. The Project will interconnect to the existing, adjacent San Diego Gas & Electric (SDG&E) 69kV Valley Center Substation via an approximately 0.3-mile underground generation tie line.

Construction of the Project is anticipated to begin in 2020 with commencement of Project operations in 2021. The Project was found to have a potential to create significant health risk impacts from diesel exhaust during construction without the application of Toxics-Best Available Control Technology (T-BACT). Based on this analysis, with use of Tier 4 equipment during construction (considered T-BACT) as a mitigation requirement, the Project would generate less than significant air quality impacts and no criteria pollution impacts would be expected from Project construction.

The Project would likely generate short-term odors from temporary construction equipment. Thus, no significant odor impacts would be expected from construction activities. Also, the Project would not produce long-term operational odors.

The Project would generate periodic operations and maintenance visits (2 to 4 vehicle visits per month) and would use limited amounts of energy from the Project auxiliary equipment, such as battery energy storage system (BESS) HVAC units, communications equipment and lighting. These emissions were found to be below screening level thresholds within the San Diego County Guidelines for Determining Significance for Air Quality (County of San Diego, 2007). Furthermore, the Project is consistent with the General Plan category and zoning for the Project site. As a result, the Project has been accounted for in the County's General plan and this analysis has determined that no cumulative operational air quality impacts are anticipated and the Project is consistent with the Regional Air Quality Strategy (RAQS) and State Implementation Plan (SIP).

1.0 INTRODUCTION

1.1 Purpose of this Assessment

The purpose of this Air Quality Assessment is to determine potential air quality impacts (if any) that may be created during construction or operation of the proposed Valley Center Storage Project (Project), located in the unincorporated Valley Center area in northwestern San Diego County. Should the potential for air quality impacts be identified, the intent of this assessment would be to recommend mitigation measures, which would reduce those impacts to a level of insignificance.

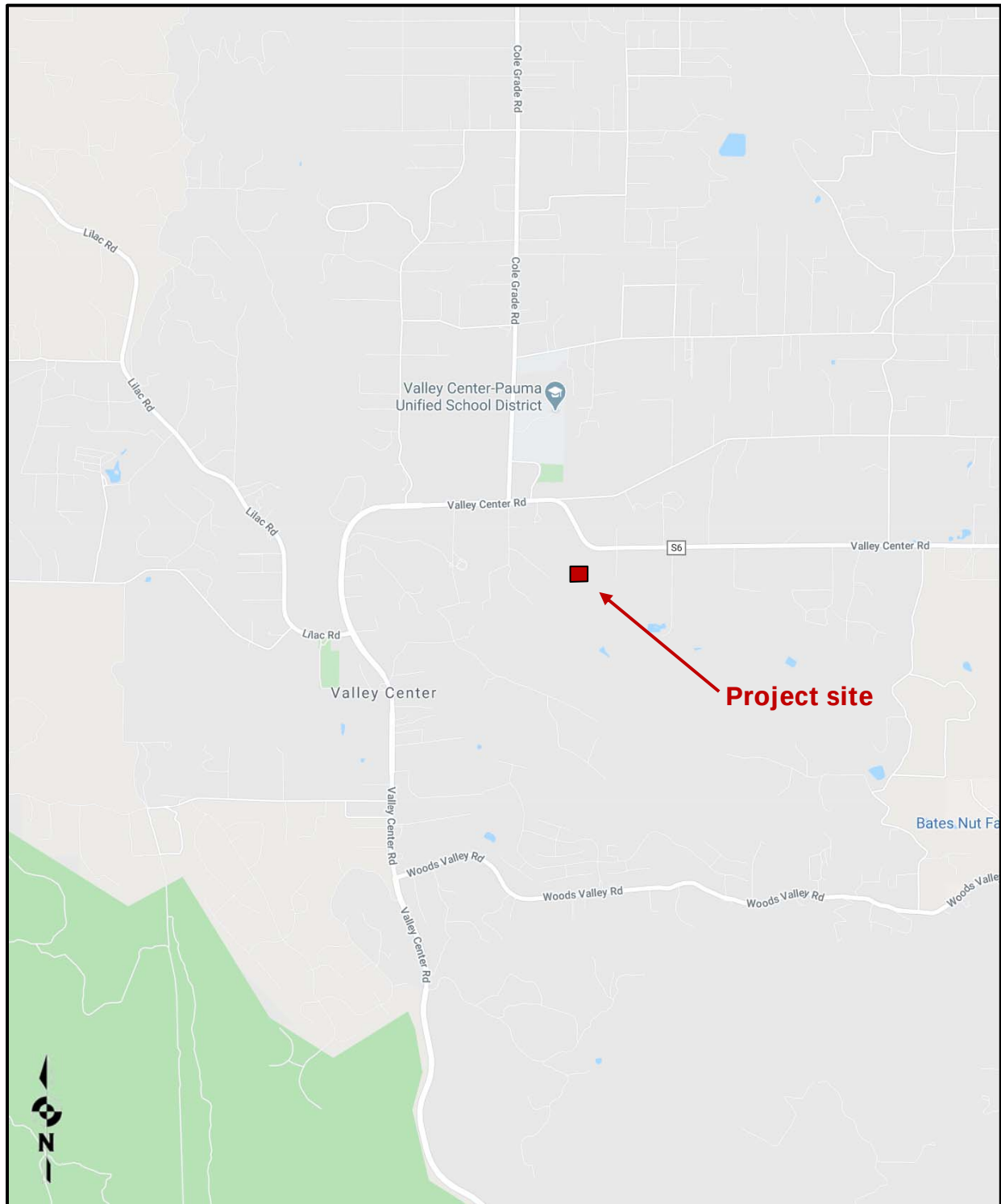
1.2 Project Location

The Project site is located at 29523 Valley Center Road, Valley Center, California on a parcel of private land (APN 189-013-20-00) within unincorporated Valley Center in San Diego County (Figure 1-A). San Diego County (County) identifies land use and zoning of the Project site as Medium Impact Industrial (I-2) and General Impact Industrial (M54) use regulation. Permitted uses in the Medium Impact Industrial zone are manufacturing, processing, and assembly; warehousing and distribution; large equipment supply and sales; and other industrial or commercial activities. The M54 use regulation allows for unenclosed commercial and industrial operations having potential nuisance characteristics such as construction, sales and services. The County of San Diego has identified the Project as a Minor Impact Utility, defined as public utilities which have a local impact on surrounding properties and are necessary to provide essential services. All Minor Impact Utilities, including the Project, are permitted by right within the M54 use regulation (County of San Diego Zoning Ordinance).

Additionally, the Project Area is located in an area under County Special Area Regulations, Designator B: Community Design Review Area, where visual impacts criteria must be met through a limited Site Plan approval process. These regulations are intended to ensure that added consideration is provided to visual impacts in areas of special interest. Surrounding land uses include Limited Impact Industrial to the north, Semi-Rural Residential (SR-4 and SR-2) to the east and south, and Medium Impact Industrial to the west.

The Project site is defined as the 8.93-acre parcel and the Project-controlled access easement. The Project Area is described as the Project site and the off-site underground gen-tie line alignment.

Figure 1-A: Project Vicinity Map



Source: (Google, 2020)

1.3 Project Description

Valley Center ESS, LLC (Developer) plans to construct, own and operate the Valley Center Storage Project, a lithium-ion based battery energy storage facility capable of delivering up to 140 megawatts (MW) for approximately 4 hours on an 8.93-acre parcel and associated utility and access easement in Valley Center, San Diego County (the Project). The Project will interconnect to the existing, adjacent San Diego Gas & Electric (SDG&E) 69kV Valley Center Substation via an approximately 0.3-mile underground generation tie line (gen-tie line). The Project will be comprised of sets of four battery enclosures (each enclosure approximately 31.6 feet long by 5.7 feet wide by 8.6 feet high) that will house the integrated Battery Energy Storage System (BESS) including battery cells, modules, racks, a fully integrated fire and safety systems, HVAC systems, and other electrical systems. The batteries will be charged from the California Independent System Operator (CASIO) grid via the Project's interconnection to the SDG&E Valley Center Substation. Energy stored in the Project will then be discharged back into the grid when the energy is needed, providing essential electricity reliability services to the local area. The Project plans to start construction in the fourth quarter of 2020 and begin operations by August 1, 2021. For the purposes of this report, a construction duration of 6 months was estimated by the Developer.

The Project will be comprised of lithium ion battery modules housed in cabinets within up to 58 sets of 4 non-walk-in enclosures on dedicated foundations that will be capable of charging and delivering up to 140MW for approximately 4 hours. Each enclosure will contain integrated battery, heat/fire and safety management systems including electrical and mechanical controls, ventilation systems, HVAC, fire alarm detection and heat management systems. From the BESS containers, low voltage cables will connect to low profile, pad-inverter/transformers located adjacent to the BESS units, and to a control center enclosure called a Power Distribution Center (PDC).

Major Project equipment and facilities include:

- Up to 58 sets of 4 BESS enclosures including battery modules and integrated battery, fire and safety management systems.
- Up to 58 pad-mounted inverter/transformers located adjacent to each set of BESS enclosures to convert direct current into alternative current and step the units' voltage up to 34.5 kV.
- 2 PDC enclosures which are modular electrical equipment enclosures housing energy management systems, communications/SCADA equipment, and other electrical equipment.
- A BSU (Battery Step-Up Transformer), circuits will enter the BSU from the PDC at 34.5 kV where voltage will be stepped up to 69kV.

- An approximately 0.3-mile 69kV gen-tie line will be constructed from the Project BSU north across Valley Center Road to SDG&E 69kV Valley Center Substation across one of four alignment options (described further below).
- Security lighting and fencing
- Stormwater drainage and retention basins
- Signage

The exact size and quantity of the battery storage containers and inverter transformers may vary depending on the battery and BESS manufacturer(s) selected for the Project though the sizing and capacity and construction intensity will remain the same.

Access to the Project site is provided from Valley Center Road via a permanent Project-controlled easement. The site access road will comply with County regulations and be stabilized using gravel in order to provide access to operational, fire department, and emergency vehicle access to the facility. Project site equipment and facilities (with the exception of stormwater drainage and retention basins) will be surrounded by a solid, 8-foot tall vinyl fence or a similar solid fence. The fence will be built flush with the ground and have the appearance of a paneled wood fence. Existing fences surrounding the property boundary will remain. Project design will adhere to County Guidelines, including the Valley Center Design Guidelines. Lighting at the Project site will be installed per County requirements.

The Project will be un-maned during operations, with no buildings or parking areas. The Project would not require restroom facilities. Any operational water that may be required for routine maintenance would be sourced by Valley Center Municipal Water District (VCMWD) service through use of an existing fire hydrant adjacent to the site and/or a new fire hydrant onsite. No groundwater would be used for any purposes during construction or operational phases of the Project.

The Project will interconnect to the existing, adjacent SDG&E 69kV Valley Center Substation via a Project-constructed underground gen-tie line that, upon leaving the Project site will cross Valley Center Road heading north onto SDG&E property for approximately 0.3 miles. Four alignment options are being considered and evaluated for the gen-tie line (Figure 1-B). All four options leave the Project site access easement, cross under Valley Center Road and then:

- Option A: enters SDG&E's property and heads north, adjacent to existing SDG&E underground circuits within SDG&E's property and enters the substation at the point of interconnect.
- Option B: enters SDG&E's property following Option A, but travels across the property in a northwesterly direction until reaching the substation.

- Option C: follows the southern and western property boundaries within SDG&E's property until turning easterly to access the substation from the west.
- Option D: follows the west-bound Valley Center Road right-of-way before entering SDG&E's property, following Option C in the easterly direction to access the substation.

All four options are approximately the same length. Figure 1-B depicts the Project site including the preliminary alignment options for the gen-tie line to the substation. Figure 1-C shows the preliminary layout of the facility on the Project site.

The Project will be operated, monitored and dispatched remotely on a day-to-day basis. Crews of two to four person's will periodically visit the site (approximately twice per month) for routine inspection and maintenance of the facilities and site. The Developer will own and maintain the gen-tie line up to the point where the gen-tie line enters SDG&E property, where ownership and maintenance responsibilities will be transferred to SDG&E.

The facility is anticipated to have a Project life of approximately 30 years. At the end of the Project life, most of the Project's enclosures, batteries, and electrical equipment (breakers, transformers, inverters) would be removed and recycled. Equipment foundations and pads would be demolished and removed.

1.4 Project Construction

Project construction includes site preparation and grading, installation of drainage and retention basins, foundations/supports, setting battery enclosures, wiring and electrical system installation, and assembly of the accessory components including inverter transformers and generation step-up transformers. The Project would require the grading of approximately 3,000 cubic yards of soils, balanced on site (no net import or export). The approximately 0.3-mile gen-tie line will be installed underground by the Project to the SDG&E 69kV Valley Center substation.

In accordance with the County Noise Ordinance, Project construction will occur between the hours of 7:00AM and 7:00PM Monday through Saturday. Construction of the Project is anticipated to occur over approximately 6 months, beginning as early as fourth quarter 2020. Project construction would likely occur in two phases:

- Phase 1 (Outside Flood Plain) – Installation of battery storage enclosures and associated civil, electrical and structural features to include graveled access roads and underground electrical components.

- Phase 2 (Inside Flood Plain) – Installation of remaining battery storage enclosures and associated civil, electrical and structural features to include features, such as pad-mounted switchgear, step-up transformer(s), and a control center enclosure.

The two construction phases would likely be executed consecutively; Phase 1 followed by Phase 2. However, for the purposes of preparing a worst-case CEQA analysis, this analysis was completed assuming the two construction phases would occur simultaneously over a period of approximately 6 months.

The sequence of construction activities for the BESS would generally occur as follows (with activities limited within the floodplain as described in Phase 1 and Phase 2 above):

1. Equipment staging and mobilization
2. Site preparation and grading
3. Preparation of equipment foundations
4. Site compaction and gravel as necessary
5. Excavating footings and pads
6. Pour-in-place concrete footings, pad foundations, and/or piers
7. Install below-ground conduit banks
8. Install PCS, power distribution systems, and pad-mounted transformers
9. Install below-ground and above-ground conduit
10. Install safety features, permanent fencing and security lighting
11. Commissioning

Construction Personnel and Equipment

Construction personnel are expected to consist of approximately 10 to 15 workers on average, depending on the construction activities. Project laydown and construction staff parking is expected to be located on-site to the extent practicable. The Project may need to utilize an offsite temporary use area, up to approximately 2 acres in size, for equipment storage during construction. Should it be needed, the temporary use area would be located within 2 miles of the Project site, on a site that has been previously disturbed, and where temporary equipment storage is an allowable use and compatible with the existing uses on the property. The technical analyses prepared for the Project have been conducted assuming use of a temporary offsite area following these parameters. If it is determined that use of a temporary offsite area is needed during Project construction, the selected location will be submitted to the County and shown to be consistent with the technical analyses performed for the Project.

