Appendix A

Air Quality and Greenhouse Gas Study

South Oxnard Aquatics Center Project

Air Quality and Greenhouse Gas Study

prepared for

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Executive Summary

Rincon Consultants, Inc. (Rincon) was retained by the City of Oxnard (City) to conduct an air quality and greenhouse gas (GHG) study for the South Oxnard Aquatics Center Project (proposed Project), in Oxnard, Ventura County, California. The 7.93-acre vacant, graded Project site is located at the southeast corner of College Park at 3250 South Rose Avenue. The proposed Project includes the construction of three outdoor pools (including a 50 meter competition pool, 25 yard instructional pool, and a fun water shallow pool, slide, and splash pad), a building structure, and a parking lot. In order to heat the pools, the proposed Project includes construction of a natural gas line that would connect to the southwest corner of the proposed aquatics center, run west along the southern portion of College Park's one-lane ring road, and connect to an existing SoCalGas line in South Rose Avenue. The aquatics center will provide recreation, water fitness, and competitive aquatics opportunities for the residents of the City and surrounding communities.

The proposed Project is subject to the California Environmental Quality Act (CEQA). The City is the lead agency under CEQA. In addition to CEQA, several laws, regulations, and guidance documents govern air quality and greenhouse gas emissions, including the federal Clean Air Act, California Clean Air Act; State Implementation Plan; Ventura County Air Pollution Control District (VCAPCD) Air Quality Management Plan; VCAPCD rules and regulations; California Air Resource Board (CARB) Scoping Plan; various California Assembly Bills, Senate Bills, and Executive Orders; California Building Code; Southern California Association of Governments 2020-2045 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS), City Climate Action and Adaptation Plan (CAAP); and City General Plan.

A project may be inconsistent with the applicable air quality plan if the project would generate population, housing, or employment growth exceeding the forecasts used in the development of the plan. The proposed Project would not include new housing or population growth within Ventura County, and employment opportunities that would be generated from the proposed Project would be within SCAG's employments forecast for the city. Therefore, ***no impact*** related to conflict with or obstruct implementation of the applicable air quality plan would occur.

Project construction would generate temporary air pollutant emissions associated with fugitive dust, exhaust emissions from heavy construction equipment and construction vehicles, and emissions from architectural coating and paving. Construction-related emissions would exceed the VCAPCD threshold for nitrogen oxides (NO_X) and would be potentially significant. Mitigation Measure AQ-1 requires use of Tier 4 engine equipment along with VCACPD best management practices during construction to reduce ozone precursor below VCAPCD regional thresholds. With adherence to Mitigation Measure AQ-1, construction-related air quality impacts, including impacts to nearby sensitive receptors, would be ***less than significant with mitigation.***

Operational air quality emissions from area sources (e.g., architectural coatings, consumer products, and landscaping equipment), energy sources (i.e., use of natural gas for space and water heating), and mobile sources (i.e., vehicle trips to and from the Project site) would not exceed VCAPCD thresholds. Therefore, operation-related air quality impacts, including impacts to nearby sensitive receptors, would be ***less than significant***.

San Joaquin Valley Fever is a pollutant of concern for sensitive receptors in Ventura County. The temporary nature of Project construction and implementation of standard construction measures to reduce fugitive dust generation would minimize the potential risk of infection from San Joaquin Valley Fever. This impact would be ***less than significant***.

The Project would temporarily generate odor during construction activity, which would cease upon completion of construction. Aquatics centers are not identified as an odor-producing facility, nor are there developments near the project site that would produce significant odors. Impacts related to odors would be ***less than significant***.

GHG impacts are assessed in a cumulative context since no single project can cause a discernible change to the climate. In the absence of an adopted numeric GHG threshold for the City of Oxnard, the significance of the proposed Project's potential impacts regarding GHG emissions and climate change is evaluated based on consistency with plans and policies adopted to reduce GHG emissions and mitigate the effects of climate change. The most directly applicable adopted regulatory plans to reduce GHG emissions are the CARB 2022 Scoping Plan, SCAG 2020-2045 RTP/SCS, City General Plan, and City CAAP. The proposed Project would be consistent with the latest iteration of the Title 24 Building Energy Efficiency Standards (Part 6) and Green Building Standards (Part 11) that increase energy and water conservation. The proposed Project is an infill development that would add an amenity to several neighboring residential communities within approximately half a mile radius from the Project site. The Project site would include bike racks and six electric charging parking stations, which would promote alternative modes of transportation for nearby residential uses. In addition, the Gold Coast Transit bus stops 8 and 17 along Rose Avenue are within a quarter of a mile of the Project site. As such, the proposed Project could reduce the amount of motor vehicle trips through availability of transit and connectivity to surrounding neighborhoods. For these reasons, the proposed Project is consistent with goals and policies to increase energy and water efficiency and reduce vehicle trips. Therefore. proposed Project would be consistent with the statewide, regional, and local plans and policies governing GHG emissions and would not contribute to potential secondary effects of climate change. Impacts related to GHG emissions would be ***less than significant***.

1 Project Description

1.1 Introduction

This study analyzes the potential air quality and GHG impacts of the proposed South Oxnard Aquatics Center Project located in Oxnard, California. Rincon prepared this study for the City of Oxnard for use in support of environmental documentation pursuant to the CEQA. The purpose of this study is to analyze the Project's air quality and GHG impacts related to both temporary construction activity and long-term operation of the Project with respect to the VCAPCD air quality guidelines (VCAPCD 2003). The conclusions of this study are summarized in Table 1.

Table 1 Summary of Impacts

Impact Statement	Proposed Project's Level of Significance	Applicable Recommendations
Air Quality		
Would the project conflict with population or other growth forecasts contained in the Ventura County AQMP or otherwise obstruct implementation of the Ventura County AQMP?	No impact	None
Would the project violate any federal or state air quality standard or contribute substantially to an existing or project air quality standard violation?	Less than significant impact with mitigation incorporated	Mitigation Measure AQ-1 NO_X Construction Reduction Measures
Would the project result in a net increase of any criteria pollutant in excess of quantitative thresholds recommended by the VCAPCD?	Less than significant impact with mitigation incorporated	Mitigation Measure AQ-1 NO_X Construction Reduction Measures
Would the project expose sensitive receptors to pollutant concentrations exceeding state or federal standards or in excess of applicable health risk criteria for toxic air contaminants?	Less than significant impact	None
Would the project create objectionable odors affecting a substantial number of people?	Less than significant impact	None
Greenhouse Gas Emissions		
Would the project generate greenhouse emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than significant impact	None
Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases or otherwise conflict with state goals for reducing GHG emissions in California?	Less than significant impact	None
Would the project contribute or be subject to potential secondary effects of climate change (e.g., sea level rise, increase fire hazard)?	Less than significant impact	None

1.2 Project Summary

Project Location

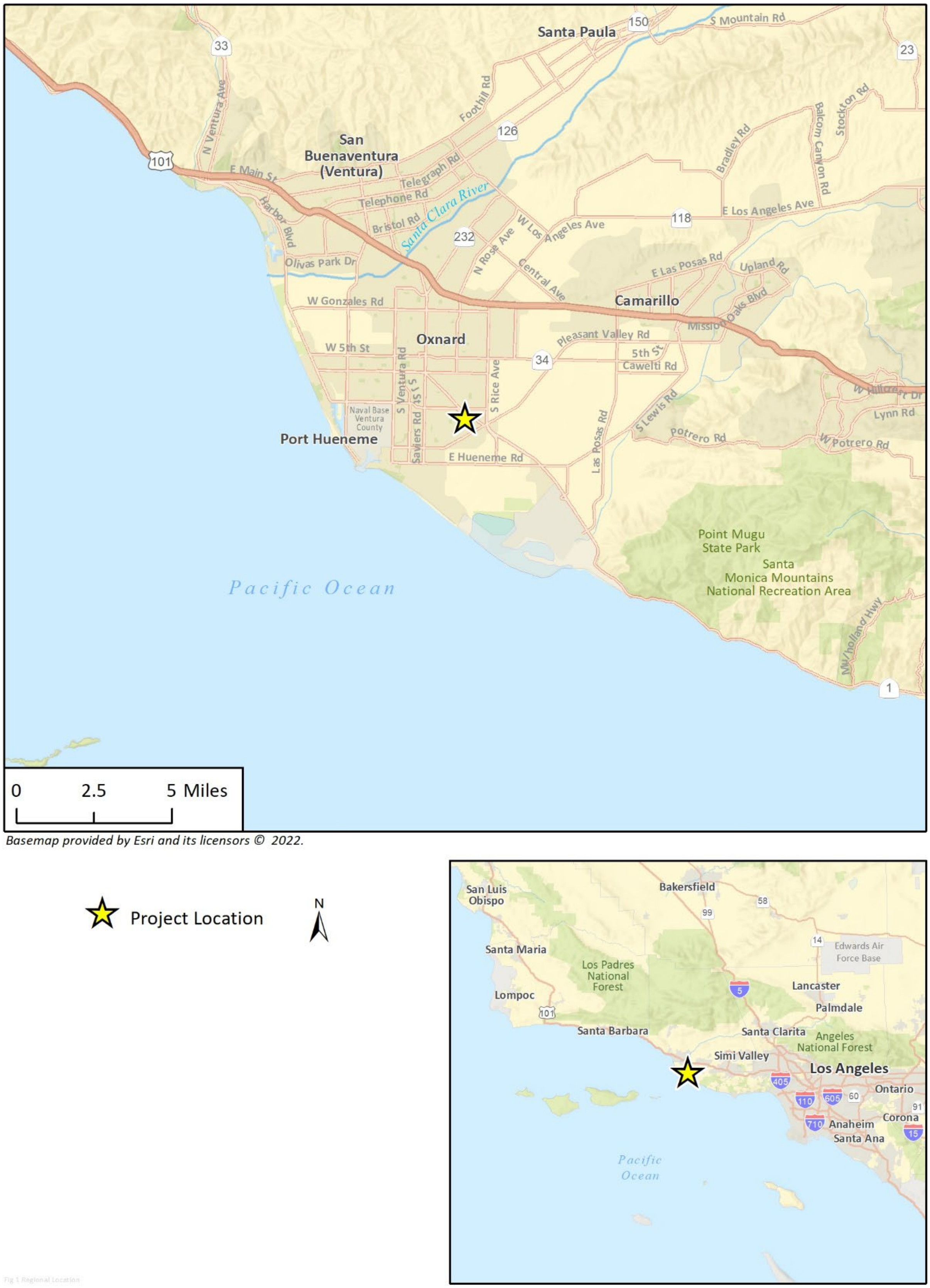
The Project site is located at the southeastern corner of College Park at 3250 South Rose Avenue in Oxnard, California. The 7.93-acre Project site is identified as a portion of the Assessor's Parcel Number 2240-012-28. The Project site is regionally accessible by California State Route 1 (SR-1) and locally by South Oxnard Boulevard and the intersection of South Rose Avenue and Gary Drive. The Project site is zoned for Community Reserve and surrounded by residential and commercial zoned areas. Figure 1 shows the location of the Project site in the region, and Figure 2 shows the location of the Project site in its neighborhood context.

Project Description

The proposed Project would include the construction of a 57,233 square foot outdoor pool area with four pool areas totaling 23,571 square feet, one slide area totaling 822 square feet, a one-story "L" shaped building totaling 18,342 square feet, a 103-stall parking lot, and ancillary facilities. Pool areas would consist of a 50-meter competition pool, 25-yard instructional pool, splash pad, recreation pool, and slide area. The one-story building would frame the western and northern sides of the pool area. It would be used to house locker rooms, administrative space, utility rooms, a concession stand, and other ancillary facilities. The proposed Project includes the construction of a natural gas line that would connect to the southwest corner of the proposed aquatics center, run west along the southern portion of College Park's one-lane ring road, and connect to an existing SoCalGas line in South Rose Avenue.

The proposed Project includes the construction of a dedicated parking lot with 103 parking stalls north of the aquatics center. Of the 103 spaces, five would be Americans with Disabilities Act (ADA) compliant, two would be ADA compliant and allow electric vehicle (EV) parking, four would be reserved for EV parking only, and 19 would be EV capable, meaning infrastructure that would support the future installation of an EV charging station would be provided. The parking lot will be supplemented by existing parking along College Park's ring road and adjacent parking lots within the park. Figure 3 shows the proposed site plan.

Figure 1 Regional Location



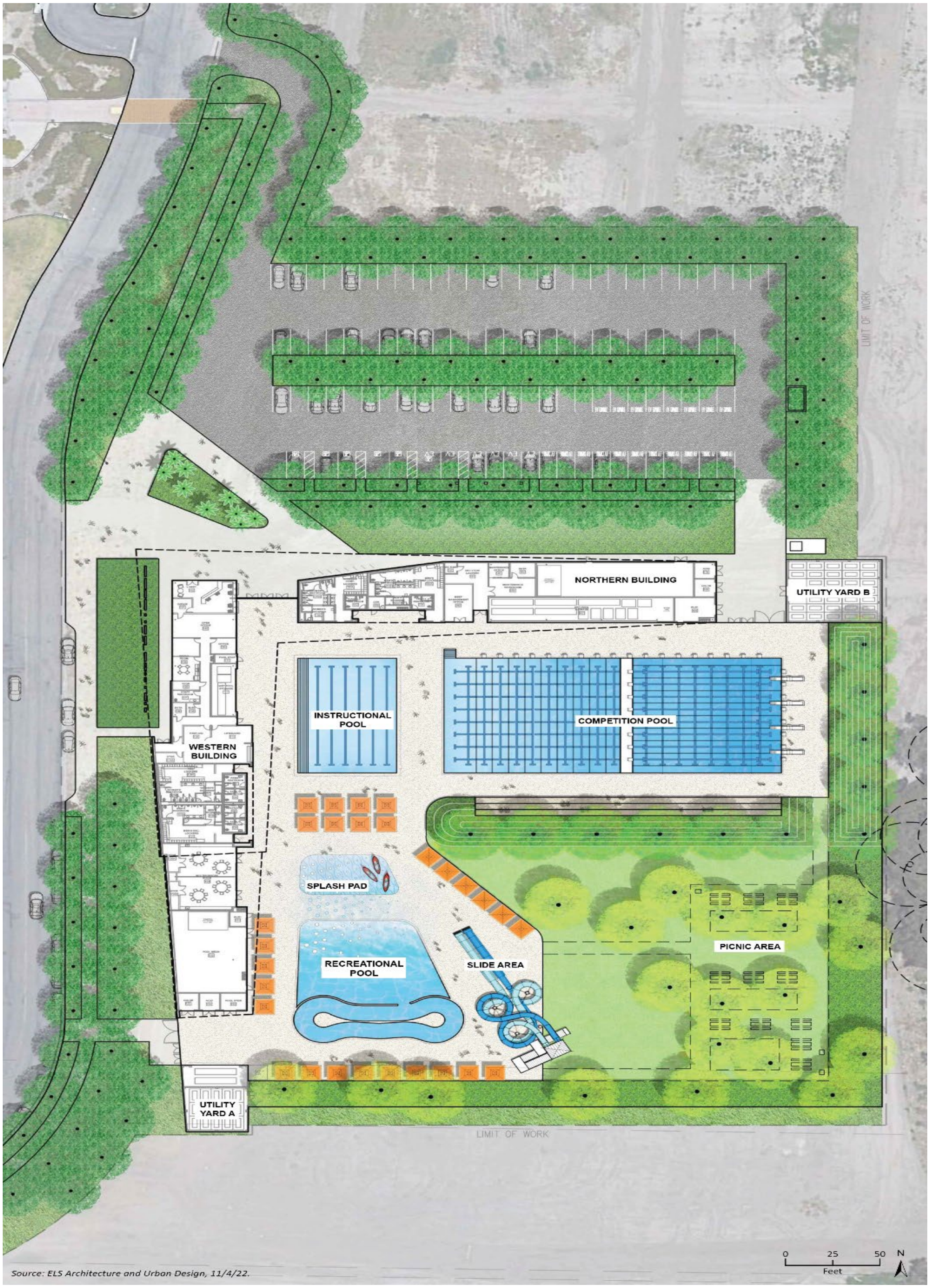
Basemap provided by Esri and its licensors © 2022.