Typical equipment expected to be used during Project construction and commissioning:

- Excavator (2)
- Backhoe (2)
- Dozer (1)
- Roller/Compactor (1)
- Dump truck (2)
- Concrete mixer (3)
- Flatbed-mounted utility crane (1)
- Portable generator and welding equipment (1)
- Forklift (1)
- Pickup trucks (4)
- Utility line trucks (2)

Figure 1-B: Project Site and Preliminary Gen-tie Alignment Options

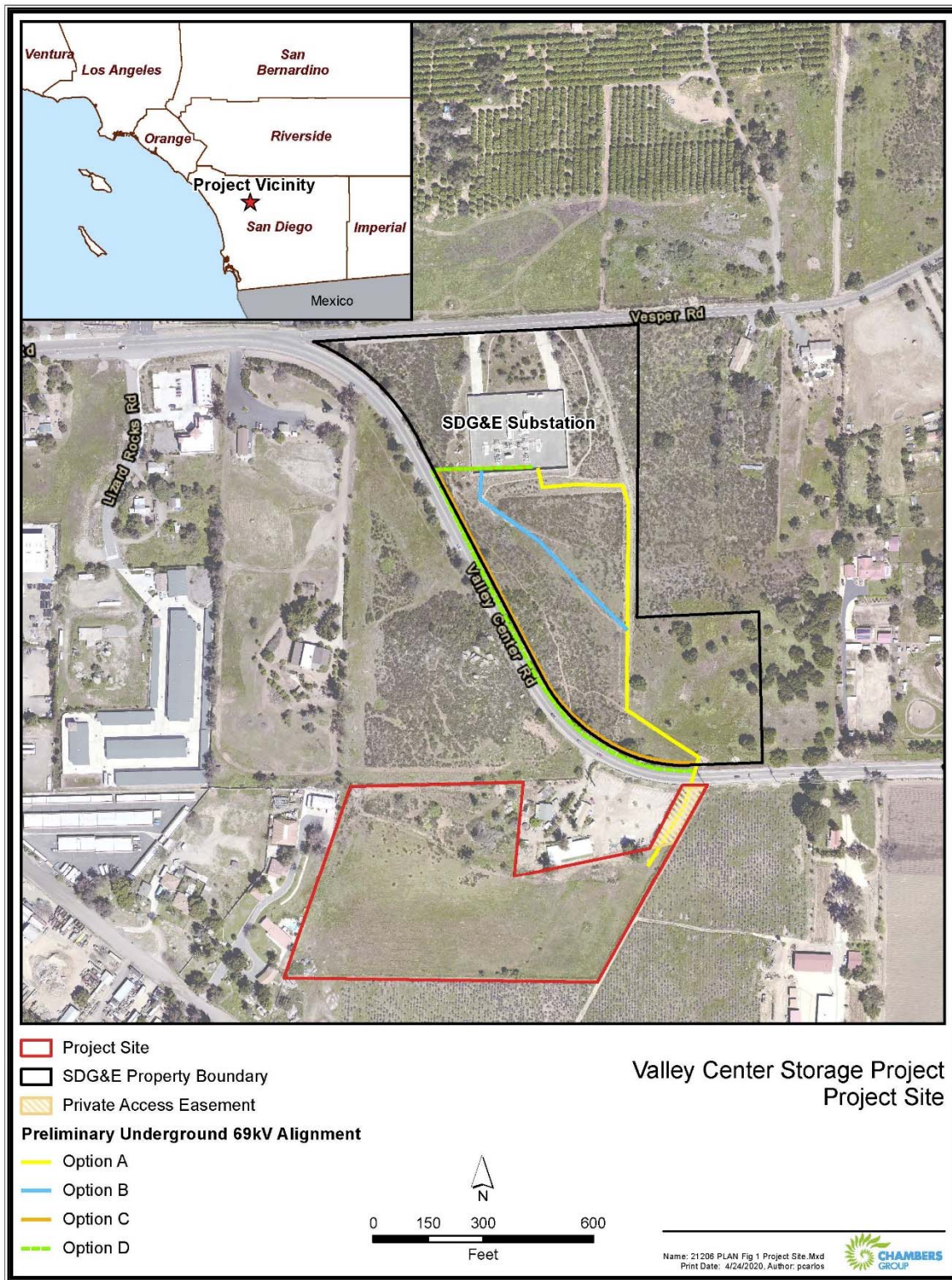
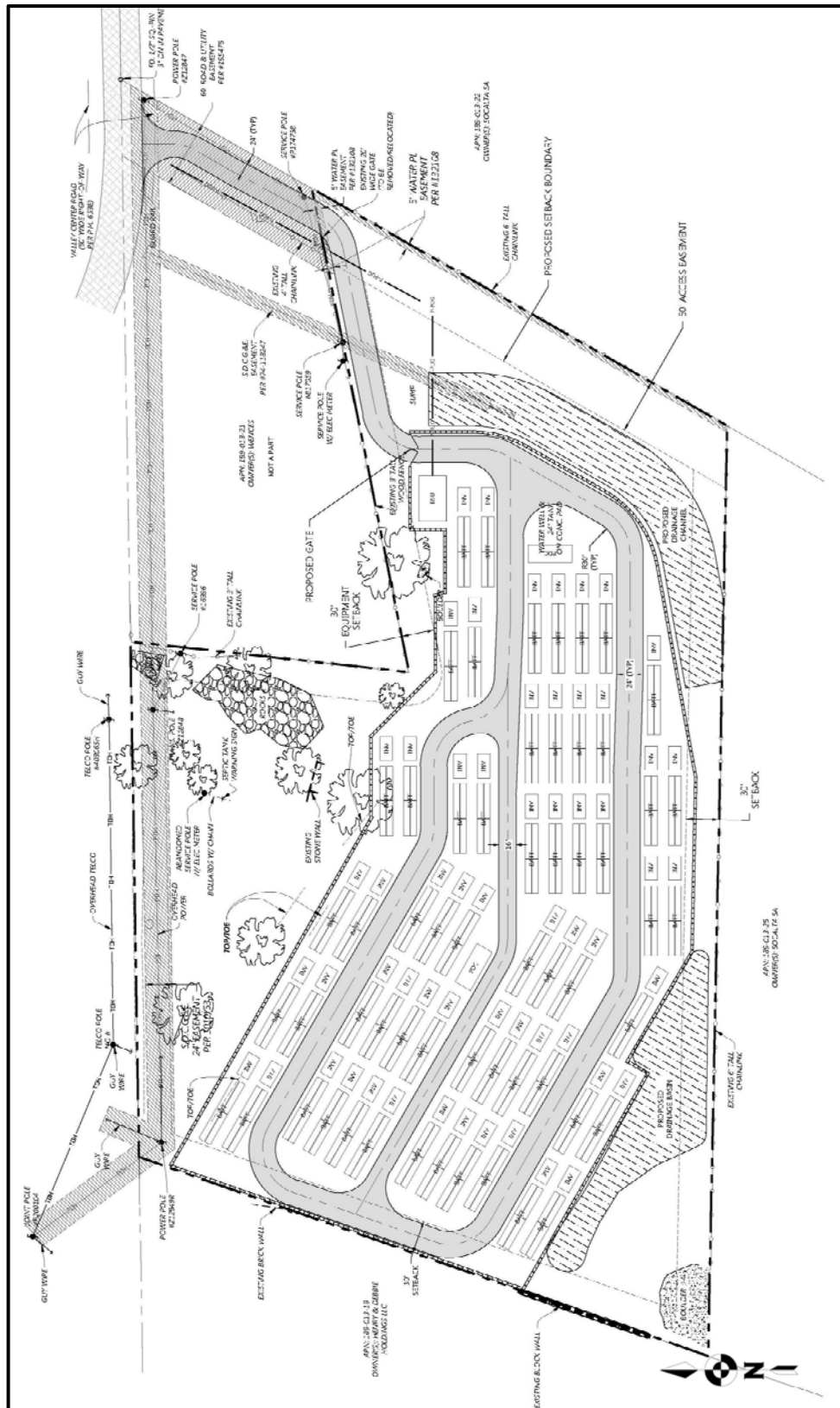


Figure 1-C: Preliminary Project site Layout



Source: (Westwood, 2020)

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Existing Setting

The subject property is generally level and has been previously disturbed for mostly agricultural uses and storage of construction equipment. Currently the Project site is generally devoid of significant vegetation. The site is generally flat, and onsite elevations are at or around 1,370 feet above mean sea level.

Surrounding land uses include Limited Impact Industrial (M52) to the north, Medium Impact Industrial (M54) to the west, and Semi-Rural Residential (SR-4 and SR-2) to the east and south. The Project is located in an area zoned for commercial and industrial use with other commercial, light industrial and minor impact utility uses located to the north and west. Residential receptors near the Project site are identified in Figure 3.A.

2.2 Climate and Meteorology

Climate within the San Diego Air Basin (SDAB) often varies dramatically over short geographical distances with cooler temperatures on the western coast gradually warming to the east as prevailing winds from the west heat up. Most of southern California is dominated by high-pressure systems for much of the year, which keeps San Diego mostly sunny and warm. Typically, during the winter months, the high-pressure system drops to the south and brings cooler, moister weather from the north. It is common for inversion layers to develop within high-pressure areas, which mostly define pressure patterns over the SDAB. These inversions are caused when a thin layer of the atmosphere increases in temperature with height. An inversion acts like a lid preventing vertical mixing of air through convective overturning.

Meteorological trends within the Valley Center area are generally similar to that of Escondido daytime highs ranging between 65°F in the winter to approximately 88°F in the summer with August usually being the hottest month. Median temperatures range from approximately 57°F in the winter to approximately 78°F in the summer. Precipitation is generally about 16.2 inches per year (WRCC, 2018). Prevailing wind patterns for the area vary during any given month during the year and also vary depending on the time of day or night. The predominant pattern though throughout the year is usually from the west or westerly (WRCC, 2018).

2.3 Regulatory Standards

2.3.1 Federal Standards and Definitions

The Federal Air Quality Standards were developed per the requirements of The Federal Clean Air Act, which is a federal law that was passed in 1970 and further amended in 1990. This law provides the basis for the national air pollution control effort. An important element of the act included the development of National Ambient Air Quality Standards (NAAQS) for major air pollutants.

The Clean Air Act established two types of air quality standards otherwise known as primary and secondary standards. **Primary Standards** set limits for the intention of protecting public health, which includes sensitive populations such as asthmatics, children and elderly. **Secondary Standards** set limits to protect public welfare to include the protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The EPA Office of Air Quality Planning and Standards has set NAAQS for principal pollutants, which are called "criteria" pollutants. These pollutants are defined below:

1. **Carbon Monoxide (CO):** *is a colorless, odorless, and tasteless gas and is produced from the partial combustion of carbon-containing compounds, notably in internal-combustion engines. Carbon monoxide usually forms when there is a reduced availability of oxygen present during the combustion process. Exposure to CO near the levels of the ambient air quality standards can lead to fatigue, headaches, confusion, and dizziness. CO interferes with the blood's ability to carry oxygen.*
2. **Lead (Pb):** *is a potent neurotoxin that accumulates in soft tissues and bone over time. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Because lead is only slowly excreted, exposures to small amounts of lead from a variety of sources can accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient air quality standard include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms can include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children.*
3. **Nitrogen Dioxide (NO₂):** *is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract and is one of the nitrogen oxides emitted from high-temperature combustion, such as those occurring in trucks, cars, power plants, home heaters, and gas stoves. In the presence of other air contaminants, NO₂ is usually visible as a reddish-brown air layer over urban areas. NO₂ along with other traffic-related pollutants is associated with respiratory symptoms, respiratory illness and respiratory impairment. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO₂ above the level of the current state air quality standard. Clinical studies of human subjects suggest that NO₂ exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children.*
4. **Particulate Matter (PM₁₀ or PM_{2.5}):** *is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary in shape, size and chemical composition, and can be made up of multiple materials such as metal, soot, soil, and dust. PM₁₀ particles are 10 microns (µm) or less and PM_{2.5} particles are*

2.5 (μm) or less. These particles can contribute significantly to regional haze and reduction of visibility in California. Exposure to PM levels exceeding current air quality standards increases the risk of allergies such as asthma and respiratory illness.

5. **Ozone (O_3):** is a highly oxidative unstable gas capable of damaging the linings of the respiratory tract. This pollutant forms in the atmosphere through reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Exposure to ozone above ambient air quality standards can lead to human health effects such as lung inflammation, tissue damage and impaired lung functioning. Ozone can also damage materials such as rubber, fabrics and plastics.
6. **Sulfur Dioxide (SO_2):** is a gaseous compound of sulfur and oxygen and is formed when sulfur-containing fuel is burned by mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Effects from SO_2 exposures at levels near the one-hour standard include bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most susceptible to these symptoms. Continued exposure at elevated levels of SO_2 results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.

2.3.2 State Standards and Definitions

California Air Resource Board (CARB) sets the laws and regulations for air quality on the state level. The California Ambient Air Quality Standards (CAAQS) is similar to the NAAQS and also restricts four additional contaminants. Table 2.1 on the following page identifies both the NAAQS and CAAQS. The additional contaminants as regulated by the CAAQS are defined below:

1. **Visibility Reducing Particles:** Particles in the Air that obstruct the visibility.
2. **Sulfates:** are salts of Sulfuric Acid. Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. They increase the acidity of the atmosphere and form acid rain.
3. **Hydrogen Sulfide (H_2S):** is a colorless, toxic and flammable gas with a recognizable smell of rotten eggs or flatulence. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. Usually, H_2S is formed from bacterial breakdown of organic matter. Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulfide (greater than 500 Parts per Million (ppm)) can cause a loss of consciousness and possibly death.
4. **Vinyl Chloride:** also known as chloroethene and is a toxic, carcinogenic, colorless gas with a sweet odor. It is an industrial chemical mainly used to produce its polymer, polyvinyl chloride (PVC).

Table 2.1: Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	Average Time	California Standards ¹		Federal Standards ²		
		Concentration ³	Method ⁴	Primary ^{3,5}	Secondary ^{3,6}	Method ⁷
Ozone (O ₃) ⁸	1 Hour	0.09 ppm (180 µg/m ³)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m ³)		0.070 ppm (137 µg/m ³)		
Respirable Particulate Matter (PM ₁₀) ⁹	24 Hour	50 µg/m ³	Gravimetric or Beta Attenuation	150 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m ³		-		
Fine Particulate Matter (PM _{2.5}) ⁹	24 Hour	No Separate State Standard		35 µg/m ³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m ³	Gravimetric or Beta Attenuation	12 µg/m ³		
Carbon Monoxide (CO)	8 hour	9.0 ppm (10mg/m ³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m ³)	-	Non-Dispersive Infrared Photometry
	1 hour	20 ppm (23 mg/m ³)		35 ppm (40 mg/m ³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)		-		
Nitrogen Dioxide (NO ₂) ¹⁰	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m ³) ⁸	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m ³)		0.100 ppm ⁸ (188/ µg/m ³)		
Sulfur Dioxide (SO ₂) ¹¹	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm ¹⁰ (for Certain Areas)	-	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method) ⁹
	24 Hour	0.04 ppm (105 µg/m ³)		0.14 ppm ¹⁰ (for Certain Areas) (See Footnote 9)	-	
	3 Hour	-		-	0.5 ppm (1300 µg/m ³)	
	1 Hour	0.25 ppm (655 µg/m ³)		75 ppb (196 µg/m ³)	-	
Lead ^{12,13}	30 Day Average	1.5 µg/m ³	Atomic Absorption	-	Same as Primary Standard	-
	Calendar Quarter	-		1.5 µg/m ³		
	Rolling 3-Month Average	-		0.15 µg/m ³		
Visibility Reducing Particles	8 Hour	See footnote 14				
Sulfates	24 Hour	25 µg/m ³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	Ultraviolet Fluorescence			
Vinyl Chloride ¹²	24 Hour	0.01 ppm (26 µg/m ³)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3 . The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m3 . The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

12. The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: (California Air Resources Board, 5/4/2016)

2.3.3 Regional Standards

The State of California has 35 specific air districts, which are each responsible for ensuring that the criteria pollutants are below the NAAQS and CAAQS. Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants are designated as “non-attainment areas” for that pollutant. Currently, there are 15 non-attainment areas for the federal ozone standard and two non-attainment areas for the PM_{2.5} standard and many areas are in non-attainment for PM₁₀ as well. California therefore created the California State Implementation Plan (SIP), which is designed to provide control measures needed to attain ambient air quality standards.

The San Diego Air Pollution Control District (SDAPCD) is the government agency which regulates sources of air pollution within County and it is the jurisdictional entity that is responsible for implementing the SIP. The SDAPCD developed a Regional Air Quality Strategy (RAQS) to provide control measures to try to achieve attainment status for state ozone standards with control measures focused on Volatile Organic Compounds (VOCs) and oxides of nitrogen (NO_x). Currently, San Diego is in “non-attainment” status for federal and state O₃ and State PM₁₀ and PM_{2.5}. An attainment plan is available for O₃. The RAQS was adopted in 1992 and has been updated as recently as 2016 which was the latest update incorporating minor changes to the prior 2009 update.

The 2016 update mostly summarizes how the 2009 update has lowered NO_x and VOCs emissions which reduces ozone and clarifies and enhances emission reductions by introducing for discussion three new VOC and four new NO_x reduction measures. NO_x and VOCs are precursors to the formation of ozone in the atmosphere. The criteria pollutant standards are generally attained when each monitor within the region has had no exceedances during the previous three calendar years. A complete listing of the current attainment status for criteria pollutants with respect to both federal and state nonattainment status by pollutants for San Diego County (SDAPCD territory) is shown in Table 2.2 on the following page (SDAPCD, 2018).

The RAQS is largely based on population predictions by the San Diego Association of Governments (SANDAG). Projects that produce less growth than predicted by SANDAG would generally conform to the RAQS. Projects that create more growth than projected by SANDAG may create a significant impact if the Project produces unmitigable air quality emissions or if the Project produces cumulative impacts.

Table 2.2: San Diego County Air Basin Attainment Status by Pollutant

Criteria Pollutant	Federal Designation	State Designation
Ozone (8-Hour)	Nonattainment	Nonattainment
Ozone (1-Hour)	Attainment *	Nonattainment
Carbon Monoxide	Attainment	Attainment
PM10	Unclassifiable **	Nonattainment
PM2.5	Attainment	Nonattainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility	No Federal Standard	Unclassified
* The federal 1-hour standard of 12 pphm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans. ** At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable. (SDAPCD, 2018)		

2.4 California Environmental Quality Act (CEQA) Significance Thresholds

The California Environmental Quality Act has provided a checklist to identify the significance of air quality impacts. These guidelines are found in Appendix G of the CEQA guidelines and are as follows:

AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:

- A: Conflict with or obstruct implementation of the San Diego RAQS or applicable portions of the SIP?
- B: Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation?
- C: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (PM10, PM2.5 or exceed quantitative thresholds for O3 precursors, NOX and VOCs)?

- D:* Expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, residential uses or day-care centers) to substantial pollutant concentrations?
- E:* Create objectionable odors affecting a substantial number of people?

2.5 SDAPCD Rule 20.2 – Air Quality Impact Assessment Screening Thresholds

The SDAPCD has established thresholds in Rule 20.2 for new or modified stationary sources. The County's Guidelines for Determining Significance and Report Format and Content Requirements incorporate screening level thresholds from Rule 20.2 for use in all County related Air Quality Impact Assessments and for determining CEQA air quality impacts (County of San Diego, 2007). These screening criteria can be used to demonstrate that a project's total emissions would not result in a significant impact as defined by CEQA. Also, since SDAPCD does not have air quality impact threshold for VOCs, it is acceptable to use the Coachella Valley VOC threshold from South Coast Air Quality Management District (SCAQMD). Should emissions be found to exceed these thresholds, additional modeling is required to demonstrate that a project's total air quality impacts are below the state and federal ambient air quality standards. These screening thresholds for construction and daily operations are shown in Table 2.3 on the following page.

Non-Criteria pollutants such as Hazardous Air Pollutants or Toxic Air Contaminants are also regulated by the SDAPCD. Rule 1200 (Toxic Air Contaminants - New Source Review) adopted on June 12, 1996, requires evaluation of potential health risks for any new, relocated, or modified emission unit which may increase emissions of one or more toxic air contaminants. The rule requires that projects that propose to increase cancer risk to between 1 and 10 in one million need to implement toxics best available control technology (T-BACT) or impose the most effective emission limitation, emission control device or control technique to reduce the cancer risk. At no time shall the Project increase the incremental cancer risk to over 10 in one million or a health hazard index (chronic and acute) greater than one. Projects creating cancer risks less than one in one million are not required to implement T-BACT technology.

The U.S. EPA uses the term VOC and the CARB's Emission Inventory Branch (EIB) uses the term Reactive Organic Gases (ROG) to essentially define the same thing. There are minor deviations between compounds that define each term however for purposes of this assessment it is assumed they are essentially the same due to the fact SCAQMD interchanges these words and because Air Quality models directly calculates ROG in place of VOC.

Table 2.3: SDAPCD Screening Level Thresholds for Criteria Pollutants

Pollutant	Total Emissions (Pounds per Day)
Construction Emissions	
Respirable Particulate Matter (PM ₁₀ and PM _{2.5})	100 and 55
Nitrogen Oxide (NO _x)	250
Sulfur Oxide (SO _x)	250
Carbon Monoxide (CO)	550
Volatile Organic Compounds (VOCs)	75
Reactive Organic Gases (ROG) SCAQMD	75
Operational Emissions	
Respirable Particulate Matter (PM ₁₀ and PM _{2.5})	100 and 55
Nitrogen Oxide (NO _x)	250
Sulfur Oxide (SO _x)	250
Carbon Monoxide (CO)	550
Lead and Lead Compounds	3.2
Volatile Organic Compounds (VOCs)	75
Reactive Organic Gases (ROG) SCAQMD	75

2.6 Local Air Quality

Criteria pollutants are measured continuously throughout the San Diego Air Basin. This data is used to track ambient air quality patterns throughout the County. As mentioned earlier, this data is also used to determine attainment status when compared to the NAAQS and CAAQS. The SDAPCD is responsible for monitoring and reporting monitoring data (SDAPCD, 2018). SDAPCD operates monitoring sites, which collect data on criteria pollutants. The closest monitoring locations to the Project site is the Escondido monitoring location roughly 7.6 miles to the south-southwest, and the Camp Pendleton monitoring station roughly 21.8 miles to the west. Table 2.4 on the following page identifies the criteria pollutants monitored at the aforementioned stations.

Table 2.4: Three-Year Ambient Air Quality Summary near the Project Site

Pollutant	Closest Recorded Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2015	2016	2017	Days Exceeded over 3 years
O ₃ (ppm)	Camp Pendleton or Escondido Monitoring Station	1 Hour	0.09 ppm	No Standard	0.09	0.08	0.09	0
		8 Hour	0.070 ppm	0.070 ppm	0.08	0.07	0.08	10
* PM ₁₀ (µg/m ³)		24 Hour	50 µg/m ³	150 µg/m ³	30	-	-	N/A
		Annual Arithmetic Mean	20 µg/m ³	No Standard	19.4	-	-	N/A
* PM _{2.5} (µg/m ³)		24 Hour	No Standard	35 µg/m ³	29.4	-	-	N/A
		Annual Arithmetic Mean	12 µg/m ³	15 µg/m ³	8.6	-	-	N/A
NO ₂ (ppm)		Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.006	0.006	0.006	N/A
		1 Hour	0.18 ppm	0.100 ppm	0.060	0.072	0.063	N/A
* CO (ppm)		1 Hour	20 ppm	35 ppm	3.1	-	-	N/A
		8 Hour	9 ppm	9 ppm	2.0	-	-	N/A
Notes: 1. - Yearly maximums marked with "-" indicated data was not available for either monitoring station. 2. Days exceeded marked with "N/A" indicate no data available 3. * Data was selected from the Escondido Monitoring Station. All other data presented was collected at the Camp Pendleton Monitoring Station. 4. SO ₂ is only monitored at the El Cajon Monitoring Station. Within the entire County of San Diego, SO ₂ emissions within the County are essentially Zero for all metrics including the Average, Maximum 24 hour and 1- hour standards. The Highest 1-hr measurement identified is .004 ppm and the most restrictive standard (CAAQS for SO ₂) is 0.25 ppm.								

3.0 METHODOLOGY

3.1 Construction Emissions Calculations

Potential air quality impacts related to Project construction and operations were calculated using the latest CalEEMod 2016.3.2 air quality model, which was developed by BREEZE Software for SCAQMD in 2017. The construction module in CalEEMod is used to calculate the emissions associated with Project construction and uses methodologies presented in the U.S. EPA AP-42 document with emphasis on Chapter 11.9. The CalEEMod input/output model is shown in **Attachment A** to this Assessment.

The AERMOD dispersion model will be used to determine the concentration for air pollutants at any location near the pollutant generator. Additionally, the model will predict the maximum exposure distance and concentrations. The notable toxic air contaminant from construction is diesel exhaust, since exposure to diesel exhaust is known to cause cancer and acute and chronic health effects. Diesel exhaust emissions can be estimated using the annual PM₁₀ exhaust emissions from onsite construction operations obtained from the annual CalEEMod model output by summing each onsite source for the construction duration. The AERMOD files for the Project are provided in **Attachments B and C** for both unmitigated and mitigated scenarios which include Tier 4 diesel engines with adjacent or nearby sensitive receptors included. Both these scenarios are further discussed later in this Assessment.

Once the dispersed concentrations of diesel particulates are estimated in the surrounding air, they are used to evaluate estimated exposure to people. Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst-case cancer risk dose calculation is defined in Equation 1 below (County of San Diego, 2007):

Equation 1

$$Dose_{air} = C_{air} * (BR/BW) * A * EF * (1 \times 10^{-6})$$

Dose _{air}	=	Dose through inhalation (mg/kg/d)
C _{air}	=	Concentration in air (µg/m ³) Annual average DPM concentration in µg/m ³ - AERMOD predicts annual averages.
BR/BW	=	Daily breathing rate normalized to body weight (L/kg BW-day). See Table I.2 for the daily breathing rate for each age range.
A	=	Inhalation absorption factor (assumed to be 1)
EF	=	Exposure frequency (unitless, days/365 days)
1x10 ⁻⁶	=	Milligrams to micrograms conversion (10 ⁻³ mg/ µg), cubic meters to liters conversion (10 ⁻³ m ³ /l)

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. Specific factors as modeled are shown within the Project models attached to this Assessment. The worst-case cancer risk calculation is defined in Equation 2 below (OEHHA, February 2015):

Equation 2 $RISK_{inh-res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$

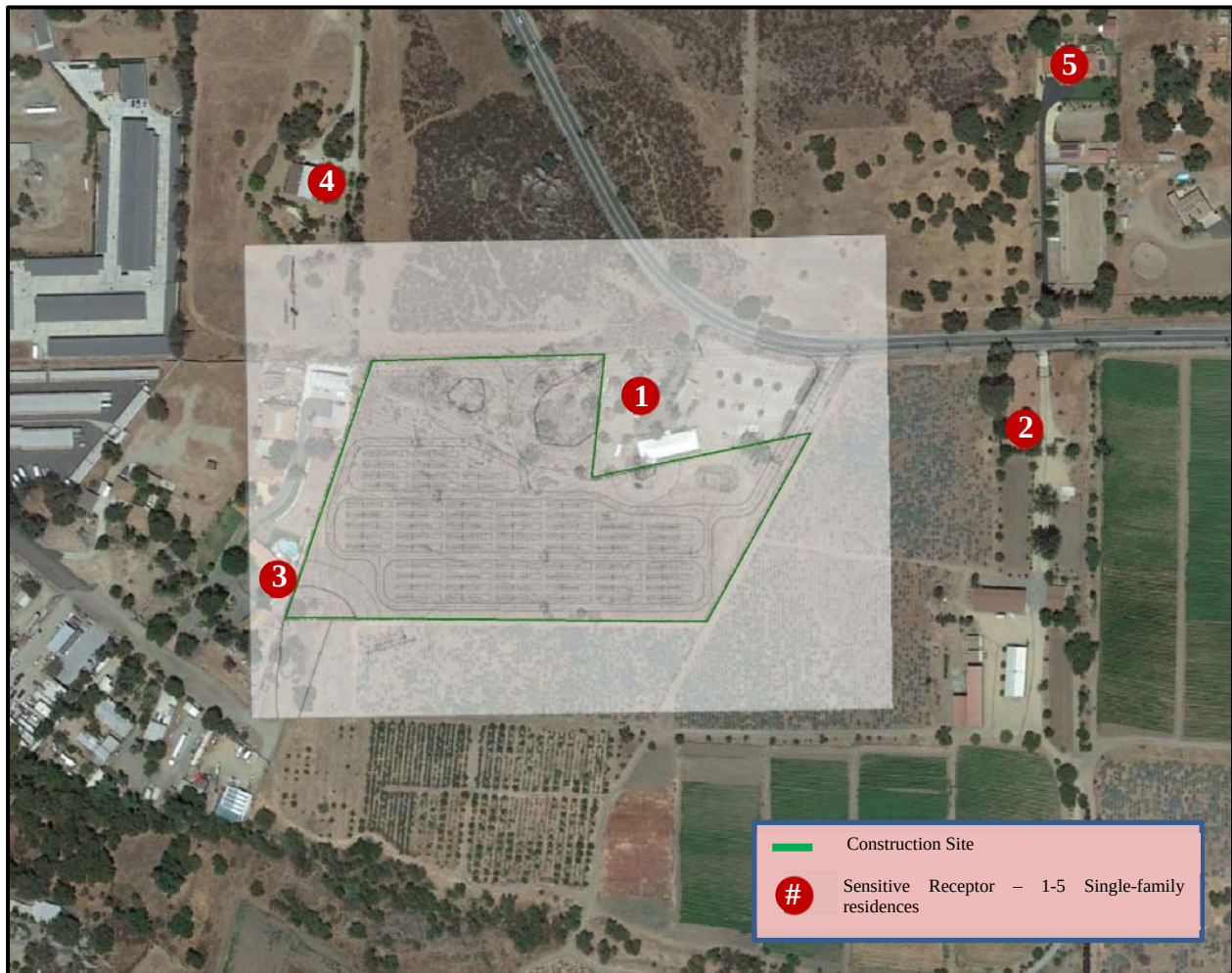
$RISK_{inh-res}$	=	Residential inhalation cancer risk
$DOSE_{air}$	=	Daily inhalation dose (mg/kg-day)
CPF	=	Inhalation cancer potency factor (mg/kg-day ⁻¹)
ASF	=	Age sensitivity factor for a specified age group (unitless)
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless)

The California Office of Environmental Health Hazard Assessment (OEHHA) recommends that an exposure duration (residency time) of 30 years be used to estimate individual cancer risk for the Maximally Exposed Individual Resident (MEIR). OEHHA also recommends that the 30-year exposure duration be used as the basis for public notification and risk reduction audits and plans. Exposure durations of 9-years and 70-years are also recommended to be evaluated for the MEIR to show the range of cancer risk based on residency periods. If a facility is notifying the public regarding cancer risk, the 9-and 70-year cancer risk estimates are useful for people who have resided in their current residence for periods shorter and longer than 30 years. Health risk calculations are shown in **Attachment D** to this Assessment.

Non-Cancer risks or risks defined as chronic or acute are also known with respect to Diesel Particulate Matter (DPM) and are determined by the hazard index. To calculate hazard index, DPM concentration is divided by its chronic Reference Exposure Levels (REL). Where the total equals or exceeds one, a health hazard is presumed to exist. RELs are published by the Office of Environmental Health Hazard Assessment (OEHHA, February 2015). Diesel Exhaust has a REL of 5 µg/m³ and targets the respiratory system.

A graphical representation of the modeling locations for the Project is shown on an aerial of the Project site and vicinity below in Figure 2-A. The red points (1-5) represent the nearby sensitive residential receptor locations (single-family residences) where air quality emissions are calculated by AERMOD. For purposes of this analysis an unmitigated and mitigated model was created.

Figure 3-A: Construction Health Risk Model Setup



Source: (Google Earth Pro, 2019)

3.2 Construction Assumptions

The Project construction dates were estimated based on a construction kickoff starting as early as fourth quarter 2020 with construction ending sometime mid-2021 and facility operation scheduled to begin the third quarter of 2021. Given this, the first full operational year would be 2022. Based on projections provided by the Developer, construction of the Project is anticipated to take roughly six (6) months to complete.