Figure 2 Project Site

Imagery provided by Microsoft Bing and its licensors © 2022.

Fig 2 Project Location

Figure 3 Project Site Plans



Source: ELS Architecture and Urban Design, 11/4/22.

Construction

Construction of the proposed Project is anticipated to begin in the 1st quarter of 2026 and end in the 1st quarter of 2028[1]. Underground stone columns, up to 50 feet in depth, may be required to increase the load-bearing capacity of the soil. Excavation up to 15 feet in depth would be required for the pool areas and utilities. The proposed Project would require cut of approximately 11,000 cubic yards (CY) and approximately 7,000 CY of fill. Approximately 6,000 CY of soil would be exported from the Project site. Soil debris would be hauled to the Toland Road Landfill or the Simi Valley Landfill, or other landfills with available capacity. The proposed haul route for soil export and material delivery would be as follows:

- **Toland Road Landfill:** Rose Avenue to State Route (SR) 118 to SR 126 to Toland Road
- **Simi Valley Landfill:** Pleasant Valley Road to United States Route 101 (U.S. 101) to SR 23 to SR 118 to Madera Road

The analysis conservatively estimated hauling emissions from the furthest landfill to the Project site, the Simi Valley Landfill, which is approximately 33 miles from the Project site. Construction staging would be located on the Project site. Construction workers would park on the Project site, on the street immediately west of the Project site, or in the adjacent parking lot located approximately 460 feet west of the Project site. No nighttime or weekend construction would occur.

The contractor would be required to implement appropriate erosion and stormwater pollution control best management practices (BMPs) as part of preparation of Stormwater Pollution Prevention Plan (SWPPP).

Operation

The City anticipates that the aquatics center would serve only the local community of Oxnard, and would not be used for regional events. The proposed Project would be operated 50 weeks out of the year, seven days per week. During the summer season it is anticipated approximately 3,005 daily users would utilize the aquatics center Monday through Friday. On Saturday and Sunday, it is expected approximately 4,425 daily users would utilize the aquatics center. During the weekdays, the aquatics center would be staffed with approximately 80 employees per day. During the weekends, the number of employees is anticipated to increase to approximately 100 employees per day.

Use of the aquatics center during the fall, winter, and spring seasons is anticipated to be less than the use during the summer season. During the fall, winter, and spring seasons it is anticipated approximately 1,330 daily users would utilize the aquatics center Monday through Friday. On Saturday and Sunday, it is expected approximately 2,650 daily users would utilize the aquatics center. Employment at the aquatics center is expected to remain the same as during the summer season, ranging from approximately 80 to 100 employees per day.

Two centralized hot water systems would be installed in the pool mechanical rooms of the western and northern buildings to provide hot water to plumbing fixtures in the buildings. The system would consist of two gas-powered water heaters with an expansion tank, master mixing valve, and recirculating pump. Up to 7.425 million BTUs of natural gas would be required to heat the pools.

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[1] The analysis modeled construction from November 2023 to June 2025, which would conservatively estimate emissions since emissions factors would decrease in accordance to statewide plans to reduce air quality and GHG emissions.

Wastewater would be generated from the five pool areas and users of the aquatics center. The annual wastewater generation from each of the five pools would be as follows:

- Competition Pool: 151,200 gallons per year
- Recreation Pool: 73,440 gallons per year
- Instructional Pool: 55,016 gallons per year
- Splash Pad Pool: 3,600 gallons per year
- Slides: 2,880 gallons per year

In addition, the anticipated wastewater from the ancillary facilities (such as restrooms) would be approximately 22,250 gallons per day.

2 Background

2.1 Local Climate and Meteorology

The Project site is located in the South Central Coast Air Basin (SCCAB), which includes San Luis Obispo, Santa Barbara, and Ventura counties. The climate of the Ventura County area and the rest of the SCCAB is strongly influenced by its proximity to the Pacific Ocean and the location of the semi-permanent high-pressure cell in the northeastern Pacific Ocean. The Mediterranean climate of the region produces moderate average temperatures, although slightly more extreme temperatures can be reached in the winter and summer. The warmest month in Oxnard from 2013 to 2022 was October, with a highest average temperature of 79.5 degrees Fahrenheit, while the coldest month of the year was December, with a highest average temperature of 68.5 degrees Fahrenheit. Typically, the city's annual highest average temperature is 82 degrees Fahrenheit, and the annual lowest average temperature is 46.5 degrees Fahrenheit (National Oceanic and Atmospheric Administration [NOAA] 2023a). The climate is semi-arid, with rainfall concentrated in the winter months. Table 2 summarizes local climatic conditions.

Table 2 Climatic Conditions in Oxnard

Weather Condition	Value
Average annual rainfall	11.14 inches
Highest Average temperature (annual)	82°F
Lowest Average temperature (annual)	46.5°F
Warmest month	October
Coolest month	December

°F = degrees Fahrenheit

Source: NOAA 2023a

California's weather is heavily influenced by a semi-permanent high-pressure system west off the Pacific coast. The region's Mediterranean climate and the coastal influence produce moderate temperatures year-round, with rainfall concentrated in the winter months. The sea breeze, which is the predominant wind, is a primary factor in creating this climate and typically flows from the west-southwest in a day-night cycle with speeds generally ranging from 5 to 15 miles per hour.

Two types of temperature inversions (warmer air on top of cooler air) are created in the area: subsidence and radiational. The subsidence inversion is a regional effect created by the Pacific high in which air is heated as it is compressed when it flows from the high-pressure area to the low-pressure areas inland. This type of inversion generally forms at about 1,000 to 2,000 feet. It can occur throughout the year but it is most evident during the summer months. Radiational, or surface, inversions are formed by the more rapid cooling of air near the ground at night, especially during winter. This type of inversion is typically lower and is generally accompanied by stable air. Both types of inversions limit the dispersal of air pollutants within the regional airshed. The more stable the air (low wind speeds, uniform temperatures), the less pollutant dispersion in the air.

2.2 Air Pollutants of Primary Concern

Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere. Primary criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), fine particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). Ozone (O_3) is considered a secondary criteria pollutant because it is created by atmospheric chemical and photochemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_X). The proposed Project would generate CO, PM_{10}, $PM_{2.5}$, SO_2, and Pb as well as O_3 precursors ROG and NO_X (including NO_2) during construction and operation. These pollutants can have adverse impacts on human health at certain levels of exposure. The following subsections describe the characteristics, sources, and health and atmospheric effects of air pollutants.

Ozone

Ozone (O_3) is a highly oxidative unstable gas produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_X) and reactive organic gases (ROG)/volatile organic compounds (VOC).[2] ROG is composed of non-methane hydrocarbons (with specific exclusions), and NO_X is composed of different chemical combinations of nitrogen and oxygen, mainly nitric oxide and NO_2. NO_X is formed during the combustion of fuels, while ROG is formed during the combustion and evaporation of organic solvents. As a highly reactive molecule, O_3 readily combines with many different atmosphere components. Consequently, high O_3 levels tend to exist only while high ROG and NO_X levels are present to sustain the O_3 formation process. Once the precursors have been depleted, O_3 levels rapidly decline. Because these reactions occur on a regional rather than local scale, O_3 is considered a regional pollutant. In addition, because O_3 requires sunlight to form, it mainly occurs in concentrations considered serious between April and October. Groups most sensitive to O_3 include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors (United States Environmental Protection Agency [United States EPA] 2022a). Depending on the level of exposure, O_3 can cause coughing and a sore or scratch throat; make it more difficult to breathe deeply and vigorously and cause pain when taking a deep breath; inflame and damage the airways; make the lungs more susceptible to infection; and aggravate lung diseases such as asthma, emphysema, and chronic bronchitis.

Carbon Monoxide

Carbon monoxide (CO) is a localized pollutant found in high concentrations only near its source. The primary source of CO, a colorless, odorless, poisonous gas, is automobile traffic's incomplete combustion of petroleum fuels. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. Other sources of CO include the incomplete combustion of petroleum fuels at power plants and fuel combustion from wood stoves and fireplaces throughout the year. When CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. These people already have a reduced ability to get oxygenated blood to their hearts in situations where they need more oxygen than usual. As a result, they are especially vulnerable to the effects of CO when exercising or under increased stress. In these situations, short-

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[2] CARB defines VOC and ROG similarly as, "any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate," with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG and VOC are considered comparable in terms of mass emissions, and the term ROG is used in this report.

term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain, also known as angina (United States EPA 2022a).

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is a by-product of fuel combustion. The primary sources are motor vehicles and industrial boilers, and furnaces. The principal form of NO_x produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2, commonly called NO_x. NO_2 is a reactive, oxidizing gas and an acute irritant capable of damaging cell linings in the respiratory tract. Breathing air with a high concentration of NO_2 can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases leading to respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, such as children and the elderly are generally at greater risk for the health effects of NO_2 (United States EPA 2022a). NO_2 absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of O_3/smog and acid rain.

Sulfur Dioxide

Sulfur dioxide (SO_2) is included in a group of highly reactive gases known as “oxides of sulfur.” The largest sources of SO_2 emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore and burning fuels with a high sulfur content by locomotives, large ships, and off-road equipment. Short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO_2 (United States EPA 2022a).

Particulate Matter

Suspended atmospheric PM_{10} and $PM_{2.5}$ are comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. Both PM_{10} and $PM_{2.5}$ are emitted into the atmosphere as by-products of fuel combustion and wind erosion of soil and unpaved roads. The atmosphere, through chemical reactions, can form particulate matter. The characteristics, sources, and potential health effects of PM_{10} and $PM_{2.5}$ can be very different. PM_{10} is generally associated with dust mobilized by wind and vehicles. In contrast, $PM_{2.5}$ is generally associated with combustion processes and formation in the atmosphere as a secondary pollutant through chemical reactions. PM_{10} can cause increased respiratory disease, lung damage, cancer, premature death, reduced visibility, surface soiling. For $PM_{2.5}$, short-term exposures (up to 24-hours duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases (California Air Resource Board [CARB] 2022a).

Lead

Lead (Pb) is a metal found naturally in the environment, as well as in manufacturing products. The major sources of lead emissions historically have been mobile and industrial. However, due to the United States EPA ’s regulatory efforts to remove lead from gasoline, atmospheric Pb concentrations have declined substantially over the past several decades. The most dramatic reductions in Pb emissions occurred before 1990 due to the removal of Pb from gasoline sold for most highway vehicles. Pb emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least partly due to national emissions standards for hazardous air pollutants (United States EPA 2013). As a result of phasing out leaded gasoline, metal processing is currently the primary source of Pb emissions. The highest Pb level in the air is generally found near Pb smelters. Other stationary sources include waste incinerators, utilities, and Pb-acid battery manufacturers. Pb can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and cardiovascular system depending on exposure. Pb exposure also affects the oxygen-carrying capacity of the blood. The Pb effects most likely encountered in current populations are neurological in children. Infants and young children are susceptible to Pb exposures, contributing to behavioral problems, learning deficits, and lowered IQ (United States EPA 2022a).

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TAC) are airborne substances diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engine exhaust that contains solid material known as diesel particulate matter (DPM). More than 90 percent of DPM is less than one micron in diameter (about 1/70th the diameter of a human hair) and thus is a subset of $PM_{2.5}$. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2022a). TACs are different than criteria pollutants because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health. People exposed to TACs at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems (United States EPA 2020).

Valley Fever

San Joaquin Valley Fever (formally known as Coccidioidomycosis) is an infectious disease caused by the fungus Coccidioides immitis. Infection is caused by inhalation of Coccidioides immitis spores that have become airborne when dry, dusty soil or dirt is disturbed by wind, construction, farming, or other activities. According to the VCAPCD, the following factors may indicate a Project's potential to create significant Valley Fever impacts:

- Disturbance of the topsoil of undeveloped land (to a depth of about 12 inches).
- Dry, alkaline, sandy soils.
- Virgin, undisturbed, non-urban areas.
- Windy areas.
- Archaeological resources probable or known to exist in the area (Native American midden sites).

- Special events (fairs, concerts) and motorized activities (motocross track, All Terrain Vehicle activities) on unvegetated soil (non-grass).
- Non-native population (i.e., out-of-area construction workers).

Health effects from Coccidioides can include fatigue, fever, headache, rashes and cough. In extremely rare cases, the fungal spores can enter the skin through a cut, wound, or splinter and cause a skin infection (Centers for Disease Control and Prevention 2020).

2.3 Air Quality Regulation

The federal and state governments have authority under the federal and state Clean Air Acts to regulate emissions of airborne pollutants and have established ambient air quality standards (AAQS) for the protection of public health. An air quality standard is defined as "the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harming public health" (CARB 2022b). The United States EPA is the federal agency designated to administer air quality regulation, while CARB is the state equivalent in California. Federal and state AAQS have been established for six criteria pollutants: O_3, CO, NO_2, SO_2, $PM_{10,}$ $PM_{2.5}$, and Pb. AAQS are designed to protect those segments of the public most susceptible to respiratory distress, such as children under the age of 14, the elderly (over the age of 65), persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases (United States EPA 2016). In addition, the state of California has established health-based ambient air quality standards for these and other pollutants, some of which are more stringent than the federal standards (CARB 2022c). The federal and state Clean Air Acts are described in more detail below.