Project construction would likely occur in two phases:

- Phase 1 (Outside Flood Plain) – Installation of battery storage enclosures and associated civil, electrical and structural features to include graveled access roads and underground electrical components.
- Phase 2 (Inside Flood Plain) – Installation of remaining battery storage enclosures and associated civil, electrical and structural features to include features, such as pad-mounted switchgear, step-up transformer(s), and a control center enclosure.

The two construction phases would likely be executed consecutively; Phase 1 followed by Phase 2. However, for the purposes of preparing a worst-case CEQA analysis, technical analyses were completed assuming the two construction phases would occur simultaneously.

The Project is a balanced site and would not require import or export of soil on/off the property. Project construction would begin with site preparation and grading, followed by continues civil works, the installation of electrical cabling, structural foundations and the installation of Project structures.

CalEEMod 2016.3.2 was utilized for all calculations. Table 3.1 shows the expected timeframes for the construction processes for Project infrastructure, facilities, improvements and structures at the Project site, as well as the expected number of pieces of equipment. CalEEMod has been updated to reflect the anticipated construction activities.

Finally, it should be noted that after the life of the project (anticipated to be approximately 30 years), the Developer would decommission the Project. At the end of the Project life, the Project's enclosures, batteries, and electrical equipment (breakers, transformers, inverters) would be removed and recycled. Equipment foundations and pads would be demolished and removed. Decommissioning activities would be similar to project construction activities. Because this phase would occur approximately 30 years into the future, decommissioning is anticipated to generate fewer emissions than construction activities. This is primarily a result of assumed improvements to emissions control technology in construction equipment that would occur over time as well as a reduction in the need for as much site preparation and

grading. Therefore, for the purposes of this analysis to reflect conservative emissions for decommissioning activities, no decommissioning activity emissions were estimated and it was assumed that all impacts that would occur during Project construction would also occur during Project decommissioning.

Table 3.1: Anticipated Construction Equipment and Durations

Equipment Identification	Estimated Start	Estimated Completion	Quantity
Site Preparation	10/1/2020	10/14/2020	
Rubber Tired Dozers			2
Tractors/Loaders/Backhoes			2
Grading Access Road	10/15/2020	11/11/2020	
Excavators			1
Graders			1
Rubber Tired Dozers			1
Construction including Gen-Tie Connections	11/12/2020	3/30/2021	
Generator Sets			1
Rough Terrain Forklifts			1
Crane Use to set Equipment	1/1/2021	1/28/2021	
Cranes			1
This equipment list is based upon equipment inventory within CalEEMod and has been verified by the Developer.			

3.3 Operational Assumptions

Once operational, the Project would generate air emissions from daily operations. Operational emissions sources would include the consumption of electricity from the CAISO grid for Project auxiliary equipment, such as BESS HVAC units, communications equipment and lighting.

Mobile vehicle visits to the Project site associated with periodic operations and maintenance would also generate air emissions. Monthly operations staff operations and maintenance visits, with crews of two to four persons are expected to generate 2 to 4 trips twice per month. For purposes of preparing an overly conservative analysis, it was assumed that the Project would generate 4 trips per day using a rural setting. CalEEMod has been updated to reflect Project-related operational conditions.

3.4 Micro Scale Project Operational Emissions

Air pollutant emissions related to Project operations staff trips have the potential to create new, or worsen existing localized air quality violations with respect to carbon monoxide (CO).

Increased CO “Hot Spots” are determined through the utilization of the Institute of Transportation Studies Transportation Project-Level Carbon Monoxide Protocol (University of California, Davis, 1997).

In the event a project adds vehicular trips to either an intersection that operates at Level of Service (LOS) E or F or any intersection where project trips re-classify the intersection level of service to LOS E or F and when peak-hour trips exceed 3,000 the project must quantify CO levels (County of San Diego, 2007).

Project operations would not generate enough trips to generate significant CO impacts. This is largely due to the fact that the Project is not anticipated to add enough trips to the nearby roadway networks that would result in changes to traffic flow.

3.5 Odor (Onsite)

The Project may create temporary construction odors from combustion engine equipment but would not be considered significant due to the highly dispersive nature of diesel exhaust. Therefore, less than significant impacts are expected.

4.0 FINDINGS

4.1 Construction Emission Findings

Construction emissions in pounds per day from the construction activities and equipment identified in Section 3.2 above is shown in Table 4.1. Based on the modeling, the Project would not exceed County standards and would not require mitigation to comply.

Additionally, as noted above, the Developer would decommission the Project once its lifecycle has been reached and would include demolition and removal of the equipment. This phase would be accomplished within a few weeks and would involve minimal equipment. Demolition intensity would be significantly less than Project construction and would therefore have a less than significant impact.

Table 4.1: Expected Construction Emissions Summary – Pounds per Day

Year	ROG	NO _x	CO	SO ₂	PM ₁₀ (Dust)	PM ₁₀ (Exhaust)	PM ₁₀ (Total)	PM _{2.5} (Dust)	PM _{2.5} (Exhaust)	PM _{2.5} (Total)
2020	2.63	26.91	13.24	0.02	12.17	1.38	13.55	6.65	1.27	7.92
2021	0.94	9.09	8.50	0.02	0.26	0.40	0.66	0.07	0.39	0.45
Significance Threshold (lb/day)	75	250	550	250	-	-	100	-	-	55
Impact?	No	No	No	No	-	-	No	-	-	No

4.2 Construction Health Risks

The nearest sensitive receptors to the Project site are identified in Figure 2-A above. Based upon the annual air quality modeling results attached to this report, worst-case unmitigated PM₁₀ from exhaust emissions would cumulatively produce 0.0294 tons (over the total construction duration of 180-days) or an average of 0.0017 grams/second. The average emission rate over the grading area is 4.74x10⁻⁸ g/m²/s, which was calculated as follows:

$$\frac{0.0017 \frac{\text{grams}}{\text{second}}}{8.93 \text{ acres} * 4,046 \frac{\text{meters}^2}{\text{acre}}} = 4.74 * 10^{-8} \frac{\text{grams}}{\text{meters}^2 \text{ second}}$$

Utilizing the AERMOD dispersion model, the worst-case annual concentration of DPM from Project construction is estimated at 0.826 µg/m³. Utilizing the risk equation identified above

in Section 3.1, the inhalation cancer risk for the closest residential receptor was to exceed the one in one million exposed significance threshold without the application of Toxics Best Available Control Technology (T-BACT). Thus, this impact would be potentially significant.

It was found that these impacts can be reduced to less than significant through the utilization of Tier 4 or better equipment. It was found that Tier 4 equipment would cumulatively produce 0.00131 tons of PM₁₀ over the same construction duration above or 7.63x10⁻⁵ grams/second. Based on this the mitigated average emission rate over the grading area is 2.11x10⁻⁹ g/m²/s. Utilizing the AERMOD dispersion model, we find that the annual concentration is 0.0328 µg/m³ during construction. Given this, the inhalation cancer risk for the closest residential receptor was found to be 7.26 per one million exposed which would be below the 10 in one million threshold with the application of T-BACT. Thus, the Project's health risk impacts are considered less than significant under CEQA. Detailed calculations for both the unmitigated and mitigated scenario are shown in **Attachment D** to this report.

Finally, there are known chronic health risks associated with diesel exhaust which are considered non-cancer risks. These risks are calculated based on methods identified in Section 3.1 of this report. From this we find that the annual concentration of 0.0388 µg/m³ divided by the REL of 5 µg/m³ yields a Health Hazard Index of 0.0066, which is less than one. Therefore, no chronic health risks are expected and all health risks are considered less than significant.

It should be noted that the mitigation measure to utilize Tier 4 equipment would further reduce Air Quality emissions identified in Section 4.1 above. Since unmitigated construction emissions of criteria pollutants would not exceed the County's screening level thresholds, mitigated emissions would also be considered less than significant. Mitigated construction emissions are shown in Table 4.2 below:

Table 4.2: Mitigated Construction Emissions Summary – Pounds per Day

Year	ROG	NO _x	CO	SO ₂	PM ₁₀ (Dust)	PM ₁₀ (Exhaust)	PM ₁₀ (Total)	PM _{2.5} (Dust)	PM _{2.5} (Exhaust)	PM _{2.5} (Total)
2020	0.34	1.27	12.77	0.02	12.17	0.04	12.21	6.65	0.04	6.69
2021	0.27	0.80	9.72	0.02	0.26	0.02	0.28	0.07	0.02	0.09
Significance Threshold (lb/day)	75	250	550	250	-	-	100	-	-	55
Impact?	No	No	No	No	-	-	No	-	-	No

4.3 Operational Findings

Project operations is expected to begin in 2021 and the first full year of operations would be expected in 2022 and was modeled as such. To reflect potential worst-case trip generation, it was assumed that the Project would generate four daily trips. Additionally, the model was run for the winter and summer scenarios to determine maximum daily operational impacts for operation. The expected daily pollutant generation from mobile sources is estimated in CalEEMod using emission factors from EMFAC2014. The daily pollutants calculated for summer and winter are shown in Tables 4.3 and 4.4. Based upon these calculations, the Project would produce less than significant air quality impacts during operations.

Table 4.3: Expected Summer Daily Pollutant Generation

	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.01	0.04	0.13	0.00	0.05	0.01
Total (Unmitigated)	0.01	0.04	0.13	0.00	0.05	0.01
County Thresholds	75	250	550	250	100	55
Significant?	No	No	No	No	No	No
Daily pollutant generation assumes trip distances within CalEEMod						

Table 4.4: Expected Winter Daily Pollutant Generation

	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.01	0.04	0.13	0.00	0.05	0.01
Total (Unmitigated)	0.01	0.04	0.13	0.00	0.05	0.01
County Thresholds	75	250	550	250	100	55
Significant?	No	No	No	No	No	No
Daily pollutant generation assumes trip distances within CalEEMod						

4.4 Odor Findings

The Project may create temporary construction odors from combustion engine equipment but would not be considered significant due to the highly dispersive nature of diesel exhaust. These odors would be generated only during a short period (6 to 12 months) and would not

occur following the completion of construction activities. Operational odors would not be expected.

4.5 Cumulative Construction Impacts

Cumulative construction impacts would exist when multiple construction projects occur at the same time and when those construction project maximum exposure contours intersect. To illustrate this, if a project was to produce air quality emissions simultaneous to a nearby construction project the addition of both project emissions could exceed significance thresholds. For this Project, the construction emissions are below significance as shown in Table 4.2 above. If a nearby project was to be under construction at the same time, that project would need to produce significantly more emissions and be relatively close to the Project site. All other future projects developed in the project vicinity would be required to meet the same APCD and County rules and requirements to limit the generation of pollutant emissions from construction activities. Thus, the cumulative air quality emissions impacts would be less than significant.

4.6 Cumulative Operations Impacts

The Project will have no significant sources of air emissions during operations. The Project is consistent with the General Plan category and zoning for the Project site. Therefore, the Project has been accounted for in the County's General plan. Since the Project would generate less than significant direct air quality impacts during operations, the Project would also generate less than significant cumulative air quality impacts during operations. Based on this, the Project does not conflict with or prevent the implementation of the RAQS and is consistent with the RAQS and SIP.

4.7 Conclusion of Findings

Construction of the Project is anticipated to start in 2020 and be completed in 2021. The Project was found to generate a potentially significant health risk impacts from diesel exhaust during construction without the use of at least Tier 4 diesel equipment. With the use of Tier 4 equipment (considered T-BACT), the Project would result in less than significant health risk impact construction.

Based upon the analysis of Project construction activities, no criteria pollutant impacts would be expected. No further mitigation requirements will be necessary. Project operational activities would generate emissions from vehicle trips and ongoing maintenance activities.

Based on the analysis provided, emissions generated during operations would be less than significant.

The Project may generate short-term odors from use of temporary construction equipment. Since odors from this equipment would be short-term, no significant odor impacts would be expected. Also, the Project would not produce long-term odors and would therefore result in less than significant odor impacts.

The Project is consistent with the General Plan Category and zoning for the Project site. Based on this, the Project was accounted for in the County's General plan. Therefore, no cumulative operation air quality impacts are anticipated since the proposed use is consistent with the RAQS and SIP

5.0 REFERENCES

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6.0 CERTIFICATIONS

The contents of this Assessment represent an accurate depiction of the air quality environment and impacts within and surrounding the proposed development. This Assessment was prepared by Jeremy Loudon; a County approved CEQA Consultant for Air Quality.



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Date June 17, 2020

ATTACHMENT A

CALEEMOD 2016.3.2

Valley Center Storage Project - San Diego County, Summer

Valley Center Storage Project
San Diego County, Summer**1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.93	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Valley Center Storage Project - San Diego County, Summer

Project Characteristics -

Land Use - site is 8.93 acres

Construction Phase - construction schedule

Off-road Equipment - ce

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - construction equipment

Off-road Equipment - construction equipment

Trips and VMT - Trips

Vehicle Trips - vehicle trips

Energy Use - Electrical energies

Water And Wastewater - Basic onsite landscaping will be watered 300gal/day

Solid Waste - solid waste is not likely, though 3 ton per year was assumed. Systems will be remotly managed.

Construction Off-road Equipment Mitigation - tier 4

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Valley Center Storage Project - San Diego County, Summer

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	230.00	99.00
tblConstructionPhase	NumDays	230.00	20.00
tblEnergyUse	LightingElect	0.00	12,150.00
tblEnergyUse	NT24E	0.00	4,502,250.00
tblLandUse	LotAcreage	0.00	8.93
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	4.00
tblWater	OutdoorWaterUseRate	0.00	109,500.00

2.0 Emissions Summary

Valley Center Storage Project - San Diego County, Summer

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.6288	26.9115	13.2396	0.0246	12.1719	1.3771	13.5490	6.6543	1.2669	7.9212	0.0000	2,386.033 7	2,386.033 7	0.7335	0.0000	2,404.370 8
2021	0.9379	9.0884	8.4954	0.0176	0.2555	0.4042	0.6596	0.0677	0.3853	0.4530	0.0000	1,696.597 5	1,696.597 5	0.3048	0.0000	1,704.218 6
Maximum	2.6288	26.9115	13.2396	0.0246	12.1719	1.3771	13.5490	6.6543	1.2669	7.9212	0.0000	2,386.033 7	2,386.033 7	0.7335	0.0000	2,404.370 8

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.3359	1.2720	12.7683	0.0246	12.1719	0.0389	12.2108	6.6543	0.0388	6.6931	0.0000	2,386.033 7	2,386.033 7	0.7335	0.0000	2,404.370 8
2021	0.2662	0.8041	9.7226	0.0176	0.2555	0.0244	0.2798	0.0677	0.0243	0.0920	0.0000	1,696.597 5	1,696.597 5	0.3048	0.0000	1,704.218 6
Maximum	0.3359	1.2720	12.7683	0.0246	12.1719	0.0389	12.2108	6.6543	0.0388	6.6931	0.0000	2,386.033 7	2,386.033 7	0.7335	0.0000	2,404.370 8

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	83.12	94.23	-3.48	0.00	0.00	96.45	12.09	0.00	96.18	18.98	0.00	0.00	0.00	0.00	0.00	0.00

Valley Center Storage Project - San Diego County, Summer

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	9.0200e-003	0.0407	0.1337	5.1000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		51.6819	51.6819	2.4400e-003		51.7428
Total	9.0300e-003	0.0407	0.1338	5.1000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		51.6821	51.6821	2.4400e-003	0.0000	51.7430

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	9.0200e-003	0.0407	0.1337	5.1000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		51.6819	51.6819	2.4400e-003		51.7428
Total	9.0300e-003	0.0407	0.1338	5.1000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		51.6821	51.6821	2.4400e-003	0.0000	51.7430