Federal Air Quality Regulations

The Clean Air Act (CAA) was enacted in 1970 and amended in 1977 and 1990 [42 United States Code (USC) 7401] for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, to achieve the purposes of Section 109 of the CAA [42 USC 7409], the United States EPA developed primary and secondary National Ambient Air Quality Standards (NAAQS).

The primary NAAQS "in the judgment of the Administrator[3], based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health," and the secondary standards are to "protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air" [42 USC 7409(b)(2)]. The United States EPA classifies specific geographic areas as either "attainment" or "nonattainment" areas for each pollutant based on the comparison of measured data with the NAAQS. States are required to adopt enforceable plans, known as a State Implementation Plan (SIP), to achieve and maintain air quality meeting the NAAQS. State plans also must control emissions that drift across state lines and harm air quality in downwind states. Table 3 lists the current federal standards for regulated pollutants.

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[3] The term "Administrator" means the Administrator of the United States EPA .

Table 3 Federal and State Ambient Air Quality Standards

Pollutant	NAAQS	CAAQS
Ozone	0.070 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.070 ppm (8-hr avg)
Carbon Monoxide	35.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)	20.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)
Nitrogen Dioxide	0.100 ppm (1-hr avg) 0.053 ppm (annual avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.075 ppm (1-hr avg) 0.5 ppm (3-hr avg) 0.14 ppm (24-hr avg) 0.030 ppm (annual avg)	0.25 ppm (1-hr avg) 0.04 ppm (24-hr avg)
Lead	0.15 μg/m^3 (rolling 3-month avg) 1.5 μg/m^3 (calendar quarter)	1.5 μg/m^3 (30-day avg)
Particulate Matter (PM_{10})	150 μg/m^3 (24-hr avg)	50 μg/m^3 (24-hr avg) 20 μg/m^3 (annual avg)
Particulate Matter ($PM_{2.5}$)	35 μg/m^3 (24-hr avg) 12 μg/m^3 (annual avg)	12 μg/m^3 (annual avg)
Visibility-Reducing Particles	No Federal Standards	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07 - 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape. (8-hr avg)
Sulfates	No Federal Standards	25 μg/m^3 (24-hr avg)
Hydrogen Sulfide	No Federal Standards	0.03 ppm (1-hr avg)
Vinyl Chloride	No Federal Standards	0.01 ppm (24-hr avg)

NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; avg = average; μg/m^3 = micrograms per cubic meter

Source: CARB 2016

To derive the NAAQS, the United States EPA reviews data from integrated science assessments and risk/exposure assessments to determine the ambient pollutant concentrations at which human health impacts occur, then reduces these concentrations to establish a margin of safety (United States EPA 2018). As a result, human health impacts caused by the air pollutants discussed above may affect people when ambient air pollutant concentrations are at or above the concentrations established by the NAAQS. The closer a region is to attainting a particular NAAQS, the lower the human health impact is from that pollutant (SJVACPD 2015). Accordingly, ambient air pollutant concentrations below the NAAQS are considered to be protective of human health (CARB 2022b and 2022c). The NAAQS and the underlying science that forms the basis of the NAAQS are reviewed every five years to determine whether updates are necessary to continue protecting public health with an adequate margin of safety (United States EPA 2015).

State Air Quality Regulations

California Clean Air Act

The California Clean Air Act (CCAA) was enacted in 1988 (California Health & Safety Code (H&SC) §39000 et seq.). Under the CCAA, the state has developed the California Ambient Air Quality Standards (CAAQS), which are generally more stringent than the NAAQS. Table 3 lists the current state standards for regulated pollutants. In addition to the federal criteria pollutants, the CAAQS also specify standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. Similar to the federal CAA, the CCAA classifies specific geographic areas as either “attainment” or “nonattainment” areas for each pollutant, based on the comparison of measured data within the CAAQS.

Toxic Air Contaminants

A toxic air contaminant (TAC) is an air pollutant that may cause or contribute to an increase in mortality or serious illness or which may pose a present or potential hazard to human health. TACs may result in long-term health effects such as cancer, birth defects, neurological damage, asthma, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation, runny nose, throat pain, and headaches. TACs are considered either carcinogenic or non-carcinogenic based on the nature of the health effects associated with exposure. For carcinogenic TACs, potential health impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Non-carcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

TACs include both organic and inorganic chemical substances. One of the main sources of TACs in California is diesel engines that emit exhaust containing solid material known as diesel particulate matter (DPM); however, TACs may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities.

In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health (Assembly Bill [AB] 1807: Health and Safety Code Sections 39650–39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

The California Air Toxics Program establishes the process for the identification and control of TACs and includes provisions to make the public aware of significant toxic exposures and for reducing risk. Additionally, the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly Bill) was enacted in 1987 and requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, ascertain health risks, notify nearby residents of significant risks, and reduce those significant risks to acceptable levels. The Children's Environmental Health Protection Act, California Senate Bill (SB) 25 (Chapter 731, Escutia, Statutes of 1999), focuses on children's exposure to air pollutants. The act requires the CARB to review its air quality standards from a children's health perspective, evaluate the statewide air quality monitoring network, and develop any additional air toxic control measures needed to protect children's health.

State Implementation Plan

The SIP is a collection of documents that set forth the state's strategies for achieving the AAQS. In California, the SIP is a compilation of new and previously submitted plans, programs (such as monitoring, modeling, and permitting), district rules, state regulations, and federal controls. The CARB is the lead agency for all purposes related to the SIP under state law. Local air districts and other agencies, such as the Department of Pesticide Regulation and the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the United States EPA for approval and publication in the Federal Register. The items included in the California SIP are listed in the Code of Federal Regulations (CFR) at 40 CFR 52.220.

The 2022 Ventura County Air Quality Management Plan (AQMP) is the SIP for Ventura County. The AQMP accommodate growth by projecting the growth in emissions based on different indicators. For example, population forecasts adopted by the Southern California Associations of Governments (SCAG) are used to forecast population-related emissions. Through the planning process, emissions growth is offset by basin-wide controls on stationary, area, and transportation sources of air pollution.

In addition, the following California Code of Regulations would be applicable to the proposed Project:

- **Engine Idling.** In accordance with Section 2485 of Title 13 of the California Code of Regulations, the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds) during construction shall be limited to five minutes at any location.
- **Emission Standards.** In accordance with Section 93115 of Title 17 of the California Code of Regulations, operation of any stationary, diesel-fueled, compression-ignition engines shall meet specified fuel and fuel additive requirements and emission standards.

NAAQS and CAAQS Attainment Status

California is divided geographically into 15 air basins for managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses and, therefore, are expected to have similar ambient air quality. If an air basin is not in either federal or state attainment for a particular pollutant, the basin is classified as a nonattainment area for that pollutant. Under the federal and state Clean Air Acts, once a nonattainment area has achieved the air quality standards for a particular pollutant, it may be redesignated to an attainment area for that pollutant. To be redesignated, the area must meet air quality standards and have a 10-year plan for continuing to meet and maintain air quality standards, as well as satisfy other requirements of the federal CAA. Areas that have been redesignated to attainment are called maintenance areas.

The Project site is within Ventura County, which currently meets the NAAQS for all criteria air pollutants except ozone. The Ventura County is classified an attainment/maintenance area for CO, and attainment for PM_{10}. The Ventura County is currently classified as a nonattainment area under the CAAQS for ozone, and PM_{10} (Ventura County 2022).

Regional Air Quality Regulations

Ventura County Air Pollution Control District

The Federal Clean Air Act Amendments of 1990 set a schedule for the attainment of the NAAQS. States are required to prepare a SIP to develop strategies to bring about attainment of the standards. In addition, the California Clean Air Act of 1988 requires areas that exceed the California ambient air quality standards to plan for the eventual attainment of the CAAQS. VCAPCD monitors and regulates local air quality in Ventura County and implements Air Quality Management Plans (AQMPs).

The 2022 AQMP is the most recent attainment plan adopted by VCAPCD in 2022. The 2022 AQMP presents a combined local and state clean air strategy based on concurrent ROG and NO_X emission reductions to bring Ventura County into attainment of the 2015 federal 8-hour ozone standard. The 2022 AQMP control strategy consists of a local component implemented by the VCAPCD and a combined state and federal component implemented by the CARB and EPA. The local strategy includes emission control measures carried forward from previous Ventura County clean air plans plus new and further study emission control measures. It also includes a transportation conformity budget that sets the maximum amount of on-road motor vehicle emissions produced while continuing to demonstrate progress towards attainment (VCAPCD 2022). According to the VCAPCD guidelines, in addition to the assessment of criteria pollutants, the lead agency should consider San Joaquin Valley Fever factors that are applicable to the proposed Project or the Project site. Based on these or other factors, if a lead agency determines that a Project may create a significant Valley Fever impact, the VCAPCD recommends that the lead agency consider the Valley Fever mitigation measures listed in the VCAPCD guidelines to minimize fugitive dust as well as minimizing worker exposure. The VCAPCD guidelines provides the following list of measures to be considered if the lead agency determines a Project site poses a risk of San Joaquin Valley Fever:

1. Restrict employment to persons with positive coccidioid in skin tests (since those with positive tests can be considered immune to reinfection).
2. Hire crews from local populations where possible, since it is more likely that they have been previously exposed to the fungus and are therefore immune.
3. Require crews to use respirators during Project clearing, grading, and excavation operations in accordance with California Division of Occupational Safety and Health regulations.
4. Require that the cabs of grading and construction equipment be air-conditioned.
5. Require crews to work upwind from excavation sites.
6. Pave construction roads.
7. Where acceptable to the fire department, control weed growth by mowing instead of discing, thereby leaving the ground undisturbed and with a mulch covering.

VCAPCD RULES

The VCAPCD implements rules and regulations for emissions generated by various uses and activities. The rules and regulations detail pollution-reduction measures to be implemented during construction and operation of Projects. This section discusses the rules and regulations relevant to the proposed Project.

RULE 50 (OPACITY)

This rule sets opacity standards on the discharge from sources of air contaminants. This rule would apply during construction of the proposed Project.

RULE 51 (NUISANCE)

This rule prohibits any person from discharging air contaminants or any other material from a source which would cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public or which endangers the comfort, health, safety, or repose to any considerable number of persons or the public. The rule would apply during construction and operational activities.

RULE 55 (FUGITIVE DUST)

This rule requires fugitive dust generators, including construction and demolition projects, to implement control measures limiting the amount of dust from vehicle track-out, earth moving, bulk material handling, and truck hauling activities. The rule would apply during construction and operational activities.

RULE 55.1 (PAVED ROADS AND PUBLIC UNPAVED ROADS)

This rule requires fugitive dust generators to begin the removal of visible roadway accumulation within 72 hours of any written notification from the VCAPCD. The use of blowers is expressly prohibited under any circumstances. This rule also requires controls to limit the amount of dust from any construction activity or any earthmoving activity on a public unpaved road. This rule would apply throughout all construction activities.

RULE 55.2 (STREET SWEEPING EQUIPMENT)

This rule requires the use of PM_{10} efficient street sweepers for routine street sweeping and for removing vehicle track-out pursuant to Rule 55. This rule would apply during all construction activities.

RULE 74.4 (CUTBACK ASPHALT)

This rule sets limits on the type of application and ROG content of cutback and emulsified asphalt. The proposed Project is required to comply with the type of application and ROG content standards set forth in this rule.

Local Regulations

City of Oxnard General Plan

The City of Oxnard's 2030 General Plan, adopted in 2011, lists several air quality policies as part of its Sustainable Community, Community Development, Environmental Chapters that supplement those of the VCAPCD. The following are goals and policies applicable to the proposed Project (City of Oxnard 2011):

Goal SC-4: Implementation of the California Green Building Code.

Policy SC-4.1	**Green Building Cod Implementation.** Implement the 2010 California Green Building Code as may be amended (CALGREEN) and consider recommending and/or requiring certain developments to incorporate Tier I and Tier II voluntary standards under certain conditions to be developed by the Development Services Director.

Goal CD-1: A balanced community consisting of residential, commercial, and employment uses consistent with the character, capacity, and vison of the City.

Policy CD-1.4 **Transportation Choices.** Promote the application of land use and community designs that provide residents with the opportunity for a variety of transportation choices (pedestrian, bicycle, transit, and automobile).

Goal CD-7: Development of vibrant mixed-use urban villages characterized by a mix of land uses, transit accessibility, pedestrian, and neighborhood identity.

Policy CD-7.5 **Pedestrian and Transit Scale.** Design urban village areas to be pedestrian-oriented and transit accessible, incorporating block patterns, walking routes and edges, social orientation of buildings, and streetscapes to provide ease of walking and safety.

Policy CD -7.6 **Connectivity.** Provide connectivity to other activity nodes in the form of roadways, transit connections, and bicycle and pedestrian linkages that encourages nonvehicular travel modes. Urban villages should be considered major transit transfer points and have amenities oriented towards transit users.

Goal ER-14: Improve air quality and minimize adverse effects of air pollution on human health and economy.

Policy ER-14.1 **Incorporate Ventura County AQMP Mitigations.** Incorporate construction and operation mitigation measures recommended or required by the current Ventura County Air Quality Management Plan (AQMP) when preparing CEQA reviews, as appropriate.

Policy ER-14.4 **Emissions Control Devices.** Require all construction equipment to be maintained and tuned to meet appropriate EPA, CARB, and VCAPCD emissions requirements and when new emission control devices or operational modifications are found to be effective, such devices or operational modifications are required on construction equipment.

Policy ER-14.12 **Use VCAPCD Air Quality Assessment Guidelines.** Use the VCAPCD Air Quality Assessment Guidelines and recommended analytical tools for determining and mitigation project air quality impacts and related thresholds of significance for use in environmental documents. The City shall continue to cooperate with the VCAPCD in the review of development proposals.

2.4 Current Air Quality

The VCAPCD operates a network of air quality monitoring stations throughout Ventura County. The monitoring stations aim to measure ambient concentrations of pollutants and determine whether ambient air quality meets the California and federal standards. The closest monitoring station to the Project site is the El Rio-Rio Mesa School #2, located at 545 Central Avenue, Oxnard, approximately six miles south of the Project site. This station collects 8-hour O_3, hourly O_3, NO_2, $PM_{2.5}$, and PM_{10} measurements. Table 4 indicates the number of days each federal and state standard were exceeded at El Rio-Rio Mesa School #2. As shown for the 8-hour O_3 and hourly O_3, measurements exceeded the federal and state standard in 2020. PM_{10} measurements exceeded the federal and state standards in the years 2019 through 2021. In addition, $PM_{2.5}$ measurements exceeded the federal $PM_{2.5}$ standard exceedances in 2020. No other state or federal standards were exceeded at these monitoring stations. Since CO and SO_2 are in attainment with the Ventura County region, they are not monitored at the nearest air monitoring stations and therefore ambient air quality is not reported for these pollutants.