Valley Center Storage Project - San Diego County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/1/2020	10/14/2020	5	10	
2	Grading Access Road	Grading	10/15/2020	11/11/2020	5	20	
3	Building Construction Including Connections	Building Construction	11/12/2020	3/30/2021	5	99	
4	Crane Use to set Units	Building Construction	1/1/2021	1/28/2021	5	20	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 0****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Valley Center Storage Project - San Diego County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading Access Road	Excavators	1	8.00	158	0.38
Grading Access Road	Graders	1	8.00	187	0.41
Grading Access Road	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction Including Connections	Generator Sets	1	8.00	84	0.74
Building Construction Including Connections	Rough Terrain Forklifts	1	8.00	100	0.40
Crane Use to set Units	Cranes	1	7.00	231	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading Access Road	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction Including Connections	2	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Crane Use to set Units	1	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Valley Center Storage Project - San Diego County, Summer

3.2 Site Preparation - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.0442	0.0000	12.0442	6.6205	0.0000	6.6205			0.0000			0.0000
Off-Road	2.5780	26.8748	12.8226	0.0233		1.3762	1.3762		1.2661	1.2661		2,256.2220	2,256.2220	0.7297		2,274.4647
Total	2.5780	26.8748	12.8226	0.0233	12.0442	1.3762	13.4204	6.6205	1.2661	7.8866		2,256.2220	2,256.2220	0.7297		2,274.4647

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0509	0.0367	0.4170	1.3000e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		129.8117	129.8117	3.7800e-003		129.9061
Total	0.0509	0.0367	0.4170	1.3000e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		129.8117	129.8117	3.7800e-003		129.9061

Valley Center Storage Project - San Diego County, Summer

3.2 Site Preparation - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.0442	0.0000	12.0442	6.6205	0.0000	6.6205			0.0000			0.0000
Off-Road	0.2851	1.2353	12.3513	0.0233		0.0380	0.0380		0.0380	0.0380	0.0000	2,256.2220	2,256.2220	0.7297		2,274.4647
Total	0.2851	1.2353	12.3513	0.0233	12.0442	0.0380	12.0822	6.6205	0.0380	6.6585	0.0000	2,256.2220	2,256.2220	0.7297		2,274.4647

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0509	0.0367	0.4170	1.3000e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		129.8117	129.8117	3.7800e-003		129.9061
Total	0.0509	0.0367	0.4170	1.3000e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		129.8117	129.8117	3.7800e-003		129.9061

Valley Center Storage Project - San Diego County, Summer

3.3 Grading Access Road - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.8003	20.0704	9.2139	0.0203		0.8741	0.8741		0.8041	0.8041		1,970.1796	1,970.1796	0.6372		1,986.1095
Total	1.8003	20.0704	9.2139	0.0203	6.5523	0.8741	7.4264	3.3675	0.8041	4.1716		1,970.1796	1,970.1796	0.6372		1,986.1095

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0407	0.0294	0.3336	1.0400e-003	0.1022	6.9000e-004	0.1029	0.0271	6.4000e-004	0.0277		103.8494	103.8494	3.0200e-003		103.9249
Total	0.0407	0.0294	0.3336	1.0400e-003	0.1022	6.9000e-004	0.1029	0.0271	6.4000e-004	0.0277		103.8494	103.8494	3.0200e-003		103.9249

Valley Center Storage Project - San Diego County, Summer

3.3 Grading Access Road - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	0.2492	1.0800	10.7265	0.0203		0.0332	0.0332		0.0332	0.0332	0.0000	1,970.1796	1,970.1796	0.6372		1,986.1095
Total	0.2492	1.0800	10.7265	0.0203	6.5523	0.0332	6.5856	3.3675	0.0332	3.4007	0.0000	1,970.1796	1,970.1796	0.6372		1,986.1095

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0407	0.0294	0.3336	1.0400e-003	0.1022	6.9000e-004	0.1029	0.0271	6.4000e-004	0.0277		103.8494	103.8494	3.0200e-003		103.9249
Total	0.0407	0.0294	0.3336	1.0400e-003	0.1022	6.9000e-004	0.1029	0.0271	6.4000e-004	0.0277		103.8494	103.8494	3.0200e-003		103.9249

Valley Center Storage Project - San Diego County, Summer

3.4 Building Construction Including Connections - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5326	5.2086	6.0024	0.0100		0.2686	0.2686		0.2628	0.2628		956.7151	956.7151	0.1430		960.2901
Total	0.5326	5.2086	6.0024	0.0100		0.2686	0.2686		0.2628	0.2628		956.7151	956.7151	0.1430		960.2901

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0509	0.0367	0.4170	1.3000e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		129.8117	129.8117	3.7800e-003		129.9061
Total	0.0509	0.0367	0.4170	1.3000e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		129.8117	129.8117	3.7800e-003		129.9061

Valley Center Storage Project - San Diego County, Summer

3.4 Building Construction Including Connections - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1081	0.4685	6.6666	0.0100		0.0144	0.0144		0.0144	0.0144	0.0000	956.7151	956.7151	0.1430		960.2901
Total	0.1081	0.4685	6.6666	0.0100		0.0144	0.0144		0.0144	0.0144	0.0000	956.7151	956.7151	0.1430		960.2901

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0509	0.0367	0.4170	1.3000e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		129.8117	129.8117	3.7800e-003		129.9061
Total	0.0509	0.0367	0.4170	1.3000e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		129.8117	129.8117	3.7800e-003		129.9061

Valley Center Storage Project - San Diego County, Summer

3.4 Building Construction Including Connections - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4806	4.7784	5.9789	0.0100		0.2302	0.2302		0.2252	0.2252		956.8039	956.8039	0.1397		960.2974
Total	0.4806	4.7784	5.9789	0.0100		0.2302	0.2302		0.2252	0.2252		956.8039	956.8039	0.1397		960.2974

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0480	0.0334	0.3908	1.2600e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		125.4486	125.4486	3.4900e-003		125.5359
Total	0.0480	0.0334	0.3908	1.2600e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		125.4486	125.4486	3.4900e-003		125.5359

Valley Center Storage Project - San Diego County, Summer

3.4 Building Construction Including Connections - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1081	0.4685	6.6666	0.0100		0.0144	0.0144		0.0144	0.0144	0.0000	956.8038	956.8038	0.1397		960.2974
Total	0.1081	0.4685	6.6666	0.0100		0.0144	0.0144		0.0144	0.0144	0.0000	956.8038	956.8038	0.1397		960.2974

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0480	0.0334	0.3908	1.2600e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		125.4486	125.4486	3.4900e-003		125.5359
Total	0.0480	0.0334	0.3908	1.2600e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		125.4486	125.4486	3.4900e-003		125.5359

Valley Center Storage Project - San Diego County, Summer

3.5 Crane Use to set Units - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3613	4.2432	1.7350	5.0500e-003		0.1723	0.1723		0.1585	0.1585		488.8964	488.8964	0.1581		492.8494
Total	0.3613	4.2432	1.7350	5.0500e-003		0.1723	0.1723		0.1585	0.1585		488.8964	488.8964	0.1581		492.8494

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0480	0.0334	0.3908	1.2600e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		125.4486	125.4486	3.4900e-003		125.5359
Total	0.0480	0.0334	0.3908	1.2600e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		125.4486	125.4486	3.4900e-003		125.5359

Valley Center Storage Project - San Diego County, Summer

3.5 Crane Use to set Units - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0620	0.2688	2.2744	5.0500e-003		8.2700e-003	8.2700e-003		8.2700e-003	8.2700e-003	0.0000	488.8964	488.8964	0.1581		492.8494
Total	0.0620	0.2688	2.2744	5.0500e-003		8.2700e-003	8.2700e-003		8.2700e-003	8.2700e-003	0.0000	488.8964	488.8964	0.1581		492.8494

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0480	0.0334	0.3908	1.2600e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		125.4486	125.4486	3.4900e-003		125.5359
Total	0.0480	0.0334	0.3908	1.2600e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		125.4486	125.4486	3.4900e-003		125.5359

4.0 Operational Detail - Mobile

Valley Center Storage Project - San Diego County, Summer

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.0200e-003	0.0407	0.1337	5.1000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		51.6819	51.6819	2.4400e-003		51.7428
Unmitigated	9.0200e-003	0.0407	0.1337	5.1000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		51.6819	51.6819	2.4400e-003		51.7428

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	4.00	0.00	0.00	15,288	15,288
Total	4.00	0.00	0.00	15,288	15,288

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

Valley Center Storage Project - San Diego County, Summer

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Valley Center Storage Project - San Diego County, Summer

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

Valley Center Storage Project - San Diego County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

Valley Center Storage Project - San Diego County, Summer

6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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

10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Valley Center Storage Project - San Diego County, Summer

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

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

Equipment Type	Number
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11.0 Vegetation

Valley Center Storage Project - San Diego County, Winter

Valley Center Storage Project
San Diego County, Winter**1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.93	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Valley Center Storage Project - San Diego County, Winter

Project Characteristics -

Land Use - site is 8.93 acres

Construction Phase - construction schedule

Off-road Equipment - ce

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - construction equipment

Off-road Equipment - construction equipment

Trips and VMT - Trips

Vehicle Trips - vehicle trips

Energy Use - Electrical energies

Water And Wastewater - Basic onsite landscaping will be watered 300gal/day

Solid Waste - solid waste is not likely, though 3 ton per year was assumed. Systems will be remotly managed.

Construction Off-road Equipment Mitigation - tier 4

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Valley Center Storage Project - San Diego County, Winter

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	230.00	99.00
tblConstructionPhase	NumDays	230.00	20.00
tblEnergyUse	LightingElect	0.00	12,150.00
tblEnergyUse	NT24E	0.00	4,502,250.00
tblLandUse	LotAcreage	0.00	8.93
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	4.00
tblWater	OutdoorWaterUseRate	0.00	109,500.00

2.0 Emissions Summary

Valley Center Storage Project - San Diego County, Winter

2.1 Overall Construction (Maximum Daily Emission)**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.6370	26.9160	13.2077	0.0245	12.1719	1.3771	13.5490	6.6543	1.2669	7.9212	0.0000	2,378.0310	2,378.0310	0.7333	0.0000	2,396.3622
2021	0.9534	9.0966	8.4337	0.0174	0.2555	0.4042	0.6596	0.0677	0.3853	0.4530	0.0000	1,681.1260	1,681.1260	0.3044	0.0000	1,688.7360
Maximum	2.6370	26.9160	13.2077	0.0245	12.1719	1.3771	13.5490	6.6543	1.2669	7.9212	0.0000	2,378.0310	2,378.0310	0.7333	0.0000	2,396.3622

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	0.3440	1.2765	12.7364	0.0245	12.1719	0.0389	12.2108	6.6543	0.0388	6.6931	0.0000	2,378.0310	2,378.0310	0.7333	0.0000	2,396.3622
2021	0.2817	0.8123	9.6609	0.0174	0.2555	0.0244	0.2798	0.0677	0.0243	0.0920	0.0000	1,681.1260	1,681.1260	0.3044	0.0000	1,688.7360
Maximum	0.3440	1.2765	12.7364	0.0245	12.1719	0.0389	12.2108	6.6543	0.0388	6.6931	0.0000	2,378.0310	2,378.0310	0.7333	0.0000	2,396.3622

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	82.57	94.20	-3.49	0.00	0.00	96.45	12.09	0.00	96.18	18.98	0.00	0.00	0.00	0.00	0.00	0.00

Valley Center Storage Project - San Diego County, Winter

2.2 Overall Operational**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	8.7700e-003	0.0423	0.1272	4.8000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		49.0809	49.0809	2.4100e-003		49.1412
Total	8.7800e-003	0.0423	0.1273	4.8000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		49.0811	49.0811	2.4100e-003	0.0000	49.1414

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	8.7700e-003	0.0423	0.1272	4.8000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		49.0809	49.0809	2.4100e-003		49.1412
Total	8.7800e-003	0.0423	0.1273	4.8000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		49.0811	49.0811	2.4100e-003	0.0000	49.1414

Valley Center Storage Project - San Diego County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/1/2020	10/14/2020	5	10	
2	Grading Access Road	Grading	10/15/2020	11/11/2020	5	20	
3	Building Construction Including Connections	Building Construction	11/12/2020	3/30/2021	5	99	
4	Crane Use to set Units	Building Construction	1/1/2021	1/28/2021	5	20	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 0****Acres of Paving: 0****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)****OffRoad Equipment**

Valley Center Storage Project - San Diego County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading Access Road	Excavators	1	8.00	158	0.38
Grading Access Road	Graders	1	8.00	187	0.41
Grading Access Road	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction Including Connections	Generator Sets	1	8.00	84	0.74
Building Construction Including Connections	Rough Terrain Forklifts	1	8.00	100	0.40
Crane Use to set Units	Cranes	1	7.00	231	0.29

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading Access Road	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction Including Connections	2	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Crane Use to set Units	1	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Valley Center Storage Project - San Diego County, Winter

3.2 Site Preparation - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.0442	0.0000	12.0442	6.6205	0.0000	6.6205			0.0000			0.0000
Off-Road	2.5780	26.8748	12.8226	0.0233		1.3762	1.3762		1.2661	1.2661		2,256.2220	2,256.2220	0.7297		2,274.4647
Total	2.5780	26.8748	12.8226	0.0233	12.0442	1.3762	13.4204	6.6205	1.2661	7.8866		2,256.2220	2,256.2220	0.7297		2,274.4647

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0590	0.0412	0.3851	1.2200e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		121.8090	121.8090	3.5400e-003		121.8975
Total	0.0590	0.0412	0.3851	1.2200e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		121.8090	121.8090	3.5400e-003		121.8975

Valley Center Storage Project - San Diego County, Winter

3.2 Site Preparation - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.0442	0.0000	12.0442	6.6205	0.0000	6.6205			0.0000			0.0000
Off-Road	0.2851	1.2353	12.3513	0.0233		0.0380	0.0380		0.0380	0.0380	0.0000	2,256.2220	2,256.2220	0.7297		2,274.4647
Total	0.2851	1.2353	12.3513	0.0233	12.0442	0.0380	12.0822	6.6205	0.0380	6.6585	0.0000	2,256.2220	2,256.2220	0.7297		2,274.4647

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0590	0.0412	0.3851	1.2200e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		121.8090	121.8090	3.5400e-003		121.8975
Total	0.0590	0.0412	0.3851	1.2200e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		121.8090	121.8090	3.5400e-003		121.8975

Valley Center Storage Project - San Diego County, Winter

3.3 Grading Access Road - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.8003	20.0704	9.2139	0.0203		0.8741	0.8741		0.8041	0.8041		1,970.1796	1,970.1796	0.6372		1,986.1095
Total	1.8003	20.0704	9.2139	0.0203	6.5523	0.8741	7.4264	3.3675	0.8041	4.1716		1,970.1796	1,970.1796	0.6372		1,986.1095

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0472	0.0330	0.3081	9.8000e-004	0.1022	6.9000e-004	0.1029	0.0271	6.4000e-004	0.0277		97.4472	97.4472	2.8300e-003		97.5180
Total	0.0472	0.0330	0.3081	9.8000e-004	0.1022	6.9000e-004	0.1029	0.0271	6.4000e-004	0.0277		97.4472	97.4472	2.8300e-003		97.5180

Valley Center Storage Project - San Diego County, Winter

3.3 Grading Access Road - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	0.2492	1.0800	10.7265	0.0203		0.0332	0.0332		0.0332	0.0332	0.0000	1,970.179 6	1,970.179 6	0.6372		1,986.109 5
Total	0.2492	1.0800	10.7265	0.0203	6.5523	0.0332	6.5856	3.3675	0.0332	3.4007	0.0000	1,970.179 6	1,970.179 6	0.6372		1,986.109 5

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0472	0.0330	0.3081	9.8000e-004	0.1022	6.9000e-004	0.1029	0.0271	6.4000e-004	0.0277		97.4472	97.4472	2.8300e-003		97.5180
Total	0.0472	0.0330	0.3081	9.8000e-004	0.1022	6.9000e-004	0.1029	0.0271	6.4000e-004	0.0277		97.4472	97.4472	2.8300e-003		97.5180

Valley Center Storage Project - San Diego County, Winter

3.4 Building Construction Including Connections - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5326	5.2086	6.0024	0.0100		0.2686	0.2686		0.2628	0.2628		956.7151	956.7151	0.1430		960.2901
Total	0.5326	5.2086	6.0024	0.0100		0.2686	0.2686		0.2628	0.2628		956.7151	956.7151	0.1430		960.2901

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0590	0.0412	0.3851	1.2200e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		121.8090	121.8090	3.5400e-003		121.8975
Total	0.0590	0.0412	0.3851	1.2200e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		121.8090	121.8090	3.5400e-003		121.8975

Valley Center Storage Project - San Diego County, Winter

3.4 Building Construction Including Connections - 2020**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1081	0.4685	6.6666	0.0100		0.0144	0.0144		0.0144	0.0144	0.0000	956.7151	956.7151	0.1430		960.2901
Total	0.1081	0.4685	6.6666	0.0100		0.0144	0.0144		0.0144	0.0144	0.0000	956.7151	956.7151	0.1430		960.2901

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0590	0.0412	0.3851	1.2200e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		121.8090	121.8090	3.5400e-003		121.8975
Total	0.0590	0.0412	0.3851	1.2200e-003	0.1277	8.6000e-004	0.1286	0.0339	7.9000e-004	0.0347		121.8090	121.8090	3.5400e-003		121.8975

Valley Center Storage Project - San Diego County, Winter

3.4 Building Construction Including Connections - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4806	4.7784	5.9789	0.0100		0.2302	0.2302		0.2252	0.2252		956.8039	956.8039	0.1397		960.2974
Total	0.4806	4.7784	5.9789	0.0100		0.2302	0.2302		0.2252	0.2252		956.8039	956.8039	0.1397		960.2974

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0375	0.3599	1.1800e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		117.7129	117.7129	3.2700e-003		117.7946
Total	0.0558	0.0375	0.3599	1.1800e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		117.7129	117.7129	3.2700e-003		117.7946

Valley Center Storage Project - San Diego County, Winter

3.4 Building Construction Including Connections - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1081	0.4685	6.6666	0.0100		0.0144	0.0144		0.0144	0.0144	0.0000	956.8038	956.8038	0.1397		960.2974
Total	0.1081	0.4685	6.6666	0.0100		0.0144	0.0144		0.0144	0.0144	0.0000	956.8038	956.8038	0.1397		960.2974

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0375	0.3599	1.1800e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		117.7129	117.7129	3.2700e-003		117.7946
Total	0.0558	0.0375	0.3599	1.1800e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		117.7129	117.7129	3.2700e-003		117.7946

Valley Center Storage Project - San Diego County, Winter

3.5 Crane Use to set Units - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3613	4.2432	1.7350	5.0500e-003		0.1723	0.1723		0.1585	0.1585		488.8964	488.8964	0.1581		492.8494
Total	0.3613	4.2432	1.7350	5.0500e-003		0.1723	0.1723		0.1585	0.1585		488.8964	488.8964	0.1581		492.8494

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0375	0.3599	1.1800e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		117.7129	117.7129	3.2700e-003		117.7946
Total	0.0558	0.0375	0.3599	1.1800e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		117.7129	117.7129	3.2700e-003		117.7946

Valley Center Storage Project - San Diego County, Winter

3.5 Crane Use to set Units - 2021**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0620	0.2688	2.2744	5.0500e-003		8.2700e-003	8.2700e-003		8.2700e-003	8.2700e-003	0.0000	488.8964	488.8964	0.1581		492.8494
Total	0.0620	0.2688	2.2744	5.0500e-003		8.2700e-003	8.2700e-003		8.2700e-003	8.2700e-003	0.0000	488.8964	488.8964	0.1581		492.8494

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0558	0.0375	0.3599	1.1800e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		117.7129	117.7129	3.2700e-003		117.7946
Total	0.0558	0.0375	0.3599	1.1800e-003	0.1277	8.5000e-004	0.1286	0.0339	7.8000e-004	0.0347		117.7129	117.7129	3.2700e-003		117.7946

4.0 Operational Detail - Mobile

Valley Center Storage Project - San Diego County, Winter

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	8.7700e-003	0.0423	0.1272	4.8000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		49.0809	49.0809	2.4100e-003		49.1412
Unmitigated	8.7700e-003	0.0423	0.1272	4.8000e-004	0.0454	4.0000e-004	0.0458	0.0121	3.7000e-004	0.0125		49.0809	49.0809	2.4100e-003		49.1412

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	4.00	0.00	0.00	15,288	15,288
Total	4.00	0.00	0.00	15,288	15,288

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

Valley Center Storage Project - San Diego County, Winter

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Valley Center Storage Project - San Diego County, Winter

5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

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6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Total	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

7.0 Water Detail**7.1 Mitigation Measures Water****8.0 Waste Detail****8.1 Mitigation Measures Waste****9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Valley Center Storage Project - San Diego County, Winter

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

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

Equipment Type	Number
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11.0 Vegetation

Valley Center Storage Project - San Diego County, Annual

Valley Center Storage Project
San Diego County, Annual**1.0 Project Characteristics**

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	8.93	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2022
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Valley Center Storage Project - San Diego County, Annual

Project Characteristics -

Land Use - site is 8.93 acres

Construction Phase - construction schedule

Off-road Equipment - ce

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - construction equipment

Off-road Equipment - construction equipment

Trips and VMT - Trips

Vehicle Trips - vehicle trips

Energy Use - Electrical energies

Water And Wastewater - Basic onsite landscaping will be watered 300gal/day

Solid Waste - solid waste is not likely, though 3 ton per year was assumed. Systems will be remotly managed.

Construction Off-road Equipment Mitigation - tier 4

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	230.00	99.00
tblConstructionPhase	NumDays	230.00	20.00
tblEnergyUse	LightingElect	0.00	12,150.00
tblEnergyUse	NT24E	0.00	4,502,250.00
tblLandUse	LotAcreage	0.00	8.93
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	4.00
tblWater	OutdoorWaterUseRate	0.00	109,500.00

2.0 Emissions Summary

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2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0421	0.4301	0.2763	5.4000e-004	0.1296	0.0205	0.1501	0.0678	0.0191	0.0869	0.0000	47.1898	47.1898	0.0115	0.0000	47.4780
2021	0.0208	0.1945	0.2207	4.2000e-004	5.1700e-003	9.0100e-003	0.0142	1.3700e-003	8.7100e-003	0.0101	0.0000	36.2534	36.2534	5.5500e-003	0.0000	36.3922
Maximum	0.0421	0.4301	0.2763	5.4000e-004	0.1296	0.0205	0.1501	0.0678	0.0191	0.0869	0.0000	47.1898	47.1898	0.0115	0.0000	47.4780

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	7.4700e-003	0.0267	0.3010	5.4000e-004	0.1296	8.1000e-004	0.1304	0.0678	8.1000e-004	0.0686	0.0000	47.1898	47.1898	0.0115	0.0000	47.4779
2021	6.0600e-003	0.0190	0.2478	4.2000e-004	5.1700e-003	5.7000e-004	5.7500e-003	1.3700e-003	5.7000e-004	1.9400e-003	0.0000	36.2534	36.2534	5.5500e-003	0.0000	36.3922
Maximum	7.4700e-003	0.0267	0.3010	5.4000e-004	0.1296	8.1000e-004	0.1304	0.0678	8.1000e-004	0.0686	0.0000	47.1898	47.1898	0.0115	0.0000	47.4779

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	78.48	92.69	-10.42	0.00	0.00	95.32	17.11	0.00	95.04	27.28	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2021	3-31-2021	0.2171	0.0255
		Highest	0.2171	0.0255

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.1200e-003	5.5000e-003	0.0165	6.0000e-005	5.7600e-003	5.0000e-005	5.8100e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.8356	5.8356	2.8000e-004	0.0000	5.8427
Waste						0.0000	0.0000		0.0000	0.0000	0.6090	0.0000	0.6090	0.0360	0.0000	1.5087
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.3976	0.3976	2.0000e-005	0.0000	0.3990
Total	1.1200e-003	5.5000e-003	0.0165	6.0000e-005	5.7600e-003	5.0000e-005	5.8100e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.6090	6.2332	6.8422	0.0363	0.0000	7.7504

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2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.1200e-003	5.5000e-003	0.0165	6.0000e-005	5.7600e-003	5.0000e-005	5.8100e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.8356	5.8356	2.8000e-004	0.0000	5.8427
Waste						0.0000	0.0000		0.0000	0.0000	0.6090	0.0000	0.6090	0.0360	0.0000	1.5087
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.3976	0.3976	2.0000e-005	0.0000	0.3990
Total	1.1200e-003	5.5000e-003	0.0165	6.0000e-005	5.7600e-003	5.0000e-005	5.8100e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.6090	6.2332	6.8422	0.0363	0.0000	7.7504

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/1/2020	10/14/2020	5	10	
2	Grading Access Road	Grading	10/15/2020	11/11/2020	5	20	
3	Building Construction Including Connections	Building Construction	11/12/2020	3/30/2021	5	99	
4	Crane Use to set Units	Building Construction	1/1/2021	1/28/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading Access Road	Excavators	1	8.00	158	0.38
Grading Access Road	Graders	1	8.00	187	0.41
Grading Access Road	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction Including Connections	Generator Sets	1	8.00	84	0.74
Building Construction Including Connections	Rough Terrain Forklifts	1	8.00	100	0.40
Crane Use to set Units	Cranes	1	7.00	231	0.29

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading Access Road	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction Including Connections	2	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Crane Use to set Units	1	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Site Preparation - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1344	0.0641	1.2000e-004		6.8800e-003	6.8800e-003		6.3300e-003	6.3300e-003	0.0000	10.2341	10.2341	3.3100e-003	0.0000	10.3168
Total	0.0129	0.1344	0.0641	1.2000e-004	0.0602	6.8800e-003	0.0671	0.0331	6.3300e-003	0.0394	0.0000	10.2341	10.2341	3.3100e-003	0.0000	10.3168

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3.2 Site Preparation - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	2.0000e-004	1.9400e-003	1.0000e-005	6.2000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5581	0.5581	2.0000e-005	0.0000	0.5585
Total	2.6000e-004	2.0000e-004	1.9400e-003	1.0000e-005	6.2000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5581	0.5581	2.0000e-005	0.0000	0.5585

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0602	0.0000	0.0602	0.0331	0.0000	0.0331	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4300e-003	6.1800e-003	0.0618	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.2340	10.2340	3.3100e-003	0.0000	10.3168
Total	1.4300e-003	6.1800e-003	0.0618	1.2000e-004	0.0602	1.9000e-004	0.0604	0.0331	1.9000e-004	0.0333	0.0000	10.2340	10.2340	3.3100e-003	0.0000	10.3168

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3.2 Site Preparation - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	2.0000e-004	1.9400e-003	1.0000e-005	6.2000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5581	0.5581	2.0000e-005	0.0000	0.5585
Total	2.6000e-004	2.0000e-004	1.9400e-003	1.0000e-005	6.2000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.5581	0.5581	2.0000e-005	0.0000	0.5585

3.3 Grading Access Road - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0180	0.2007	0.0921	2.0000e-004		8.7400e-003	8.7400e-003		8.0400e-003	8.0400e-003	0.0000	17.8732	17.8732	5.7800e-003	0.0000	18.0177
Total	0.0180	0.2007	0.0921	2.0000e-004	0.0655	8.7400e-003	0.0743	0.0337	8.0400e-003	0.0417	0.0000	17.8732	17.8732	5.7800e-003	0.0000	18.0177

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3.3 Grading Access Road - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	3.2000e-004	3.1000e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0000e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8929	0.8929	3.0000e-005	0.0000	0.8936
Total	4.1000e-004	3.2000e-004	3.1000e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0000e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8929	0.8929	3.0000e-005	0.0000	0.8936

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4900e-003	0.0108	0.1073	2.0000e-004		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	17.8732	17.8732	5.7800e-003	0.0000	18.0177
Total	2.4900e-003	0.0108	0.1073	2.0000e-004	0.0655	3.3000e-004	0.0659	0.0337	3.3000e-004	0.0340	0.0000	17.8732	17.8732	5.7800e-003	0.0000	18.0177

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3.3 Grading Access Road - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1000e-004	3.2000e-004	3.1000e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0000e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8929	0.8929	3.0000e-005	0.0000	0.8936
Total	4.1000e-004	3.2000e-004	3.1000e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0000e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8929	0.8929	3.0000e-005	0.0000	0.8936

3.4 Building Construction Including Connections - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5900e-003	0.0938	0.1080	1.8000e-004		4.8300e-003	4.8300e-003		4.7300e-003	4.7300e-003	0.0000	15.6225	15.6225	2.3400e-003	0.0000	15.6809
Total	9.5900e-003	0.0938	0.1080	1.8000e-004		4.8300e-003	4.8300e-003		4.7300e-003	4.7300e-003	0.0000	15.6225	15.6225	2.3400e-003	0.0000	15.6809

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3.4 Building Construction Including Connections - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	7.3000e-004	6.9800e-003	2.0000e-005	2.2400e-003	2.0000e-005	2.2600e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	2.0091	2.0091	6.0000e-005	0.0000	2.0105
Total	9.3000e-004	7.3000e-004	6.9800e-003	2.0000e-005	2.2400e-003	2.0000e-005	2.2600e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	2.0091	2.0091	6.0000e-005	0.0000	2.0105

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9500e-003	8.4300e-003	0.1200	1.8000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	15.6225	15.6225	2.3400e-003	0.0000	15.6809
Total	1.9500e-003	8.4300e-003	0.1200	1.8000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	15.6225	15.6225	2.3400e-003	0.0000	15.6809

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3.4 Building Construction Including Connections - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.3000e-004	7.3000e-004	6.9800e-003	2.0000e-005	2.2400e-003	2.0000e-005	2.2600e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	2.0091	2.0091	6.0000e-005	0.0000	2.0105
Total	9.3000e-004	7.3000e-004	6.9800e-003	2.0000e-005	2.2400e-003	2.0000e-005	2.2600e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	2.0091	2.0091	6.0000e-005	0.0000	2.0105

3.4 Building Construction Including Connections - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0151	0.1505	0.1883	3.2000e-004		7.2500e-003	7.2500e-003		7.0900e-003	7.0900e-003	0.0000	27.3419	27.3419	3.9900e-003	0.0000	27.4418
Total	0.0151	0.1505	0.1883	3.2000e-004		7.2500e-003	7.2500e-003		7.0900e-003	7.0900e-003	0.0000	27.3419	27.3419	3.9900e-003	0.0000	27.4418

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3.4 Building Construction Including Connections - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5400e-003	1.1600e-003	0.0114	4.0000e-005	3.9300e-003	3.0000e-005	3.9500e-003	1.0400e-003	2.0000e-005	1.0700e-003	0.0000	3.3977	3.3977	9.0000e-005	0.0000	3.4000
Total	1.5400e-003	1.1600e-003	0.0114	4.0000e-005	3.9300e-003	3.0000e-005	3.9500e-003	1.0400e-003	2.0000e-005	1.0700e-003	0.0000	3.3977	3.3977	9.0000e-005	0.0000	3.4000

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4100e-003	0.0148	0.2100	3.2000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	27.3419	27.3419	3.9900e-003	0.0000	27.4417
Total	3.4100e-003	0.0148	0.2100	3.2000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	27.3419	27.3419	3.9900e-003	0.0000	27.4417

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3.4 Building Construction Including Connections - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5400e-003	1.1600e-003	0.0114	4.0000e-005	3.9300e-003	3.0000e-005	3.9500e-003	1.0400e-003	2.0000e-005	1.0700e-003	0.0000	3.3977	3.3977	9.0000e-005	0.0000	3.4000
Total	1.5400e-003	1.1600e-003	0.0114	4.0000e-005	3.9300e-003	3.0000e-005	3.9500e-003	1.0400e-003	2.0000e-005	1.0700e-003	0.0000	3.3977	3.3977	9.0000e-005	0.0000	3.4000