Table 4 Ambient Air Quality at the Nearest Monitoring Station

Pollutant	2019	2020	2021
8-Hour Ozone (ppm), 8-Hour Average	0.070	0.086	0.059
Number of Days of State exceedances (>0.070 ppm)	0	3	0
Number of days of federal exceedances (>0.070 ppm)	0	3	0
Ozone (ppm), Worst Hour	0.078	0.104	0.073
Number of days of State exceedances (>0.09 ppm)	0	2	0
Nitrogen Dioxide (ppm) - Worst Hour	0.041	0.031	0.033
Number of days of State exceedances (>0.18 ppm)	0	0	0
Number of days of federal exceedances (>0.10 ppm)	0	0	0
Particulate Matter 10 microns, $\mu g/m^3$, Worst 24 Hours	188	201	378
Number of days of State exceedances (>50 $\mu g/m^3$)	14	21	12
Number of days above federal standard (>150 $\mu g/m^3$)	2	2	1
Particulate Matter <2.5 microns, $\mu g/m^3$, Worst 24 Hours	25.5	58.7	31.7
Number of days above federal standard (>35 $\mu g/m^3$)	0	3	0

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

Measurements were taken from El Rio-Rio Mesa School #2 monitoring station

Source: CARB 2022d

Sensitive Receptors

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with a margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14, the elderly over 65, people engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases. The VCAPCD defines sensitive receptors as facilities or land uses which include members of the population particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Sensitive receptors listed in the VCAPCD guidelines include residences, schools, hospitals, and daycare centers (VCAPCD 2003). Sensitive receptors nearest to the Project site are Channel Islands High School, approximately 200 feet northwest of the Project site, and single family residents, approximately 415 feet northeast of the Project site.

3 Air Quality Impact Analysis

3.1 Methodology

Air pollutant emissions generated by Project construction and operation were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod allows for the use of standardized data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices C, D, and G (California Air Pollution Control Officers Associated [CAPCOA] 2022). The analysis reflects construction and operation of the proposed Project as described in Section 1.2, *Project Summary*.

Construction

Project construction would primarily generate temporary criteria pollutant and GHG emissions from construction equipment operation on the site, construction worker vehicle trips to and from the site, and export of materials off site. Construction of the proposed Project was analyzed based on the land use type and square footage described in Section 1, *Project Description*, which includes the outdoor pools, one-story building, parking lot, ancillary facilities, and new gas line. The proposed construction would start in begin in the 1st quarter of 2026 and end in the 1st quarter of 2028.[4] Based on the proposed land uses, the CalEEMod assumptions for construction schedule, equipment lists, and vehicle trips were used. Based on aerial Google Earth measurements, the gas pipeline would be approximately 1,424 linear feet to connect the Project site to the existing Southern California Gas line in South Rose Avenue. It is assumed the gas pipeline would overlap the construction of the aquatics center for approximately 18 days.[5] Approximately 6,000 cubic yards of soil would be exported to Toland Road Landfill and Simi Valley Landfill. The Simi Valley Landfill is the furthest landfill, approximately 33 miles from the Project site; therefore, this analysis modeled for this distance, which would be a conservative emissions estimate attributed to hauling material. The analysis assumes construction equipment would be diesel-powered and the proposed Project would comply with applicable regulatory standards. In particular, the proposed Project would comply with VCAPCD Rule 55 for dust control measures and Rule 74.2 for architectural coating VOC limits, which are discussed under Section 2.3, *Air Quality Regulation.*

Operation

In CalEEMod, operational sources of criteria pollutant emissions include area, energy, and mobile sources. The model uses CalEEMod assumptions for energy and area sources for the one-story building and parking lot. Project specific water and energy consumptions for the swimming pools

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[4] The analysis modeled construction from November 2023 to June 2025, which would conservatively estimate emissions since emissions factors would decrease in accordance to statewide plans to reduce air quality and GHG emissions.

[5] Assume a pipeline installation rate of 80 linear feet per day. (1,424 linear feet divide by 80 linear feet per day) = 17.8 days

are described below. In addition, daily vehicle trips for the proposed Project were provided by Fehr & Peers (Fehr & Peers 2023).

Mobile Sources

Mobile source emissions are generated by the increase in vehicle trips to and from the Project site associated with the operation of on-site development. According to the traffic analysis prepared by Fehr and Peers, the proposed Project would generate 3,848 daily vehicle trips. Mobile emissions would be conservative since the traffic analysis utilized the peak daily attendance to estimate daily vehicle trips. The trip generation rates inputs in CalEEMod was adjusted to be consistent with the results in the traffic analysis. Due to rounding, CalEEMod overestimates total vehicle trips by approximately two trips per day for Saturday and four trips per day for Sunday, resulting in a conservative estimate of mobile emissions.

Energy Sources

Emissions from energy use include electricity and natural gas use. The proposed Project would generate air pollutant emissions associated with cooling and heating the building, heating the swimming pools, and lighting the parking lot. The emissions factors for natural gas combustion are based on the United States EPA’s AP-42 (*Compilation of Air Pollutant Emissions Factors*) and California Climate Action Registry (CCAR) General Reporting Protocol (CCAR 2009). The proposed Project would use approximately 7.245 million British Thermal Units to heat the swimming pools. Natural gas default assumptions for the proposed one-story building were used. Electricity emissions only apply to GHG emissions (as the energy is generated off-site) and are calculated by multiplying the energy use times the carbon intensity of the utility district per kilowatt hour (CAPCOA 2021).

Area Sources

Emissions associated with area sources, including consumer products, landscape maintenance, and architectural coating were calculated in CalEEMod and utilize standard emission rates from CARB, United States EPA, and emission factor values provided by the local air district (CAPCOA 2022).

CO Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. The entire SCCAB is in conformance with state and federal CO standards, and most air quality monitoring stations no longer report CO levels. The County of Ventura does not monitor CO emissions at its air monitoring stations nor is representative data available. A detailed CO analysis was conducted during the preparation of SCAQMD’s 2003 AQMP. The locations selected for microscale modeling in the 2003 AQMP included high average daily traffic (ADT) intersections in the SCAB, i.e., those which would be expected to experience the highest CO concentrations. The highest CO concentration observed occured at the intersection of Wilshire Boulevard and Veteran Avenue on the west side of Los Angeles near the I-405 Freeway, which has an ADT of approximately 100,000 vehicles per day. The concentration of CO at this intersection was 4.6 ppm, which is well below the state and federal standards (SCAQMD 2003). A truck traffic study was done for the City of Port Hueneme and City of Oxnard to analyze existing traffic conditions and identify traffic impacts. The study included all vehicle classification schemes in the analysis for estimating existing traffic conditions. According to the truck traffic study, the total traffic volume for Rose Avenue, adjacent the Project site, would be approximately 22,600 average daily vehicles[6](City of Oxnard 2008). The proposed Project would generate 3,848 new daily vehicle trips; therefore, the proposed Project would be below the average daily traffic volume in the 2003 AQMP study that did not produce a CO hotspot. Thus, the proposed Project would not result in a localized hotspot and this topic is not discussed further in this document.

3.2 Significance Thresholds

To determine whether a project would result in a significant impact to air quality, Appendix G of the *CEQA guidelines* requires consideration of whether a project would:

- Conflict with population or other growth forecasts contained in the Ventura County AQMP or otherwise obstruct implementation of the Ventura County AQMP?
- Violate any federal or state air quality standard or contribute substantially to an existing or Project air quality standard violation?
- Result in a net increase of any criteria pollutant in excess of quantitative thresholds recommended by the VCAPCD?
- Expose sensitive receptors to pollutant concentrations exceeding state or federal standards or in excess of applicable health risk criteria for toxic air contaminants?
- Create objectionable odors affecting a substantial number of people?

Thresholds

AQMP Consistency

The VCAPCD guidelines state that project consistency with the AQMP can be determined by comparing the actual population growth in the county from the proposed Project with the projected growth rates used in the AQMP. Therefore, a demonstration of consistency with the population forecasts used in the most recently adopted AQMP should be used for assessing project consistency with the AQMP.

VCAPCD Significance Thresholds for Ozone Precursors ROG and NO_X

For projects within the city, the VCAPCD guidelines (2003), provides “ROG and NO_X thresholds that the VCAPCD has determined will individually and cumulatively jeopardize attainment of the federal one-hour ozone standard, and thus have a significant adverse impact on air quality in Ventura County”. These thresholds are as follows:

- ROG:25 pounds/day
- NO_X: 25 pounds/day

According to the VCAPCD guidelines, construction-related emissions (including portable engines and portable engine-driven equipment subject to the CARB’s Statewide Portable Equipment Registration Program and used for construction operations or repair and maintenance activities) of ROG and NO_X are not counted towards the two significance thresholds, since these emissions are temporary. However, the VCAPCD guidelines state that if a project’s estimated construction-related emissions

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[6] The Rose Avenue and W Channel Island Boulevard intersection peak PM hour traffic volumes were approximately 2,260 average daily vehicles. Using the standard industry assumption that peak hour is 10 percent of average daily trafic, traffic volumes on Rose Avenue were estimated to be 22,600 average daily vehicles.

of ROG and NO_X would exceed 25 pounds/day, VCAPCD recommends the following measures to mitigate ozone precursor emissions from construction motor vehicles:

- Minimize equipment idling time
- Maintain equipment engines in good condition and in proper tune as per manufacturers' specifications
- Lengthen the construction period during smog season (May through October), to minimize the number of vehicles and equipment operating at the same time
- Use alternatively fueled construction equipment, such as compressed natural gas, liquefied natural gas, or electric, if feasible

San Joaquin Valley Fever

There is no recommended threshold for a significant San Joaquin Valley Fever impact. However, if there is the potential to expose workers or nearby residents to Coccidioidomycosis then implementation of the VCAPCD measures to reduce exposure should be included as mitigation for a project. Exposure reduction measures are listed in Section 2.3*, Air Quality Regulation*.

3.3 Impact Analysis

Threshold 1:	Would the Project conflict with population or other growth forecasts contained in the Ventura County AQMP or otherwise obstruct implementation of the Ventura County AQMP?

Impact AQ-1 THE PROPOSED PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT THE IMPLEMENTATION OF THE VCAPCD 2022 AIR QUALITY MANAGEMENT PLAN. NO IMPACTS WOULD OCCUR.

A project may be inconsistent with the applicable air quality plan if the project would generate population, housing, or employment growth exceeding the forecasts used in the development of the plan. This analysis examines the proposed Project's consistency with the VCAPCD's 2022 Ventura County AQMP. The 2022 Ventura County AQMP relies on the 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) forecasts of regional population growth in its projections for managing Ventura County's air quality (SCAG 2020a).

The proposed Project would not include new housing or population growth within Ventura County. The employment growth forecasts in the 2020 RTP/SCS for Oxnard estimate that the total number of jobs would increase from 61,100 in 2016 to 76,100 in 2045, for an increase of 15,000 jobs (SCAG 2020b). The proposed Project would include a peak of approximately 100 employees per day; therefore, this analysis assumes the proposed Project would generate 200 employment opportunities, which are anticipated to be filled by the local workforce already residing in Oxnard or the surrounding area. The employment opportunities that would be generated from the proposed Project would be within the SCAG 2045 employment forecast for the City of Oxnard. Therefore, the proposed Project would not conflict with or obstruct implementation of the applicable air quality plan. No impact would occur.

Threshold 2	Would the Project violate any federal or state air quality standard or contribute substantially to an existing or project air quality standard violation?
Threshold 3	Would the Project result in a net increase of any criteria pollutant in excess of quantitative thresholds recommended by the VCAPCD?

Impact AQ-2 PROJECT OPERATION WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT. HOWEVER, PROJECT CONSTRUCTION WOULD EXCEED THE VCAPCD NO_X THRESHOLD AND WOULD RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE FOR A CRITERIA POLLUTANT. HOWEVER, WITH INCORPORATION OF MITIGATION MEASURES REQUIRING TIER 4 ENGINE EQUIPMENT ALONG WITH VCACPD BEST MANAGEMENT PRACTICES FOR PRECURSOR OZONE EMISSIONS, THE IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

Construction Emissions

Project construction would generate temporary air pollutant emissions associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction equipment and construction vehicles in addition to ROG emissions that would be released during the drying of architectural coating and paving phases. Table 5 summarizes the estimated maximum daily emissions of pollutants during Project construction. As shown therein, construction-related emissions would exceed the VCAPCD threshold for NO_X. Therefore, impacts to air quality would be potentially significant.

Table 5 Project Construction Emissions

	Maximum Daily Emissions (pounds/day)[1]					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Aquatics Center						
2023[2]	4	47	38	<1	11	6
2024	2	18	19	<1	4	2
2025	5	12	15	<1	1	<1
Pipeline						
Overlap	4	34	33	<1	3	2
Maximum Daily Emissions	**9**	**81**	**71**	**<1**	**14**	**8**
VCAPCD Thresholds	25	25	–	–	–	–
Threshold Exceeded?	**No**	**Yes**				

VCAPCD = Ventura County Air Pollution Control District; ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

[1] This table provides a conservative analysis and presents the maximum daily emissions when the construction phases overlap.

See Appendix A for modeling details and CalEEMod results.

[2] Construction would begin in 1st quarter 2026 and end in 1st quarter 2028. The analysis modeled construction from November 2023 to June 2025, which would conservatively estimate emissions since emissions factors would decrease in accordance to statewide plans to reduce air quality and GHG emissions.

Notes: Some totals may not add up due to rounding. Emissions data is sourced from “mitigated” results, which incorporate emissions reductions from measures to be implemented during Project construction, such as watering of soils during construction required under VCAPCD Rule 55.

Operational Emissions

Operation of the proposed Project would generate criteria air pollutant emissions associated with area sources (e.g., architectural coatings, consumer products, and landscaping equipment), energy sources (i.e., use of natural gas for space and water heating), and mobile sources (i.e., vehicle trips to and from the Project site). Table 6 summarizes the proposed Project's maximum daily operational emissions by emission source. As shown therein, operational emissions would not exceed VCAPCD regional thresholds for criteria pollutants. Therefore, Project operation would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment, and impacts would be less than significant.

Table 6 Project Operational Emissions

	Maximum Daily Emissions (pounds/day)					
Emission Source	**ROG**	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area	1	<1	2	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	17	11	89	<1	6	1
Project Emissions	**17**	**11**	**91**	**<1**	**6**	**1**
SCAQMD Regional Thresholds	25	25	-	-	-	-
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

ROG = reactive organic gases; NO_x = nitrogen oxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; SO_x = sulfur oxide

Notes: Some numbers may not add up precisely due to rounding considerations.

Source: Table 2.2 "Overall Operation-Mitigated" emissions. Highest of Summer and Winter emissions results are shown for all emissions. The mitigated emissions account for project sustainability features and/or compliance with specific regulatory standards. No mitigation measures are required for this Project. See CalEEMod worksheets in Appendix A.

Mitigation Measures

The mitigation measure below is designed to control emissions caused by project construction mobile equipment necessary to perform these activities. Implementation of Mitigation Measure AQ-1 would reduce construction emissions of NO_X in accordance with VCAPCD guidance.

AQ-1 NO_X Construction Reduction Measures

During construction, the construction contractor shall implement the following measures pursuant to the requirements of the VCAPCD guidelines.

- Ensure all on-site vehicles and equipment with 50 horsepower or more shall meet, at a minimum, United States EPA Tier 4 final engine certification requirements. If Tier 4 final equipment is not available, the contractor may apply other technologies available for construction equipment which would achieve a reduction in NO_X (as well as PM) emissions comparable to Tier 4 final construction equipment. Where alternatives to United States EPA Tier 4 are utilized, the contractor shall be required to provide evidence these alternative technologies would achieve comparable emissions reductions. Certifications or alternative reduction strategies shall be required prior to receiving a construction permit.
- Minimize equipment idling time.

- Maintain equipment engines in good condition and in proper tune as per manufacturers' specifications.
- Lengthen the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time.
- Use alternatively fueled construction equipment, such as compressed natural gas, liquefied natural gas, or electric, if feasible.

Prior to initiation of construction activities, the City of Oxnard Public Works Department shall ensure the measures listed above are included in the construction specifications for the proposed Project.

Significance After Mitigation

Implementation of Mitigation Measure AQ-1 would reduce construction emissions of NO_X in accordance with VCAPCD guidance. Project construction emissions with implementation of Mitigation Measure AQ-1 are shown in Table 7. As shown in the table, emissions of NO_X would be reduced below 25pounds/day with the use of Tier 4 final equipment as compared to no specified tier. Therefore, impacts would be less than significant after mitigation.

Table 7 Construction Air Pollutant Emissions – Mitigated

	Maximum Daily Emissions (pounds/day)[1]					
Project Component	**ROC**	**NO_x**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Aquatic Center						
2023[2]	1	10	31	<1	9	5
2024	<1	3	19	<1	3	1
2025	4	4	17	<1	<1	<1
Pipeline						
Overlap	1	6	40	<1	2	<1
Maximum Daily Emissions	**5**	**17**	**71**	**<1**	**11**	**5**
VCAPCD Thresholds	25	25	–	–	–	–
Threshold Exceeded?	**No**	**No**				

VCAPCD = Ventura County Air Pollution Control District; ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

[1] This table provides a conservative analysis and presents the maximum daily emissions when the construction phases overlap.

See Appendix A for modeling details and CalEEMod results.

[2] Construction would begin in the 1st quarter of 2026 and end in the 1st quarter of 2028. The analysis modeled construction from November 2023 to June 2025, which would conservatively estimate emissions since emissions factors would decrease in accordance to statewide plans to reduce air quality and GHG emissions.

Notes: Some totals may not add up due to rounding. Emissions data is sourced from "mitigated" results, which incorporate emissions reductions from measures to be implemented during Project construction, such as watering of soils during construction required under VCAPCD Rule 55.

Threshold 4	Would the Project expose sensitive receptors to pollutant concentrations exceeding state or federal standards or in excess of applicable health risk criteria for toxic air contaminants?

Impact AQ-3 THE PROPOSED PROJECT WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL CONSTRUCTION TAC EMISSIONS, WITH THE IMPLEMENTATION OF MITIGATION MEASURE AQ-1. IN ADDITION, THE PROPOSED PROJECT IS NOT IDENTIFIED BY CARB AS A TYPICAL LAND USE THAT GENERATES SUBSTANTIAL TAC EMISSIONS. THE PROJECT WOULD IMPLEMENT VALLEY FEVER MEASURES CONSISTENT WITH THE VCAPCD GUIDELINES DURING PROJECT CONSTRUCTION. THEREFORE, IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

As discussed under Section 2.4, *Current Air Quality*, the closest sensitive receptors to the Project site are students at Channel Island High School, 200 feet northwest of the Project site, and single family residents approximately 415 feet northeast of the Project site. TAC impacts to sensitive receptors are discussed in the following subsections.

Toxic Air Contaminants

Construction Impacts

Construction-related activities would result in temporary project-generated emissions of DPM exhaust emissions from off-road, heavy-duty diesel equipment for site preparation, grading, building construction, and other construction activities. The prevailing winds for Oxnard are westerly, which is directed to residential neighborhoods 800 feet east of the Project site, rather than the nearest sensitive receptors approximately 200 feet northwest of the Project site and 415 feet northeast of the Project site. The proposed Project would be consistent with the applicable 2022 AQMP requirements and control strategies intended to reduce emissions from construction equipment and activities. With the incorporation of Mitigation Measure MM AQ-1, the proposed Project would be required to use off-road diesel-powered construction equipment that meets or exceeds the most stringent and environmentally protective CARB and United States EPA Tier 4 off-road emissions standards, or alternatively fueled equipment which would substantially reduce DPM emissions. Thus, with implementation of Mitigation Measure MM AQ-1, construction activities would reduce the TAC exposure to sensitive receptors and impacts would be less than significant.

Operational Impacts

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) provides recommendations regarding the siting of new sensitive land uses near potential sources of air toxic emissions (e.g., freeways, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and gasoline dispensing facilities). CARB guidelines recommend siting distances both for the development of sensitive land uses in proximity to TAC sources and for the addition of new TAC sources in proximity to existing sensitive land uses. Recreational land uses are not considered land uses that generate substantial TAC emissions based on review of the air toxic sources listed in CARB's guidelines. It is expected that quantities of hazardous TACs generated on-site (e.g., cleaning solvents, paints, landscape pesticides, etc.) for the types of proposed land uses would be below thresholds warranting further study under the California Accidental Release Program. Because the Project would not include substantial TAC sources and is consistent with CARB guidelines, it would not result in the exposure of off-site sensitive receptors to significant amounts of carcinogenic or toxic air contaminants. Impacts would be less than significant.

San Joaquin Valley Fever

The residents of Ventura County have been and will continue to be exposed to Valley Fever from agricultural and construction activities occurring throughout the region. The fungal spores responsible for Valley Fever generally grow in virgin, undisturbed soil. The standard construction measures listed in Section *2.3, Air Quality Regulation*, would reduce fugitive dust generation, which would further minimize the potential risk of infection. Therefore, construction of the proposed Project would not substantially increase the risk to public health above existing background levels. In addition, given the temporary nature of construction emissions, as well as incorporation of fugitive dust reduction measures through compliance with existing VCAPCD regulations, the potential impact associated with Valley Fever would be less than significant.

Threshold 5	Would the Project create objectionable odors affecting a substantial number of people?

Impact AQ-4 THE PROJECT WOULD NOT GENERATE ODORS ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE DURING CONSTRUCTION OR OPERATION. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Project construction could generate odors associated with heavy-duty equipment operation and earth-moving activities. Such odors would be temporary in nature and limited to the duration of construction in the vicinity of a given receptor. Overall, Project construction would not generate other emissions, such as those leading to odors, affecting a substantial number of people. Construction-related impacts would be less than significant.

With respect to operation, CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) provides recommendations regarding the siting of new sensitive land uses near potential sources of odors (e.g., sewage treatment plants, landfills, recycling facilities, biomass operations, autobody shops, fiberglass manufacturing, and livestock operations). An aquatics center is not identified on this list. Therefore, the proposed Project would not generate objectionable odors affecting a substantial number of people, and impacts would be less than significant.

4 Greenhouse Gas Emissions

4.1 Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but climate change is preferred because it conveys other changes are happening in addition to rising temperatures. The baseline against which these changes are measured originates in historical records that identify temperature changes that occurred in the past, such as during previous ice ages. The global climate is changing continuously, as evidenced in the geologic record which indicates repeated episodes of substantial warming and cooling. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming over the past 150 years. The United Nations Intergovernmental Panel on Climate Change (IPCC) expressed that the rise and continued growth of atmospheric carbon dioxide (CO_2) concentrations is unequivocally due to human activities in the IPCC's Sixth Assessment Report (2021). Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, that a total of 2,390 gigatonnes of anthropogenic CO_2 was emitted. It is likely that anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius between the years 2010 through 2019 (IPCC 2021). Furthermore, since the late 1700s, estimated concentrations of CO_2, methane (CH_4), and nitrous oxide (N_2O) in the atmosphere have increased by over 43 percent, 156 percent, and 17 percent, respectively, primarily due to human activity (United States EPA 2021b). Emissions resulting from human activities are thereby contributing to an average increase in Earth's temperature.

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases widely seen as the principal contributors to human-induced climate change include CO_2, CH_4, N_2O, fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations.

GHGs are emitted by natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are usually by-products of fossil fuel combustion, and CH_4 results from off-gassing associated with agricultural practices and landfills. Human-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6 (United States EPA 2021b).

Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (IPCC 2021).[7]

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 33 degrees Celsius (°C) cooler (World Meteorological Organization 2020). However, since 1750, estimated concentrations of CO_2, CH_4, and N_2O in the atmosphere have increased by 47 percent, 156 percent, and 23 percent, respectively, primarily due to human activity (IPCC 2021). GHG emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

4.2 Greenhouse Gas Emissions Inventory

Global Emissions Inventory

In 2015, worldwide anthropogenic total 47,000 billion MT of CO_2e, which is a 43 percent increase from 1990 GHG levels (United States EPA 2021c). Specifically, 34,522 million metric tons (MMT) of CO_2e of CO_2, 8,241 MMT of CO_2e of CH_4, 2,997 MMT of CO_2e of N_2O, and 1,001 MMT of CO_2e of fluorinated gases were emitted in 2015. The largest source of GHG emissions were energy production and use (includes fuels used by vehicles and buildings), which accounted for 75 percent of the global GHG emissions. Agriculture uses and industrial processes contributed 12 percent and six percent, respectively. Waste sources contributed for three percent and two percent was due to international transportation sources. These sources account for approximately 98 percent because there was a net sink of two percent from land-use change and forestry. (United States EPA 2021c).

United States Emissions Inventory

United States. GHG emissions were 5,981.4 MMT of CO_2e in 2020. Emissions decreased by nine percent from 2019 to 2020; since 1990, total United States. emissions have decreased by 7.3 percent from 1990 to 2020, down from a high of 15.7 percent above 1990 levels in 2007. The sharp decline in emissions from 2019 to 2020 is largely due to the impacts of the coronavirus (COVID-19) pandemic on travel and economic activity; however, the decline also reflects the combined impacts of long-term trends in many factors, including population, economic growth, energy markets, technological changes including energy efficiency, and the carbon intensity of energy fuel choices. In 2020, transportation activities accounted for the largest portion (27.2 percent) of total United States greenhouse gas emissions. Emissions from electric power accounted for the second largest portion (24.8 percent), while emissions from industry accounted for the third largest portion (23.8 percent) of total United States greenhouse gas emissions in 2020 (United States EPA 2022b).

California Emissions Inventory

Based on the CARB California Greenhouse Gas Inventory for 2000-2020, California produced 369.2 MMT of CO_2e in 2020, which is 35.3 MMT of CO_2e lower than 2019 levels. The 2019 to 2020 decrease in emissions is likely due in large part to the impacts of the COVID-19 pandemic. The major source of GHG emissions in California is the transportation sector, which comprises 37 percent of

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[7] The Intergovernmental Panel on Climate Change's (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change's (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

the state's total GHG emissions. The industrial sector is the second largest source, comprising 20 percent of the state's GHG emissions while electric power accounts for approximately 16 percent (CARB 2022). The magnitude of California's total GHG emissions is due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions as compared to other states is its relatively mild climate. In 2016, the state of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels as emissions fell below 431 MMT of CO_2e (CARB 2021d). The annual 2030 statewide target emissions level is 260 MMT of CO_2e (CARB 2017).

City of Oxnard Emissions Inventory

The City of Oxnard's Climate Action and Adaption Plan presents an inventory of GHG emissions originating from the city and sets forth strategies and actions to reduce emissions and help the community adapt to a changing climate. In 2020, the city completed an inventory of emissions for the year 2010, representing the earliest year for which the necessary data was available, and for the year 2018, representing the most recent year for which data was available. For the year 2018, GHG emissions totaled 876,140 MT of CO_2e, which is 123,648 MT of CO_2e lower than 2010 levels. The major source of GHG emissions in City of Oxnard is the transportation sector, which comprises 44 percent of the City's total GHG emissions. The electricity sector is the second largest source, comprising 24 percent of the City's GHG emissions while natural gas accounts for approximately 19 percent (City of Oxnard 2022).

4.3 Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources though potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. The year 2022 was the sixth warmest year since global records began in 1880 at 0.86°C (1.55°F) above the 20th century average of 13.9°C (57.0°F). This value is 0.13°C (0.23°F) less than the record set in 2016 and it is only 0.02°C (0.04°F) higher than the last year's (2021) value, which now ranks as the seventh highest (NOAA 2023b). Furthermore, several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations jointly indicate that LSAT and sea surface temperatures have increased. Due to past and current activities, anthropogenic GHG emissions are increasing global mean surface temperature at a rate of 0.2°C per decade. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC 2014, 2018).

Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (California Natural Resource Agency 2019). *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally specific climate change case studies. However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy (California Natural Resource Agency 2019). A summary follows of some of the potential effects that climate change could generate in California.

Air Quality and Wildfires

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century (California Natural Resource Agency 2019). Higher temperatures are conducive to air pollution formation and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains (California Natural Resource Agency 2019). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state. With increasing temperatures, shifting weather patterns, longer dry seasons, and more dry fuel loads, the frequency of large wildfires and area burned is expected to increase (California Natural Resources Agency 2021).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common (California Department of Water Resources 2018). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meter along the central and southern California coasts (California Natural Resource Agency 2019). The Sierra snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack (California Natural Resource Agency 2019). Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (California Natural Resource Agency 2019).