3.5 Crane Use to set Units - 2021**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6100e-003	0.0424	0.0174	5.0000e-005		1.7200e-003	1.7200e-003		1.5800e-003	1.5800e-003	0.0000	4.4352	4.4352	1.4300e-003	0.0000	4.4711
Total	3.6100e-003	0.0424	0.0174	5.0000e-005		1.7200e-003	1.7200e-003		1.5800e-003	1.5800e-003	0.0000	4.4352	4.4352	1.4300e-003	0.0000	4.4711

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3.5 Crane Use to set Units - 2021**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.7000e-004	3.6300e-003	1.0000e-005	1.2500e-003	1.0000e-005	1.2600e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0786	1.0786	3.0000e-005	0.0000	1.0794
Total	4.9000e-004	3.7000e-004	3.6300e-003	1.0000e-005	1.2500e-003	1.0000e-005	1.2600e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0786	1.0786	3.0000e-005	0.0000	1.0794

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.2000e-004	2.6900e-003	0.0227	5.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	4.4352	4.4352	1.4300e-003	0.0000	4.4711
Total	6.2000e-004	2.6900e-003	0.0227	5.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	4.4352	4.4352	1.4300e-003	0.0000	4.4711

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3.5 Crane Use to set Units - 2021**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.7000e-004	3.6300e-003	1.0000e-005	1.2500e-003	1.0000e-005	1.2600e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0786	1.0786	3.0000e-005	0.0000	1.0794
Total	4.9000e-004	3.7000e-004	3.6300e-003	1.0000e-005	1.2500e-003	1.0000e-005	1.2600e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.0786	1.0786	3.0000e-005	0.0000	1.0794

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1200e-003	5.5000e-003	0.0165	6.0000e-005	5.7600e-003	5.0000e-005	5.8100e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.8356	5.8356	2.8000e-004	0.0000	5.8427
Unmitigated	1.1200e-003	5.5000e-003	0.0165	6.0000e-005	5.7600e-003	5.0000e-005	5.8100e-003	1.5400e-003	5.0000e-005	1.5900e-003	0.0000	5.8356	5.8356	2.8000e-004	0.0000	5.8427

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	4.00	0.00	0.00	15,288	15,288
Total	4.00	0.00	0.00	15,288	15,288

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.598645	0.040929	0.181073	0.106149	0.015683	0.005479	0.016317	0.023976	0.001926	0.001932	0.006016	0.000753	0.001122

5.0 Energy Detail

Historical Energy Use: N

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5.1 Mitigation Measures Energy

[illegible]

5.2 Energy by Land Use - NaturalGas

Unmitigated

[illegible]

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5.2 Energy by Land Use - NaturalGas**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail**6.1 Mitigation Measures Area**

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

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6.2 Area by SubCategory**Unmitigated**

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

Mitigated

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

7.0 Water Detail

Valley Center Storage Project - San Diego County, Annual

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.3976	2.0000e-005	0.0000	0.3990
Unmitigated	0.3976	2.0000e-005	0.0000	0.3990

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0.1095	0.3976	2.0000e-005	0.0000	0.3990
Total		0.3976	2.0000e-005	0.0000	0.3990

Valley Center Storage Project - San Diego County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0.1095	0.3976	2.0000e-005	0.0000	0.3990
Total		0.3976	2.0000e-005	0.0000	0.3990

8.0 Waste Detail**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.6090	0.0360	0.0000	1.5087
Unmitigated	0.6090	0.0360	0.0000	1.5087

Valley Center Storage Project - San Diego County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	3	0.6090	0.0360	0.0000	1.5087
Total		0.6090	0.0360	0.0000	1.5087

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	3	0.6090	0.0360	0.0000	1.5087
Total		0.6090	0.0360	0.0000	1.5087

9.0 Operational Offroad

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

Valley Center Storage Project - San Diego County, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number
----------------	--------

11.0 Vegetation

ATTACHMENT B

AERMOD - Unmitigated

1 AERMOD PRIME - (DATED 19191)
AERMODPrMSPx VERSION
(C) COPYRIGHT 1998-2017, Trinity Consultants

Run Began on 4/29/2020 at 16:14:27

** BREEZE AERMOD
** Trinity Consultants
** VERSION 9.0

CO STARTING
CO TITLEONE PM10 Exhaust Unmitigated
CO MODELOPT DEFAULT CONC NODRYDPLT NOWETDPLT
CO RUNORNOT RUN
CO AVERTIME ANNUAL
CO POLLUTID PM10
CO FINISHED

SO STARTING
SO ELEVUNIT METERS
SO LOCATION KBXFP000 AREAPOLY 498287 3676568.5 0
** SRCDESCR Area Source
SO SRCPARAM KBXFP000 4.74E-08 3 7 1
SO AREAVERT KBXFP000 498287 3676568.5 498146.3 3676564.8 498093.2 3676408.7 498349.4 3676406.2
SO AREAVERT KBXFP000 498412.3 3676521 498279 3676493.8 498287 3676568.5
SO SRCGROUP ALL
SO FINISHED

RE STARTING
RE ELEVUNIT METERS
RE DISCCART 498306.8 3676546.2 0 0
** SENSITIV
** RCPDESCR R1
RE DISCCART 498544.9 3676520 0 0
** SENSITIV
** RCPDESCR R2
RE DISCCART 498088.4 3676439.8 0 0
** SENSITIV
** RCPDESCR R3
RE DISCCART 498118.6 3676674.4 0 0
** SENSITIV
** RCPDESCR R4
RE DISCCART 498574.1 3676745.8 0 0
** SENSITIV
** RCPDESCR R5
RE FINISHED

ME STARTING
ME SURFFILE "C:\Users\ryan\OneDrive\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.SFC"
** SURFFILE "C:\Users\ryan\OneDrive\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.SFC"
ME PROFFILE "C:\Users\ryan\OneDrive\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.PFL"
** PROFFILE "C:\Users\ryan\OneDrive\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.PFL"
ME SURFDATA 53120 2012
ME UAIRDATA 3190 2012
ME SITEDATA 00001002 2012
ME PROFBASE 0 METERS
ME FINISHED

OU STARTING
OU FILEFORM FIX
OU PLOTFILE ANNUAL ALL ALL`ANNUAL.plt 10000
OU FINISHED

** *****
** It is recommended that the user not edit any data below this line
** *****

```

** AMPTYPE
** AMPDATUM -1
** AMPZONE -1
** AMPHEMISPHERE

** PROJECTIONWKT
PROJCS["UTM_6326_Zone11",GEOGCS["WGS_84",DATUM["World_Geodetic_System_1984",SPHEROID["WGS_1984",6378137,298.2572235
63],TOWGS84[0,0,0,0,0,0,0]],PRIMEM["Greenwich",0],UNIT["Degree",0.0174532925199433]],PROJECTION["Universal_Transver
se_Mercator"],PARAMETER["Zone",11],UNIT["Meter",1,AUTHORITY["EPSG","9001"]]]]
** PROJECTION UTM
** DATUM WGE
** UNITS METER
** ZONE 11
** HEMISPHERE N
** ORIGINLON 0
** ORIGINLAT 0
** PARALLEL1 0
** PARALLEL2 0
** AZIMUTH 0
** SCALEFACT 0
** FALSEEAST 0
** FALSENORTH 0

** POSTFMT UNFORM
** TEMPLATE USERDEFINED
** AERMODEXE AERMOD_BREEZE_19191_64.EXE
** AERMAPEXE AERMAP_EPA_18081_64.EXE

```

*** Message Summary For AERMOD Model Setup ***

----- Summary of Total Messages -----

```

A Total of      0 Fatal Error Message(s)
A Total of      2 Warning Message(s)
A Total of      0 Informational Message(s)

```

```

***** FATAL ERROR MESSAGES *****
*** NONE ***

```

```

***** WARNING MESSAGES *****
ME W186      58      MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used      0.40
MX W403      58      PFLCNV: Turbulence data is being used w/o ADJ_U* option      SigA Data

```

```

*****
*** SETUP Finishes Successfully ***
*****

```

```

^ *** AERMOD - VERSION 19191 *** *** PM10 Exhaust Unmitigated ***
04/29/20
*** AERMET - VERSION 15181 *** ***
16:14:27

```

```

PAGE 1
*** MODELOPTs: RegDFault CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

```

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCentration Values.

```

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F

```

```

**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses RURAL Dispersion Only.

**Model Uses Regulatory DEFAULT Options:
    1. Stack-tip Downwash.
    2. Model Accounts for ELEvated Terrain Effects.
    3. Use Calms Processing Routine.
    4. Use Missing Data Processing Routine.
    5. No Exponential Decay.

**Other Options Specified:
    CCVR_Sub - Meteorological data includes CCVR substitutions
    TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: PM10

**Model Calculates ANNUAL Averages Only

**This Run Includes:      1 Source(s);      1 Source Group(s); and      5 Receptor(s)

    with:      0 POINT(s), including
               0 POINTCAP(s) and      0 POINTHOR(s)
    and:      0 VOLUME source(s)
    and:      1 AREA type source(s)
    and:      0 LINE source(s)
    and:      0 RLINE/RLINEXT source(s)
    and:      0 OPENPIT source(s)
    and:      0 BUOYANT LINE source(s) with      0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 15181

**Output Options Selected:
    Model Outputs Tables of ANNUAL Averages by Receptor
    Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) =      0.00 ; Decay Coef. =      0.000      ; Rot. Angle
=      0.0
    Emission Units = GRAMS/SEC                                ; Emission Rate Unit Factor =
0.10000E+07
    Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.5 MB of RAM.

**Input Runstream File:      aermod.inp

**Output Print File:      aermod.out

^ *** AERMOD - VERSION 19191 ***      *** PM10 Exhaust Unmitigated      ***
    04/29/20
*** AERMET - VERSION 15181 ***      ***
    16:14:27

PAGE 2
*** MODELOPTs: RegDEFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

```

*** AREAPOLY SOURCE DATA ***

Surface file: C:\Users\ryan\OneDrive\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.S Met Version:
 15181
 Profile file: C:\Users\ryan\OneDrive\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.P
 Surface format: FREE

Profile format: FREE

Surface station no.: 53120 Upper air station no.: 3190
 Name: UNKNOWN Name: UNKNOWN
 Year: 2012 Year: 2012

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS	WD	HT	REF	TA
HT																					
10.0	12	01	01	1	01	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	51.	10.0	282.5		
10.0	12	01	01	1	02	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	64.	10.0	281.9		
10.0	12	01	01	1	03	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	31.	10.0	280.9		
10.0	12	01	01	1	04	-2.9	0.056	-9.000	-9.000	-999.	32.	5.5	0.15	1.10	1.00	1.18	130.	10.0	280.4		
10.0	12	01	01	1	05	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	47.	10.0	280.4		
10.0	12	01	01	1	06	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	39.	10.0	279.8		
10.0	12	01	01	1	07	-0.7	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	60.	10.0	279.2		
10.0	12	01	01	1	08	-0.5	0.029	-9.000	-9.000	-999.	12.	4.0	0.47	1.10	0.50	0.44	42.	10.0	280.4		
10.0	12	01	01	1	09	33.3	0.106	0.323	0.014	36.	83.	-3.2	0.47	1.10	0.30	0.44	44.	10.0	285.4		
10.0	12	01	01	1	10	85.9	0.121	0.634	0.011	106.	101.	-1.8	0.48	1.10	0.23	0.44	232.	10.0	291.4		
10.0	12	01	01	1	11	123.6	0.252	0.982	0.005	273.	303.	-11.5	0.48	1.10	0.21	1.34	242.	10.0	297.5		
10.0	12	01	01	1	12	141.2	0.255	1.253	0.005	496.	309.	-10.4	0.48	1.10	0.20	1.34	249.	10.0	299.8		
10.0	12	01	01	1	13	139.0	0.308	1.399	0.005	700.	410.	-18.6	0.48	1.10	0.20	1.78	244.	10.0	300.4		
10.0	12	01	01	1	14	118.4	0.303	1.510	0.005	1033.	401.	-20.9	0.48	1.10	0.21	1.78	241.	10.0	301.4		
10.0	12	01	01	1	15	79.3	0.291	1.390	0.005	1204.	377.	-27.6	0.48	1.10	0.24	1.78	260.	10.0	301.4		
10.0	12	01	01	1	16	24.5	0.162	0.951	0.005	1244.	167.	-15.4	0.51	1.10	0.34	0.89	292.	10.0	299.8		
10.0	12	01	01	1	17	-2.5	0.060	-9.000	-9.000	-999.	45.	7.5	0.51	1.10	0.61	0.89	282.	10.0	296.9		
10.0	12	01	01	1	18	-0.6	0.029	-9.000	-9.000	-999.	12.	3.4	0.47	1.10	1.00	0.44	10.	10.0	293.1		
10.0	12	01	01	1	19	-4.0	0.066	-9.000	-9.000	-999.	40.	6.3	0.11	1.10	1.00	1.48	329.	10.0	290.4		
10.0	12	01	01	1	20	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	65.	10.0	288.1		
10.0	12	01	01	1	21	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	61.	10.0	286.4		
10.0	12	01	01	1	22	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	33.	10.0	285.4		
10.0	12	01	01	1	23	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	50.	10.0	284.2		
10.0	12	01	01	1	24	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	42.	10.0	283.1		

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
12	01	01	01	10.0	1	51.	0.44	282.6	30.0	-99.00	0.20

F indicates top of profile (=1) or below (=0)

*** AERMOD - VERSION 19191 *** PM10 Exhaust Unmitigated ***
04/29/20
*** AERMET - VERSION 15181 *** ***
16:14:27

PAGE 6

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL

INCLUDING SOURCE(S): KBXFP000 ,

*** SENSITIVE DISCRETE RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3

**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
498306.80	3676546.20	0.43074	498544.90	3676520.00	0.12501
498088.40	3676439.80	0.73726	498118.60	3676674.40	0.08475
498574.10	3676745.80	0.03601			

*** AERMOD - VERSION 19191 *** PM10 Exhaust Unmitigated ***
04/29/20
*** AERMET - VERSION 15181 *** ***
16:14:27

PAGE 7

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 1 YEARS ***

** CONC OF PM10 IN MICROGRAMS/M**3

**

NETWORK
GROUP ID
GRID-ID

AVERAGE CONC

RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE

ALL	1ST HIGHEST VALUE IS	0.73726 AT (498088.40, 3676439.80, 0.00, 0.00, 0.00)	SR
	2ND HIGHEST VALUE IS	0.43074 AT (498306.80, 3676546.20, 0.00, 0.00, 0.00)	SR
	3RD HIGHEST VALUE IS	0.12501 AT (498544.90, 3676520.00, 0.00, 0.00, 0.00)	SR
	4TH HIGHEST VALUE IS	0.08475 AT (498118.60, 3676674.40, 0.00, 0.00, 0.00)	SR
	5TH HIGHEST VALUE IS	0.03601 AT (498574.10, 3676745.80, 0.00, 0.00, 0.00)	SR
	6TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)	
	7TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)	
	8TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)	
	9TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)	
	10TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** AERMOD - VERSION 19191 *** PM10 Exhaust Unmitigated ***

04/29/20
*** AERMET - VERSION 15181 *** ***
16:14:27

PAGE 8
*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 378 Informational Message(s)

A Total of 8784 Hours Were Processed
A Total of 250 Calm Hours Identified
A Total of 128 Missing Hours Identified (1.46 Percent)

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
ME W186 58 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used 0.40
MX W403 58 PFLCNV: Turbulence data is being used w/o ADJ_U* option SigA Data