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding (California Natural Resource Agency 2019). Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels between 1993 to 2022, observed by satellites, is approximately 3.4 millimeters per year, double the twentieth century trend of 1.6 millimeters per year (World Meteorological Organization 2013; National Aeronautics and Space Administration 2023). Global mean sea levels in 2013 were about 0.23 meter higher than those of 1880 (N 2022). Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea level rise ranging between 0.25 to 1.01 meters by 2100 with the sea level ranges dependent on a low, intermediate, or high GHG emissions scenario (IPCC 2021). A rise in sea levels could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California's water supply due to saltwater intrusion and induce groundwater flooding and/or exposure of buried infrastructure (California Natural Resource Agency 2019). Furthermore, increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has an over $50 billion annual agricultural industry that produces over a third of the country's vegetables and two-thirds of the country's fruits and nuts (California Department of Food and Agriculture 2020). Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (California Natural Resource Agency 2019). Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (California Climate Change Center 2006).

Ecosystems

Climate change and the potential resultant changes in weather patterns could have ecological effects on the global and local scales. Soil moisture is likely to decline in many regions due to higher temperatures, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; California Natural Resource Agency 2019).

4.4 Regulatory and Legal Setting

Federal Regulations

Federal Clean Air Act

The U.S. Supreme Court determined in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) that the United States EPA has the authority to regulate motor vehicle GHG emissions under the federal CAA. The United States EPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the United States EPA issued a Final Rule that established the GHG permitting thresholds that determine when CAA permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities.

In *Utility Air Regulatory Group v. Environmental Protection Agency* (134 Supreme Court 2427 [2014]), the United States Supreme Court held United States EPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits otherwise required based on emissions of other pollutants may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

State Regulations

CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below. For more information on the Senate and Assembly Bills, executive orders, building codes, and reports discussed below, and to view reports and research referenced below, please refer to the following websites: https://www.energy.ca.gov/data-reports/reports/californias-fourth-climate-change-assessment, www.arb.ca.gov/cc/cc.htm, and https://www.dgs.ca.gov/BSC/Codes.

California Advanced Clean Cars Program

AB 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, the United States EPA granted the waiver of CAA preemption to California for its GHG emission standards for motor vehicles, beginning with the 2009 model year, which allows California to implement more stringent vehicle emission standards than those promulgated by the United States EPA. Pavley I regulates model years from 2009 to 2016 and Pavley II, now referred to as "LEV (Low Emission Vehicle) III GHG," regulates model years from 2017 to 2025. The Advanced Clean Cars program coordinates the goals of the LEV, Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs and would provide major reductions in GHG emissions. By 2025, the rules will be fully implemented, and new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB 2011).

California Global Warming Solutions Act of 2006 (Assembly Bill 32 and Senate Bill 32)

The "California Global Warming Solutions Act of 2006," (AB 32), outlines California's major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 MMT CO_2e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan's approval.

The CARB approved the 2013 Scoping Plan update in May 2014. The update defined the CARB's climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the state's longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

On September 8, 2016, the governor signed SB 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100 (discussed later). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of six MT CO_2e by 2030 and two MT CO_2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state (CARB 2017).

2022 Update to the Climate Change Scoping Plan

In response to the passage of AB 1279 and the identification of the 2045 GHG reduction target, CARB published the Final 2022 Climate Change Scoping Plan in November 2022 (CARB 2022a). The 2022 Update builds upon the framework established by the 2008 Climate Change Scoping Plan and previous updates while identifying new, technologically feasible, cost-effective, and equity-focused path to achieve California's climate target. The 2022 Update includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable development, increased action no natural and working lands (NWL) to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Update assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan, addresses recent legislation and direction from Governor Newsom, extends and expands upon these earlier plans, and implements a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045, as well as taking an additional step of adding carbon neutrality as a science-based guide for California's climate work. As stated in the 2022 Update, "The plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet the anthropogenic emissions target and by expanding actions to capture and store carbon through the state's NWL and using a variety of mechanical approaches" (CARB 2022a). Specifically, the 2022 Update:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.

- Incorporates the contribution of NWL to the state’s GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

In addition to reducing emissions from transportation, energy, and industrial sectors, the 2022 Update includes emissions and carbon sequestration in NWL and explores how NWL contribute to long-term climate goals. Under the Scoping Plan Scenario, California’s 2030 emissions are anticipated to be 48 percent below 1990 levels, representing an acceleration of the current SB 32 target. Cap-and-Trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the accelerated 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet our GHG reduction goals and achieve carbon neutrality no later than 2045. The 2022 Update approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state’s ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO’s Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as “transit priority projects”) can receive incentives to streamline CEQA processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The SCAG was assigned targets of an 8 percent reduction in per capita GHG emissions from passenger vehicles by 2020[8] and a 19 percent reduction in per capita GHG emissions from passenger vehicles by 2035. In the SCAG region, SB 375 also provides the option for the coordinated development of subregional plans by the subregional councils of governments and the county transportation commissions to meet SB 375 requirements.

Senate Bill 1383

Adopted in September 2016, SB 1383 (Lara, Chapter 395, Statutes of 2016) requires the CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. SB 1383 requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

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[8] SCAG met 2020 GHG reduction but confirmation from CARB is still pending.

SB 1383 also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with the CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard (RPS) Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Executive Order B-55-18

On September 10, 2018, the former Governor Brown issued Executive Order (EO) B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

California Building Standards Codes

The California Code of Regulations (CCR) Title 24 is referred to as the California Building Standards Code. It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2022 Title 24 standards. The California Building Standards Code's energy-efficiency and green building standards are outlined below.

PART 6 – BUILDING ENERGY EFFICIENCY STANDARDS/ENERGY CODE

CCR Title 24, Part 6 is the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission (CEC). The 2022 Title 24 standards are the applicable building energy efficiency standards for the proposed Project because they became effective on January 1, 2023.

PART 11 – CALIFORNIA GREEN BUILDING STANDARDS

The California Green Building Standards Code, referred to as CALGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 California Building Standards Code). The 2022 CALGreen includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures. It also includes voluntary tiers with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory CALGreen standards and may adopt additional amendments for stricter requirements.

California Integrated Waste Management Act (Assembly Bill 341)

The California Integrated Waste Management Act of 1989, as modified by AB 341 in 2011, requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995 through source reduction, recycling, and composting activities and (2) diversion of 50 percent of all solid waste on and after January 1, 2000.

Executive Order N-79-20

On September 23, 2020, Governor Newsom issued EO N-79-20, which established the following new statewide goals:

- All new passenger cars and trucks sold in-state to be zero-emission by 2035;
- All medium- and heavy-duty vehicles in the state to be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and
- All off-road vehicles and equipment to be zero-emission by 2035 where feasible.

EO N-79-20 directs CARB, the Governor's Office of Business and Economic Development, the CEC, the California Department of Transportation, and other state agencies to take steps toward drafting regulations and strategies and leveraging agency resources toward achieving these goals.

The California Climate Crisis Act (Assembly Bill 1279)

AB 1279 was passed on September 16, 2022 and declares the state would achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045. In addition, achieve and maintain net negative greenhouse gas emissions and ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85% below the 1990 levels. The bill would require updates to the scoping plan (once every five years) to implement various policies and strategies that enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies.

Clean Energy, Jobs, and Affordability Act of 2022 (Senate Bill 1020)

Adopted on September 16, 2022, SB 1020 creates clean electricity targets for eligible renewable energy resources and zero-carbon resources to supply 90 percent of retail sale electricity by 2035, 95 percent by 2040, 100 percent by 2045, and 100 percent of electricity procured to serve all state agencies by 2035. This bill shall not increase carbon emissions elsewhere in the western grid and shall not allow resource shuffling.

Regional Regulations

2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and addresses regional issues relating to transportation, the economy, community development and the environment. On September 3, 2020, SCAG's Regional Council formally adopted the 2020-2045 RTP/SCS (titled Connect SoCal). The 2020-2045 RTP/SCS builds upon the progress made through implementation of the 2016-2040 RTP/SCS and includes ten goals focused on promoting economic prosperity, improving mobility, protecting the environment, and supporting healthy/complete communities. The SCS implementation strategies include focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, and supporting implementation of sustainability policies. The SCS establishes a land use vision of center focused placemaking, concentrating growth in and near Priority Growth Areas, transferring of development rights, urban greening, creating greenbelts and community separators, and implementing regional advance mitigation (SCAG 2020).

City of Oxnard 2030 General Plan

The City of Oxnard's 2030 General Plan, adopted in 2011, contains a Sustainable Community chapter that address topics, such as climate change, alternative energy, and implementation of SB 375. The general plan lists several policies as part of its Sustainable Community and Infrastructure & Community Services chapter that support GHG emission reductions. See Section 2.3, *Air Quality Regulation*, for additional general plan policies that would support GHG emission reductions. The following would be applicable to the proposed Project (City of Oxnard 2010):

Goal ICS-11: Water supply, quality, distribution, and storage adequate for existing and future development.

Policy ICS-11.7 **Water Wise Landscapes.** Promote water conservation in landscaping for public facilities and streetscapes, residential, commercial, and industrial facilities and require new developments to incorporate water conserving fixtures (low water usage) and water-efficient plants into new and replacement landscaping.

City of Oxnard 2030 Climate Adaptation and Action Plan

The City of Oxnard's Climate Action and Adaptation Plan (CAAP) builds on the City's successes of implementing the City's 2030 General Plan and recommits to furthering the City's sustainability goals and policies. The CAAP establishes a target to reduce GHG emissions 40 percent below 1990 levels by 2030, consistent with state law. Strategies and actions to reduce GHG emissions locally include the following: Clean Energy, Green Buildings, Transportation; Land Use Water Conservation and Reuse, Waste Reduction and Recycling, and Nature-Based Solutions. The following would be applicable to the proposed Project (City of Oxnard 2022):

TRANSPORTATION

- **T1 Expand Zero Emission Vehicle (ZEV) Charging and Fueling Infrastructure:** Increase the number of EV charging stations throughout the city to 1,500.
- **T4- Improve Transit Effectiveness and Accessibility:** Increase local access to transit services mode shift and VMT reduction goals.

5 Greenhouse Gas Impact Analysis

5.1 Methodology

Calculations of CO_2, CH_4, and N_2O emissions are provided to identify the magnitude of potential project effects. The analysis focuses on CO_2, CH_4, and N_2O because these comprise 98 percent of all GHG emissions by volume and are the GHG emissions the proposed Project would emit in the largest quantities (IPCC 2014). Emissions of all GHGs are converted into their equivalent GWP in terms of CO_2 (i.e., CO_2e). Minimal amounts of other GHGs (such as chlorofluorocarbons [CFCs]) would be emitted; however, these other GHG emissions would not substantially add to the total. GHG emissions associated with Project construction and operational activity were calculated using the CalEEMod version 2022.1 (see Appendix A for calculations). The analysis uses CalEEMod assumptions for energy, and area sources for the one-story building and parking lot. Project specific inputs for water, energy, and solid waste for the recreational swimming pools and one-story building were included in the analysis. The Association of Environmental Professionals (2016) has recommended amortizing construction-related emissions over a 30-year period in conjunction with the proposed Project's operational emissions. This guidance is used in this analysis. See Section 3.1 *Methodology*, for the area, natural gas, and mobile source assumptions that inform the air quality and GHG emissions estimates.

Energy Sources

Emissions from energy use include electricity and natural gas use. The proposed Project would generate air pollutant emissions using electricity associated with cooling the one-story building and lighting the parking lot. Emissions from electricity use only applies to GHG emissions (as the energy is generated off-site and therefore may not be relevant for local and regional air quality conditions) and are calculated by multiplying the energy use by the carbon intensity of the utility district per kilowatt hour (CAPCOA 2022). The proposed Project would be served by Southern California Edison (SCE). Specific energy intensity factors (i.e., the amount of CO_2e per megawatt-hour) from SCE are used in the calculation of GHG emissions.

The default electricity consumption values in CalEEMod include the CEC-sponsored California Commercial End Use Survey and Residential Appliance Saturation Survey studies. The 2022.1 CalEEMod currently incorporates California's 2019 Title 24 building energy efficiency standards. CalEEMod assumption values for parking lot fixtures and cooling the building were used in the analysis.

Waste Sources

GHG emissions from waste generation were also calculated in CalEEMod and are based on CARB's methods for quantifying GHG emissions from solid waste using the degradable organic content of waste (CARB 2010). Waste disposal rates by land use and overall composition of municipal solid waste in California was primarily based on data provided by the California Department of Resources Recycling and Recovery (CalRecycle).

Water and Wastewater Sources

GHG emissions from water and wastewater usage calculated in CalEEMod were based on project-specific consumption of the pool areas and ancillary facilities. In addition, default electricity intensity from the CEC's 2006 *Refining Estimates of Water-Related Energy Use in California* using the average values for northern and southern California for landscaping water usage. The pool areas would use approximately 1,021,823 gallons of water annually to account for water loss from filter backwash, water splashed out of the pool, and evaporation. Anticipated wastewater from the ancillary facilities would be approximately 22,250 gallons per day. This analysis conservatively assumes water use of the ancillary facility would be 1:1 with wastewater generation. Therefore, anticipated water consumption for ancillary facilities inside the one-story building, based on a 50 week business operation, would be approximately 7,787,500 gallons per year.

5.2 Significance Thresholds

Based on Appendix G of the CEQA guidelines, impacts related to GHG emissions from the proposed Project would be significant if the proposed Project would:

- Generate greenhouse emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases or otherwise conflict with state goals for reducing GHG emissions in California?
- Contribute or be subject to potential secondary effects of climate change (e.g., sea level rise, increase fire hazard)?

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (*CEQA guidelines*, Section 15064[h][1]).

According to the state CEQA guidelines, projects can tier from a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the proposed Project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. This approach is considered by the Association of Environmental Professionals (2016) in its white paper, *Beyond Newhall and 2020*, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions. The City of Oxnard has not adopted a numerical significance threshold for assessing impacts related to GHG emissions, but has an adopted CAAP for reduction of GHG emissions. Neither the VCAPCD, California Office of Planning and Research, CARB, CAPCOA, nor any other state or applicable regional agency has adopted a numerical significance threshold for assessing GHG emissions that is applicable to the proposed Project.

In the absence of any adopted numeric threshold, the significance of the proposed Project's GHG emissions is evaluated consistent with *CEQA guidelines* Section 15064.4(b) by considering whether the proposed Project complies with applicable plans, policies, regulations, and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Therefore, the significance of the proposed Project's potential impacts regarding GHG emissions and climate change is evaluated based on consistency with plans and polices adopted for the purposes of reducing GHG emissions and mitigating the effects of climate change. The most directly applicable adopted regulatory plans to reduce GHG emissions are the 2022 Scoping Plan, the 2020-2045 RTP/SCS, the City of Oxnard General Plan and the City of Oxnard CAAP. GHG emissions from the construction and operation of the proposed Project are provided for informational purposes.

5.3 Project-level Impact Analysis

Threshold 1:	Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
Threshold 2:	Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases or otherwise conflict with state goals for reducing GHG emissions in California?

Impact GHG-1 THE PROPOSED PROJECT WOULD GENERATE TEMPORARY AND LONG-TERM INCREASES IN GHG EMISSIONS. THE PROPOSED PROJECT WOULD BE CONSISTENT WITH THE 2022 SCOPING PLAN, 2020 SCAG RTP/SCS, AND THE CITY OF OXNARD CAAP, WHICH AIM AT REDUCING GHG EMISSIONS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Consistency with Applicable Plans and Policies

2022 Scoping Plan

The principal state plan to monitor and regulate GHGs is the AB 32, the California Global Warming Solutions Act of 2006, which was followed by SB 32. The quantitative goal of AB 32 was to reduce GHG emissions to 1990 levels by 2020. According to CARB, California achieved its 2020 GHG emission reduction target in 2016. The goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. Pursuant to SB 32, the Scoping Plan was created to outline goals and measures for the state to achieve the reductions, the latest iteration of which is the 2022 Scoping Plan. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the state's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities. The proposed Project would be consistent with these goals through Project design, which includes complying with the latest Title 24 Green Building Code and Building Efficiency Energy Standards. The proposed Project would allocate six passenger vehicle spaces for electric vehicle charging. In addition, the Project would install water efficient fixtures to conform to state water conservation requirements. The proposed Project would be served by SCE, which is required to increase its renewable energy procurement in accordance with SB 100 targets. The Project site has access to Gold Coast Transit bus stops 8 and 17 along Rose Avenue, within a quarter of a mile of the Project site. The proposed Project will not conflict with the 2022 Scoping Plan.

2020-2045 REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

On September 3, 2020, SCAG's Regional Council formally adopted the 2020-2045 RTP/SCS (titled Connect SoCal). The 2020-2045 RTP/SCS is forecast to help California reach its GHG reduction goals by reducing GHG emissions from passenger cars in the SCAG region by 8 percent below 2005 levels by 2020 and 19 percent by 2035 in accordance with the most recent CARB targets adopted in March 2018. The 2020-2040 RTP/SCS includes ten goals with corresponding implementation strategies for focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, and supporting implementation of sustainability policies. The proposed Project is an infill development that would add an amenity to several neighboring residential communities within approximately half a mile radius from the Project site. The Project site has access to Gold Coast Transit bus stops 8 and 17 along Rose Avenue, within a quarter of a mile of the Project site. In addition, the proposed Project's proximity to residential communities and education facilities could potentially reduce commute times to new job opportunities. The proposed Project would allocate six of parking spaces to electric, and 19 would be EV capable, meaning infrastructure that would support the future installation of an EV charging stations would be provided. Therefore, the proposed project would be consistent with the GHG emissions reduction strategies contained in the RTP/SCS.

City of Oxnard 2030 General Plan

In October 2011, the City of Oxnard adopted the City of Oxnard 2030 General Plan to provide the city with a consistent framework for land use decisions. The 2030 General Plan includes the state-required elements, and a chapter on sustainable community development that addresses recently emerging topics of climate change, alternative energy, and the implementation of SB 375. The General Plan lists several policies in Chapter 2, *Sustainable Community,* and Chapter 4, *Infrastructure & Community Services,* that support GHG emission reductions. The proposed Project would be consistent with the goals and policies stated under Section 2.3*, Air Quality Regulation*, and Section 4.4, *Regulatory and Legal Setting,* pertinent to GHG emission reduction. The proposed Project would be consistent with the General Plan's polices to incorporate energy efficient and water conserving fixtures consistent with the conservation requirements in the latest iteration of Title 24. The proposed Project would include bike racks and is within a quarter of a mile from transit along Rose Avenue to promote alternative modes of transportation. Therefore, the proposed Project would be consistent with the goals and policies in the 2030 General Plan to increase energy and water efficiency and potentially reduce the amount of motor vehicle trips through availability of transit and connectivity to surrounding neighborhoods.

City of Oxnard Climate Adaptation and Action Plan

The City of Oxnard CAAP outlines goals, strategies, and actions for reducing emissions and increasing community resilience to climate change. The CAAP ensures that Oxnard does its part to contribute to the goals of AB 32 and its successor legislation, SB 32, while remaining consistent with the City's General Plan vision for future growth. In developing this CAAP, the City of Oxnard considered many potential GHG-reduction strategies and actions. Several strategies and actions are primarily for the City of Oxnard to achieve throughout the community. The proposed Project would be consistent with several transportation strategies, such as T1: Expand Zero Emissions Charging and Fueling Infrastructure, T3: Expand Infrastructure for Pedestrians, Bikes, and Micro-mobility Solutions, and T4: Improve Transit Effectiveness and Accessibility. The proposed Project would include six electric charging stations and 19 EV-capable parking spaces. In addition, 16 bicycle racks would be installed at the main entrance of the aquatics center to promote alternative modes of transportation. The Project site has access to Gold Coast Transit bus stops 8 and 17 along Rose Avenue, within a quarter of a mile of the site. Therefore, the proposed Project could potentially reduce the reliance on motor vehicle trips and thus VMT. The proposed Project would be consistent with the goals outlined in the CAAP.

GHG Emissions

GHG emissions are provided for informational purposes. Construction of the proposed Project would generate temporary GHG emissions primarily from the operation of construction equipment as well as from vehicles transporting construction workers to and from the Project site and heavy trucks to transport building materials. As shown in Table 8, construction of the proposed Project would generate an estimated total of 626 MT CO_2e. Amortized over a 30-year period per SCAQMD guidance, construction of the proposed Project would generate an estimated 21 MT CO_2e per year.

Table 8 Estimated Construction Emissions of Greenhouse Gases

Construction	Project Emissions MT CO_2e
Aquatic Center	
2023[1]	120
2024	320
2025	144
Pipeline	
Overlap	42
Total	**626**
Amortized over 30 Years	21

MT CO_2e = metric tons of carbon dioxide equivalent

[1] Construction would begin in 1st quarter 2026 and end in 1st quarter 2028. The analysis modeled construction from November 2023 to June 2025, which would conservatively estimate emissions since emissions factors would decrease in accordance to statewide plans to reduce air quality and GHG emissions.

Source: Appendix A CalEEMod worksheets

Operation of the proposed Project would generate GHG emissions associated with area sources, energy and water usage, vehicle trips, and wastewater and solid waste generation. Table 9 combines the estimated construction and operational GHG emissions associated with development of the proposed Project. As shown therein, annual emissions from the proposed Project would be approximately 3,023 MT of CO_2e per year.

Table 9 Combined Annual Emissions of Greenhouse Gases

Emission Source	Annual Emissions (MT CO_2e)
Construction[1]	**21**
Operational	**3,002**
Area	1
Energy	84
Mobile	2,850
Solid Waste	50
Water, Wastewater	17
Total	**3,023**

MT CO_2e = metric tons of carbon dioxide equivalent

[1] Amortized construction related GHG emissions over 30 years

Source: Appendix A CalEEMod worksheets.

Threshold 3: Would the Project contribute or be subject to potential secondary effects of climate change (e.g., sea level rise, increase fire hazard)?

Impact GHG-2 THE PROPOSED PROJECT IS LOCATED INLAND AND ABOVE SEA LEVEL AND NOT WITHIN A FORESTED AREA PRONE TO WILDFIRES. THE PROPOSED PROJECT WOULD NOT INCREASE SECONDARY EFFECTS OF CLIMATE CHANGE TO THE SURROUNDING AREA. THEREFORE, THE PROPOSED PROJECT WOULD NOT BE SUBJECT TO OR CONTRIBUTE TO CLIMATE CHANGE EFFECTS AND IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Climate change may result in a number of secondary effects, including a reduction in the quality and supply of water from the Sierra snowpack, increased risk of large wildfires, reductions in the quality and quantity of certain agricultural products, exacerbation of air quality problems, increase in temperature and extreme weather events, and a decrease in the health and productivity of California's forests (California Climate Change Center 2006; Moser et al. 2009).

An individual Project could potentially be vulnerable to secondary effects of climate change with its site location or it could increase secondary effects to the surrounding area with its presences. To determine significance, an evaluation was completed to determine if the proposed Project would contribute or be subjected to the secondary effects of climate change expected to occur in California (see Table 10 below). As described in the evaluation, the proposed Project would not contribute or be subject to potential secondary effects of climate change. Project impacts related to climate change would be less than significant.

Table 10 Secondary Effects of Climate Change

Consequences of Climate Change in California	Project Evaluation
Reduction in the quality and supply of water from the Sierra snowpack. If heat-trapping emissions continue unabated, more precipitation would fall as rain instead of snow, and the snow that does fall would melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.	**The Project would not contribute or be subject to this potential secondary effect of climate change**. According to the City of Oxnard Urban Water Management Plan, the City anticipates it will be able to manage its water supply portfolio to provide adequate water to meet demand in normal, single-dry, and multiple dry years through the year 2045 (City of Oxnard 2021). The proposed Project's annual demand of 28.1 AF would account for approximately 0.09 percent of the projected 28,819 AF demand in 2025 and approximately 0.08 percent of the projected 33,349 AF demand in 2045 (City of Oxnard 2021). The proposed project would account for minimal demand anticipated by the City and would not substantially contribute to the reduction of the snowpack.
Increased risk of large wildfires. If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30 percent toward the end of the 21st century because more winter rain would stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.	**The Project would not contribute or be subject to this potential secondary effect of climate change.** The Project site is approximately 7.93-acre site located in Oxnard, California. The Project site is an undeveloped lot and is not in a forested area. The Project would not contribute to or be subject to an increased risk of large wildfires; related impacts would be less than significant.
Reductions in the quality and quantity of certain agricultural products. The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.	**The Project would not contribute or be subject to this potential secondary effect of climate change.** The proposed Project is recreational in nature and would not engage in the production of agricultural products.
Exacerbation of air quality problems. If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.	**The Project would not contribute or be subject to this potential secondary effect of climate change.** Health effects from air quality problems that would be exacerbated by an increase in temperature would more commonly occur at a local level. As discussed under Section 3.3, *Impact Analysis*, the proposed Project would not expose sensitive receptors to substantial pollutant concentrations.
A rise in sea levels resulting in the displacement of coastal businesses and residences. During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with saltwater, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats	**The Project would not contribute or be subject to this potential secondary effect of climate change.** The Project site is approximately 45 feet to 48 feet in elevation relative to local mean sea level. The Project site is approximately 2.7 miles inland. The proposed Project would not result in the displacement of coastal businesses and residences or be displaced due to a rise in sea levels.

Consequences of Climate Change in California	Project Evaluation
Increased temperature and extreme weather events. Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.	**The Project would not contribute or be subject to this potential secondary effect of climate change.** Development of the proposed Project would not directly contribute to an increase in temperature or extreme weather events. In addition, the aquatic center could potentially provide relief to the community during extreme heat events.
A decrease in the health and productivity of California's forests. Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.	**The Project would not contribute or be subject to this potential secondary effect of climate change.** The Project site is not forested, and development of the site would not contribute to a change in the health and productivity of forested land. Development and operations of the proposed Project would not result in an increase in wildfire, nor would it enhance insect populations or establish non-native species, resulting in a decrease in the health or productivity of California's forests.

Source of consequences of climate change in California: CCCC 2006; and Moser et al. 2009.

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Appendix A

CalEEMod Output Files

South Oxnard Aquatics Center-AQ Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	South Oxnard Aquatics Center-AQ
Lead Agency	City of Oxnard
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.20
Precipitation (days)	16.0
Location	34.16879846631173, -119.15473399874237
County	Ventura
City	Oxnard
Air District	Ventura County APCD
Air Basin	South Central Coast
TAZ	3423
EDFZ	8
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Recreational Swimming Pool	25.0	1000sqft	0.57	24,393	0.00	—	—	—
Parking Lot	103	Space	0.93	0.00	0.00	—	—	—

Other Asphalt Surfaces	33.0	1000sqft	0.76	0.00	0.00	—	—	—
General Office Building	19.0	1000sqft	5.70	18,342	81,179	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.74	11.6	15.0	0.03	0.50	0.19	0.66	0.46	0.05	0.50	—	2,835	2,835	0.11	0.05	1.03	2,854
Mit.	4.74	11.6	15.0	0.03	0.50	0.19	0.66	0.46	0.05	0.50	—	2,835	2,835	0.11	0.05	1.03	2,854
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	4.12	47.4	37.7	0.08	1.87	21.2	23.1	1.73	10.5	12.3	—	10,940	10,940	0.34	0.91	0.33	11,221
Mit.	4.12	47.4	37.7	0.08	1.87	9.21	11.1	1.73	4.36	6.09	—	10,940	10,940	0.34	0.91	0.33	11,221
% Reduced	—	—	—	—	—	57%	52%	—	59%	50%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.92	8.30	9.95	0.02	0.36	1.48	1.63	0.33	0.72	0.87	—	1,921	1,921	0.08	0.04	0.30	1,933
Mit.	0.92	8.30	9.95	0.02	0.36	0.62	0.78	0.33	0.30	0.44	—	1,921	1,921	0.08	0.04	0.30	1,933
% Reduced	—	—	—	—	—	58%	52%	—	59%	50%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.17	1.51	1.82	< 0.005	0.07	0.27	0.30	0.06	0.13	0.16	—	318	318	0.01	0.01	0.05	320
Mit.	0.17	1.51	1.82	< 0.005	0.07	0.11	0.14	0.06	0.05	0.08	—	318	318	0.01	0.01	0.05	320
% Reduced	—	—	—	—	—	58%	52%	—	59%	50%	—	—	—	—	—	—	—
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	No	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mit.	No	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mit.	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.28	11.5	13.9	0.02	0.50	0.16	0.66	0.46	0.04	0.50	—	2,682	2,682	0.11	0.05	0.98	2,700
2025	4.74	11.6	15.0	0.03	0.46	0.19	0.65	0.42	0.05	0.47	—	2,835	2,835	0.11	0.05	1.03	2,854
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	4.12	47.4	37.7	0.08	1.87	21.2	23.1	1.73	10.5	12.3	—	10,940	10,940	0.34	0.91	0.33	11,221
2024	1.96	18.3	19.4	0.03	0.84	7.19	8.03	0.77	3.45	4.22	—	3,071	3,071	0.13	0.05	0.03	3,083
2025	1.19	10.7	13.7	0.02	0.43	0.16	0.60	0.40	0.04	0.44	—	2,671	2,671	0.11	0.05	0.02	2,688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.34	3.61	3.20	0.01	0.15	1.48	1.63	0.14	0.72	0.87	—	714	714	0.02	0.04	0.26	728
2024	0.92	8.30	9.95	0.02	0.36	0.17	0.53	0.33	0.06	0.39	—	1,921	1,921	0.08	0.03	0.30	1,933
2025	0.70	3.57	4.65	0.01	0.15	0.05	0.20	0.14	0.01	0.15	—	862	862	0.04	0.01	0.13	868
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.06	0.66	0.58	< 0.005	0.03	0.27	0.30	0.03	0.13	0.16	—	118	118	< 0.005	0.01	0.04	120
2024	0.17	1.51	1.82	< 0.005	0.07	0.03	0.10	0.06	0.01	0.07	—	318	318	0.01	0.01	0.05	320
2025	0.13	0.65	0.85	< 0.005	0.03	0.01	0.04	0.02	< 0.005	0.03	—	143	143	0.01	< 0.005	0.02	144