*** AERMOD Finishes Successfully ***

ATTACHMENT C

AERMOD - Mitigated

1 AERMOD PRIME - (DATED 19191)
AERMODPrMSPx VERSION
(C) COPYRIGHT 1998-2017, Trinity Consultants

Run Began on 4/29/2020 at 16:15:50

** BREEZE AERMOD
** Trinity Consultants
** VERSION 9.0

CO STARTING
CO TITLEONE PM10 Exhaust Mitigated
CO MODELOPT DEFAULT CONC NODRYDPLT NOWETDPLT
CO RUNORNOT RUN
CO AVERTIME ANNUAL
CO POLLUTID PM10
CO FINISHED

SO STARTING
SO ELEVUNIT METERS
SO LOCATION KBXFP000 AREAPOLY 498287 3676568.5 0
** SRCDESCR Area Source
SO SRCPARAM KBXFP000 2.11E-09 3 7 1
SO AREAVERT KBXFP000 498287 3676568.5 498146.3 3676564.8 498093.2 3676408.7 498349.4 3676406.2
SO AREAVERT KBXFP000 498412.3 3676521 498279 3676493.8 498287 3676568.5
SO SRCGROUP ALL
SO FINISHED

RE STARTING
RE ELEVUNIT METERS
RE DISCCART 498306.8 3676546.2 0 0
** SENSITIV
** RCPDESCR R1
RE DISCCART 498544.9 3676520 0 0
** SENSITIV
** RCPDESCR R2
RE DISCCART 498088.4 3676439.8 0 0
** SENSITIV
** RCPDESCR R3
RE DISCCART 498118.6 3676674.4 0 0
** SENSITIV
** RCPDESCR R4
RE DISCCART 498574.1 3676745.8 0 0
** SENSITIV
** RCPDESCR R5
RE FINISHED

ME STARTING
ME SURFFILE "C:\USERS\RYAN\ONEDRIVE\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.SFC"
** SURFFILE "C:\USERS\RYAN\ONEDRIVE\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.SFC"
ME PROFFILE "C:\USERS\RYAN\ONEDRIVE\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.PFL"
** PROFFILE "C:\USERS\RYAN\ONEDRIVE\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.PFL"
ME SURFDATA 53120 2012
ME UAIRDATA 3190 2012
ME SITEDATA 00001002 2012
ME PROFBASE 0 METERS
ME FINISHED

OU STARTING
OU FILEFORM FIX
OU PLOTFILE ANNUAL ALL ALL`ANNUAL.plt 10000
OU FINISHED

** *****
** It is recommended that the user not edit any data below this line
** *****

```

** AMPTYPE
** AMPDATUM -1
** AMPZONE -1
** AMPHEMISPHERE

** PROJECTIONWKT
PROJCS["UTM_6326_Zone11",GEOGCS["WGS_84",DATUM["World_Geodetic_System_1984",SPHEROID["WGS_1984",6378137,298.2572235
63],TOWGS84[0,0,0,0,0,0,0]],PRIMEM["Greenwich",0],UNIT["Degree",0.0174532925199433]],PROJECTION["Universal_Transver
se_Mercator"],PARAMETER["Zone",11],UNIT["Meter",1,AUTHORITY["EPSG","9001"]]]]
** PROJECTION UTM
** DATUM WGE
** UNITS METER
** ZONE 11
** HEMISPHERE N
** ORIGINLON 0
** ORIGINLAT 0
** PARALLEL1 0
** PARALLEL2 0
** AZIMUTH 0
** SCALEFACT 0
** FALSEEAST 0
** FALSENORTH 0

** POSTFMT UNIFORM
** TEMPLATE USERDEFINED
** AERMODEXE AERMOD_BREEZE_19191_64.EXE
** AERMAPEXE AERMAP_EPA_18081_64.EXE

```

*** Message Summary For AERMOD Model Setup ***

----- Summary of Total Messages -----

```

A Total of      0 Fatal Error Message(s)
A Total of      2 Warning Message(s)
A Total of      0 Informational Message(s)

```

***** FATAL ERROR MESSAGES *****
 *** NONE ***

***** WARNING MESSAGES *****

ME W186	58	MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used	0.40
MX W403	58	PFLCNV: Turbulence data is being used w/o ADJ_U* option	SigA Data

 *** SETUP Finishes Successfully ***

```

^ *** AERMOD - VERSION 19191 *** *** PM10 Exhaust Mitigated ***
   04/29/20
*** AERMET - VERSION 15181 *** ***
   16:15:50

```

PAGE 1
 *** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCentration Values.

```

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F

```

```

**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses RURAL Dispersion Only.

**Model Uses Regulatory DEFAULT Options:
    1. Stack-tip Downwash.
    2. Model Accounts for ELEvated Terrain Effects.
    3. Use Calms Processing Routine.
    4. Use Missing Data Processing Routine.
    5. No Exponential Decay.

**Other Options Specified:
    CCVR_Sub - Meteorological data includes CCVR substitutions
    TEMP_Sub - Meteorological data includes TEMP substitutions

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: PM10

**Model Calculates ANNUAL Averages Only

**This Run Includes:      1 Source(s);      1 Source Group(s); and      5 Receptor(s)

    with:      0 POINT(s), including
               0 POINTCAP(s) and      0 POINTHOR(s)
    and:      0 VOLUME source(s)
    and:      1 AREA type source(s)
    and:      0 LINE source(s)
    and:      0 RLINE/RLINEXT source(s)
    and:      0 OPENPIT source(s)
    and:      0 BUOYANT LINE source(s) with      0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 15181

**Output Options Selected:
    Model Outputs Tables of ANNUAL Averages by Receptor
    Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) =      0.00 ; Decay Coef. =      0.000      ; Rot. Angle
=      0.0
Emission Units = GRAMS/SEC                                ; Emission Rate Unit Factor =
0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.5 MB of RAM.

**Input Runstream File:      aermod.inp

**Output Print File:      aermod.out

^ *** AERMOD - VERSION 19191 ***      *** PM10 Exhaust Mitigated      ***
    04/29/20
*** AERMET - VERSION 15181 ***      ***
    16:15:50

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*** MODELOPTs: RegDEFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

```

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
-----------	--------------------	-------------------------------------	-----------------------------	------------	---------------------	-------------------------	------------------	-------------------	--------------	------------------------------

KBXFP000	0	0.21100E-08	498287.0	3676568.5	0.0	3.00	7	1.00	NO	
*** AERMOD - VERSION 19191 *** PM10 Exhaust Mitigated ***										
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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
-------------	------------

ALL	KBXFP000	,								
*** AERMOD - VERSION 19191 *** PM10 Exhaust Mitigated ***										
04/29/20										
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16:15:50										

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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1			

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

			1.54,	3.09,	5.14,	8.23,	10.80,	
*** AERMOD - VERSION 19191 *** PM10 Exhaust Mitigated ***								
04/29/20								
*** AERMET - VERSION 15181 *** ***								
16:15:50								

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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: C:\USERS\RYAN\ONEDRIVE\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.S Met Version: 15181
 Profile file: C:\USERS\RYAN\ONEDRIVE\LDNONE~2\COUNTY~4\20-23V~1\AERMOD\ESCONDIDO-2012-V15181.P
 Surface format: FREE

Profile format: FREE

Surface station no.: 53120 Upper air station no.: 3190
 Name: UNKNOWN Name: UNKNOWN
 Year: 2012 Year: 2012

First 24 hours of scalar data																							
YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA				
				HT																			
10.0	12	01	01	1	01	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	51.	10.0	282.5				
10.0	12	01	01	1	02	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	64.	10.0	281.9				
10.0	12	01	01	1	03	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	31.	10.0	280.9				
10.0	12	01	01	1	04	-2.9	0.056	-9.000	-9.000	-999.	32.	5.5	0.15	1.10	1.00	1.18	130.	10.0	280.4				
10.0	12	01	01	1	05	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	47.	10.0	280.4				
10.0	12	01	01	1	06	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	39.	10.0	279.8				
10.0	12	01	01	1	07	-0.7	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	60.	10.0	279.2				
10.0	12	01	01	1	08	-0.5	0.029	-9.000	-9.000	-999.	12.	4.0	0.47	1.10	0.50	0.44	42.	10.0	280.4				
10.0	12	01	01	1	09	33.3	0.106	0.323	0.014	36.	83.	-3.2	0.47	1.10	0.30	0.44	44.	10.0	285.4				
10.0	12	01	01	1	10	85.9	0.121	0.634	0.011	106.	101.	-1.8	0.48	1.10	0.23	0.44	232.	10.0	291.4				
10.0	12	01	01	1	11	123.6	0.252	0.982	0.005	273.	303.	-11.5	0.48	1.10	0.21	1.34	242.	10.0	297.5				
10.0	12	01	01	1	12	141.2	0.255	1.253	0.005	496.	309.	-10.4	0.48	1.10	0.20	1.34	249.	10.0	299.8				
10.0	12	01	01	1	13	139.0	0.308	1.399	0.005	700.	410.	-18.6	0.48	1.10	0.20	1.78	244.	10.0	300.4				
10.0	12	01	01	1	14	118.4	0.303	1.510	0.005	1033.	401.	-20.9	0.48	1.10	0.21	1.78	241.	10.0	301.4				
10.0	12	01	01	1	15	79.3	0.291	1.390	0.005	1204.	377.	-27.6	0.48	1.10	0.24	1.78	260.	10.0	301.4				
10.0	12	01	01	1	16	24.5	0.162	0.951	0.005	1244.	167.	-15.4	0.51	1.10	0.34	0.89	292.	10.0	299.8				
10.0	12	01	01	1	17	-2.5	0.060	-9.000	-9.000	-999.	45.	7.5	0.51	1.10	0.61	0.89	282.	10.0	296.9				
10.0	12	01	01	1	18	-0.6	0.029	-9.000	-9.000	-999.	12.	3.4	0.47	1.10	1.00	0.44	10.	10.0	293.1				
10.0	12	01	01	1	19	-4.0	0.066	-9.000	-9.000	-999.	40.	6.3	0.11	1.10	1.00	1.48	329.	10.0	290.4				
10.0	12	01	01	1	20	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	65.	10.0	288.1				
10.0	12	01	01	1	21	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	61.	10.0	286.4				
10.0	12	01	01	1	22	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	33.	10.0	285.4				
10.0	12	01	01	1	23	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	50.	10.0	284.2				
10.0	12	01	01	1	24	-0.6	0.029	-9.000	-9.000	-999.	12.	3.3	0.47	1.10	1.00	0.44	42.	10.0	283.1				

First hour of profile data
 YR MO DY HR HEIGHT F WDIR WSPD AMB_TMP sigmaA sigmaW sigmaV
 12 01 01 01 10.0 1 51. 0.44 282.6 30.0 -99.00 0.20

F indicates top of profile (=1) or below (=0)

*** AERMOD - VERSION 19191 *** PM10 Exhaust Mitigated ***
04/29/20
*** AERMET - VERSION 15181 *** ***
16:15:50 ***

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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL

INCLUDING SOURCE(S): KBXFP000 ,

*** SENSITIVE DISCRETE RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3

**

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
498306.80	3676546.20	0.01917	498544.90	3676520.00	0.00556
498088.40	3676439.80	0.03282	498118.60	3676674.40	0.00377
498574.10	3676745.80	0.00160			

*** AERMOD - VERSION 19191 *** PM10 Exhaust Mitigated ***
04/29/20
*** AERMET - VERSION 15181 *** ***
16:15:50 ***

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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 1 YEARS ***

** CONC OF PM10 IN MICROGRAMS/M**3

**

NETWORK
GROUP ID
GRID-ID

AVERAGE CONC

RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE

ALL	1ST HIGHEST VALUE IS	0.03282 AT (498088.40, 3676439.80, 0.00, 0.00, 0.00)	SR
	2ND HIGHEST VALUE IS	0.01917 AT (498306.80, 3676546.20, 0.00, 0.00, 0.00)	SR
	3RD HIGHEST VALUE IS	0.00556 AT (498544.90, 3676520.00, 0.00, 0.00, 0.00)	SR
	4TH HIGHEST VALUE IS	0.00377 AT (498118.60, 3676674.40, 0.00, 0.00, 0.00)	SR
	5TH HIGHEST VALUE IS	0.00160 AT (498574.10, 3676745.80, 0.00, 0.00, 0.00)	SR
	6TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)	
	7TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)	
	8TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)	
	9TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)	
	10TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** AERMOD - VERSION 19191 *** PM10 Exhaust Mitigated ***


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04/29/20
*** AERMET - VERSION 15181 *** ***
16:15:50

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*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of          0 Fatal Error Message(s)
A Total of          2 Warning Message(s)
A Total of         378 Informational Message(s)

A Total of          8784 Hours Were Processed

A Total of          250 Calm Hours Identified

A Total of          128 Missing Hours Identified ( 1.46 Percent)

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
ME W186      58      MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used      0.40
MX W403      58      PFLCNV: Turbulence data is being used w/o ADJ_U* option      SigA Data

*****
*** AERMOD Finishes Successfully ***
*****

```

ATTACHMENT D

Health Risk Calculations - Construction

Air Quality Health Risk Calculations (Worst-Case)						
Valley Center Storage Project Unmitigated						
From CalEE Annual Output	Emission per day (Ton/Total Construction Duration)	0.02781				
	Construction Start	1/1/2021				
	Construction Complete	6/30/2021				
	Construction Days	180				
	Construction Emission per day (lb/day)	0.309				
	Annual Duration (Days)	365				
	Annualized Emission Rate (Grams/Second)	0.001620104				
	Project Site Size (Acres)	8.93				
	Project Site Size (meters^2)	36138.42785				
Length of Smalles Side (meters)	190.101099					
Used as an input to AERMOD	Emission Rate over Grading Area(g/s-m^2)	4.48E-08				
From AERMOD	Concentration Annual (Ug/M^3)	0.826				
Duration	Days 458	Days to years 1.254794521				
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From F15	0.826	0.826	0.826	0.826	0.826	0.826
Breathing Rate per agegroup BR/BW (Page 5-25)	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00028626	0.00086433	0.00068274	0.00059076	0.00026564	0.00022996
Construction Days	458	1.254794521				
potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED	0.25	1.254794521	1.254794521	1.254794521	1.254794521	1.254794521
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	9.55899E-06	0.000144865	2.90787E-05	2.5161E-05	3.82372E-06	3.31009E-06
Risk per million Exposed	9.5589912	144.8651641	29.07873045	25.16103854	3.823721088	3.310086912
Cancer Risk Per Million 9-years	183.50					
Cancer Risk Per Million 30-years	183.41					
Cancer Risk Per Million 70-years	182.90					

Air Quality Health Risk Calculations (Worst-Case) Valley Center Energy Project Mitigated						
From CalEE Annual Output	Emission per day (Ton/Total Construction Duration)	0.00131				
	Construction Start	1/1/2021				
	Construction Complete	6/30/2021				
	Days	180				
	Construction Emission per day (lb/day)	0.014555556				
	Annual Duration (Days)	365				
	Annualized Emission Rate (Grams/Second)	7.63156E-05				
	Project Site Size (Acres)	8.93				
	Project Site Size (meters^2)	36138.42785				
	Length of Smalles Side (meters)	190.101099				
Used as an input to AERMOD	Emission Rate over Grading Area(g/s-m^2)	2.11E-09				
From AERMOD	Concentration Annual (Ug/M^3)	0.0388				
	Days	Days to years				
Duration	458	1.254794521				
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From F15	0.0388	0.0388	0.0388	0.0388	0.0388	0.0388
Breathing Rate per agegroup BR/BW (Page 5-25)	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00001345	0.00004060	0.00003207	0.00002775	0.00001248	0.00001080
Construction Days	458	1.254794521				
potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED	0.25	1.254794521	1.254794521	1.254794521	1.254794521	1.254794521
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	4.49018E-07	6.8048E-06	1.36593E-06	1.1819E-06	1.79613E-07	1.55486E-07
Risk per million Exposed	0.449017989	6.804804318	1.365925837	1.181898663	0.179613049	0.155485923
Cancer Risk Per Million 9-years	8.62					
Cancer Risk Per Million 30-years	8.62					
Cancer Risk Per Million 70-years	8.59					