2.3. Construction Emissions by Year, Mitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.28	11.5	13.9	0.02	0.50	0.16	0.66	0.46	0.04	0.50	—	2,682	2,682	0.11	0.05	0.98	2,700

2025	4.74	11.6	15.0	0.03	0.46	0.19	0.65	0.42	0.05	0.47	—	2,835	2,835	0.11	0.05	1.03	2,854
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	4.12	47.4	37.7	0.08	1.87	9.21	11.1	1.73	4.36	6.09	—	10,940	10,940	0.34	0.91	0.33	11,221
2024	1.96	18.3	19.4	0.03	0.84	2.87	3.71	0.77	1.36	2.13	—	3,071	3,071	0.13	0.05	0.03	3,083
2025	1.19	10.7	13.7	0.02	0.43	0.16	0.60	0.40	0.04	0.44	—	2,671	2,671	0.11	0.05	0.02	2,688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.34	3.61	3.20	0.01	0.15	0.62	0.78	0.14	0.30	0.44	—	714	714	0.02	0.04	0.26	728
2024	0.92	8.30	9.95	0.02	0.36	0.14	0.50	0.33	0.04	0.37	—	1,921	1,921	0.08	0.03	0.30	1,933
2025	0.70	3.57	4.65	0.01	0.15	0.05	0.20	0.14	0.01	0.15	—	862	862	0.04	0.01	0.13	868
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.06	0.66	0.58	< 0.005	0.03	0.11	0.14	0.03	0.05	0.08	—	118	118	< 0.005	0.01	0.04	120
2024	0.17	1.51	1.82	< 0.005	0.07	0.02	0.09	0.06	0.01	0.07	—	318	318	0.01	0.01	0.05	320
2025	0.13	0.65	0.85	< 0.005	0.03	0.01	0.04	0.02	< 0.005	0.03	—	143	143	0.01	< 0.005	0.02	144

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.3	9.92	88.0	0.18	0.15	6.26	6.41	0.14	1.11	1.25	105	18,728	18,833	10.2	0.92	72.3	19,435
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	16.6	11.1	89.2	0.17	0.15	6.26	6.40	0.14	1.11	1.25	105	18,118	18,223	10.3	0.99	2.03	18,778

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	16.0	10.4	83.5	0.17	0.14	5.99	6.13	0.14	1.06	1.19	105	17,464	17,569	10.2	0.93	30.0	18,132
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.91	1.89	15.2	0.03	0.03	1.09	1.12	0.02	0.19	0.22	17.4	2,891	2,909	1.69	0.15	4.96	3,002
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.5	9.77	86.1	0.18	0.14	6.26	6.39	0.13	1.11	1.23	—	18,156	18,156	1.05	0.88	72.1	18,516
Area	0.73	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504
Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16

Total	17.3	9.92	88.0	0.18	0.15	6.26	6.41	0.14	1.11	1.25	105	18,728	18,833	10.2	0.92	72.3	19,435
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.2	10.9	89.0	0.17	0.14	6.26	6.39	0.13	1.11	1.23	—	17,553	17,553	1.18	0.95	1.87	17,867
Area	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504
Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Total	16.6	11.1	89.2	0.17	0.15	6.26	6.40	0.14	1.11	1.25	105	18,118	18,223	10.3	0.99	2.03	18,778
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	15.4	10.2	82.5	0.17	0.13	5.99	6.12	0.12	1.06	1.18	—	16,895	16,895	1.08	0.89	29.8	17,217
Area	0.58	0.01	0.92	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.77	3.77	< 0.005	< 0.005	—	3.78
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504
Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Total	16.0	10.4	83.5	0.17	0.14	5.99	6.13	0.14	1.06	1.19	105	17,464	17,569	10.2	0.93	30.0	18,132
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.81	1.87	15.1	0.03	0.02	1.09	1.12	0.02	0.19	0.22	—	2,797	2,797	0.18	0.15	4.94	2,850
Area	0.11	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63
Energy	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	83.1	83.1	0.01	< 0.005	—	83.5
Water	—	—	—	—	—	—	—	—	—	—	3.12	10.4	13.5	0.08	0.01	—	17.4
Waste	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	50.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	2.91	1.89	15.2	0.03	0.03	1.09	1.12	0.02	0.19	0.22	17.4	2,891	2,909	1.69	0.15	4.96	3,002

2.6. Operations Emissions by Sector, Mitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.5	9.77	86.1	0.18	0.14	6.26	6.39	0.13	1.11	1.23	—	18,156	18,156	1.05	0.88	72.1	18,516
Area	0.73	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504
Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Total	17.3	9.92	88.0	0.18	0.15	6.26	6.41	0.14	1.11	1.25	105	18,728	18,833	10.2	0.92	72.3	19,435
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.2	10.9	89.0	0.17	0.14	6.26	6.39	0.13	1.11	1.23	—	17,553	17,553	1.18	0.95	1.87	17,867
Area	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504
Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Total	16.6	11.1	89.2	0.17	0.15	6.26	6.40	0.14	1.11	1.25	105	18,118	18,223	10.3	0.99	2.03	18,778
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	15.4	10.2	82.5	0.17	0.13	5.99	6.12	0.12	1.06	1.18	—	16,895	16,895	1.08	0.89	29.8	17,217
Area	0.58	0.01	0.92	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.77	3.77	< 0.005	< 0.005	—	3.78
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504
Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105

Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Total	16.0	10.4	83.5	0.17	0.14	5.99	6.13	0.14	1.06	1.19	105	17,464	17,569	10.2	0.93	30.0	18,132
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.81	1.87	15.1	0.03	0.02	1.09	1.12	0.02	0.19	0.22	—	2,797	2,797	0.18	0.15	4.94	2,850
Area	0.11	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63
Energy	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	83.1	83.1	0.01	< 0.005	—	83.5
Water	—	—	—	—	—	—	—	—	—	—	3.12	10.4	13.5	0.08	0.01	—	17.4
Waste	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	50.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	2.91	1.89	15.2	0.03	0.03	1.09	1.12	0.02	0.19	0.22	17.4	2,891	2,909	1.69	0.15	4.96	3,002

3. Construction Emissions Details

3.1. Site Preparation (2023) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.95	39.7	35.5	0.05	1.81	—	1.81	1.66	—	1.66	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	1.74	1.55	< 0.005	0.08	—	0.08	0.07	—	0.07	—	232	232	0.01	< 0.005	—	233
Dust From Material Movement	—	—	—	—	—	0.86	0.86	—	0.44	0.44	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.32	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.4	38.4	< 0.005	< 0.005	—	38.6
Dust From Material Movement	—	—	—	—	—	0.16	0.16	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.76	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	134	134	0.01	0.01	0.02	136
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	7.57	1.45	0.04	0.07	1.40	1.47	0.07	0.39	0.46	—	5,510	5,510	0.12	0.86	0.32	5,771
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.93	5.93	< 0.005	< 0.005	0.01	6.03

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.33	0.06	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	242	242	0.01	0.04	0.23	253
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.98	0.98	< 0.005	< 0.005	< 0.005	1.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	40.0	40.0	< 0.005	0.01	0.04	41.9

3.2. Site Preparation (2023) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.95	39.7	35.5	0.05	1.81	—	1.81	1.66	—	1.66	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	7.68	7.68	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	1.74	1.55	< 0.005	0.08	—	0.08	0.07	—	0.07	—	232	232	0.01	< 0.005	—	233

Dust From Material Movement	—	—	—	—	—	0.34	0.34	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.32	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.4	38.4	< 0.005	< 0.005	—	38.6
Dust From Material Movement	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.76	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	134	134	0.01	0.01	0.02	136
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	7.57	1.45	0.04	0.07	1.40	1.47	0.07	0.39	0.46	—	5,510	5,510	0.12	0.86	0.32	5,771
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.93	5.93	< 0.005	< 0.005	0.01	6.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.33	0.06	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	242	242	0.01	0.04	0.23	253
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.98	0.98	< 0.005	< 0.005	< 0.005	1.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	40.0	40.0	< 0.005	0.01	0.04	41.9

3.3. Grading (2023) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.04	20.0	19.7	0.03	0.94	—	0.94	0.87	—	0.87	—	2,958	2,958	0.12	0.02	—	2,968
Dust From Material Movement	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.53	1.50	< 0.005	0.07	—	0.07	0.07	—	0.07	—	226	226	0.01	< 0.005	—	227
Dust From Material Movement	—	—	—	—	—	0.54	0.54	—	0.26	0.26	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.28	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.4	37.4	< 0.005	< 0.005	—	37.5

Dust From Material Movement	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.65	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	115	115	0.01	< 0.005	0.01	117
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.85	8.85	< 0.005	< 0.005	0.02	8.99
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.49
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Grading (2023) - Mitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.04	20.0	19.7	0.03	0.94	—	0.94	0.87	—	0.87	—	2,958	2,958	0.12	0.02	—	2,968
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.53	1.50	< 0.005	0.07	—	0.07	0.07	—	0.07	—	226	226	0.01	< 0.005	—	227
Dust From Material Movement	—	—	—	—	—	0.21	0.21	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.28	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.4	37.4	< 0.005	< 0.005	—	37.5
Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.65	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	115	115	0.01	< 0.005	0.01	117
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.85	8.85	< 0.005	< 0.005	0.02	8.99
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.47	1.47	< 0.005	< 0.005	< 0.005	1.49
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2024) - Unmitigated

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

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

Dust From Material Movement	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.14	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.2	23.2	< 0.005	< 0.005	—	23.2
Dust From Material Movement	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.83	3.83	< 0.005	< 0.005	—	3.85
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.60	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	113	113	0.01	< 0.005	0.01	115
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.89	0.89	< 0.005	< 0.005	< 0.005	0.90
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Grading (2024) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.90	18.2	18.8	0.03	0.84	—	0.84	0.77	—	0.77	—	2,958	2,958	0.12	0.02	—	2,969
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.14	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.2	23.2	< 0.005	< 0.005	—	23.2

Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.83	3.83	< 0.005	< 0.005	—	3.85
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.60	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	113	113	0.01	< 0.005	0.01	115
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.89	0.89	< 0.005	< 0.005	< 0.005	0.90
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.15	0.15	< 0.005	< 0.005	< 0.005	0.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	7.95	9.29	0.02	0.35	—	0.35	0.32	—	0.32	—	1,699	1,699	0.07	0.01	—	1,704
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.45	1.70	< 0.005	0.06	—	0.06	0.06	—	0.06	—	281	281	0.01	< 0.005	—	282
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.68	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	127	127	0.01	0.01	0.54	129
Vendor	0.01	0.22	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	157	157	< 0.005	0.02	0.43	165
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.65	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	121	121	0.01	0.01	0.01	123
Vendor	0.01	0.23	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	157	157	< 0.005	0.02	0.01	164
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	86.5	86.5	0.01	< 0.005	0.17	87.9
Vendor	< 0.005	0.16	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	111	111	< 0.005	0.02	0.13	117
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.03	14.6
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	0.02	19.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2024) - Mitigated

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

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

Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	7.95	9.29	0.02	0.35	—	0.35	0.32	—	0.32	—	1,699	1,699	0.07	0.01	—	1,704
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.45	1.70	< 0.005	0.06	—	0.06	0.06	—	0.06	—	281	281	0.01	< 0.005	—	282
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.68	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	127	127	0.01	0.01	0.54	129
Vendor	0.01	0.22	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	157	157	< 0.005	0.02	0.43	165
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.65	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	121	121	0.01	0.01	0.01	123

Vendor	0.01	0.23	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	157	157	< 0.005	0.02	0.01	164
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.45	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	86.5	86.5	0.01	< 0.005	0.17	87.9
Vendor	< 0.005	0.16	0.05	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	111	111	< 0.005	0.02	0.13	117
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.03	14.6
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	0.02	19.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	2.78	3.47	0.01	0.11	—	0.11	0.11	—	0.11	—	638	638	0.03	0.01	—	640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.51	0.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	106	106	< 0.005	< 0.005	—	106
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.64	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	124	124	0.01	0.01	0.50	127
Vendor	0.01	0.21	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	155	155	< 0.005	0.02	0.43	162
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.61	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	119	119	0.01	0.01	0.01	121
Vendor	0.01	0.22	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	155	155	< 0.005	0.02	0.01	162
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.9	31.9	< 0.005	< 0.005	0.06	32.4
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.2	41.2	< 0.005	0.01	0.05	43.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.28	5.28	< 0.005	< 0.005	0.01	5.36

Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.82	6.82	< 0.005	< 0.005	0.01	7.14
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Building Construction (2025) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	2.78	3.47	0.01	0.11	—	0.11	0.11	—	0.11	—	638	638	0.03	0.01	—	640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.51	0.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	106	106	< 0.005	< 0.005	—	106
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.64	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	124	124	0.01	0.01	0.50	127
Vendor	0.01	0.21	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	155	155	< 0.005	0.02	0.43	162
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.61	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	119	119	0.01	0.01	0.01	121
Vendor	0.01	0.22	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	155	155	< 0.005	0.02	0.01	162
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.9	31.9	< 0.005	< 0.005	0.06	32.4
Vendor	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.2	41.2	< 0.005	0.01	0.05	43.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.28	5.28	< 0.005	< 0.005	0.01	5.36
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.82	6.82	< 0.005	< 0.005	0.01	7.14
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2025) - Unmitigated

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

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

Off-Road Equipment	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.63	0.85	< 0.005	0.03	—	0.03	0.03	—	0.03	—	128	128	0.01	< 0.005	—	129
Paving	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.15	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	21.3	21.3	< 0.005	< 0.005	—	21.3
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.59	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	116	116	0.01	< 0.005	0.46	118
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.47	9.47	< 0.005	< 0.005	0.02	9.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.57	1.57	< 0.005	< 0.005	< 0.005	1.59
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Paving (2025) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.63	0.85	< 0.005	0.03	—	0.03	0.03	—	0.03	—	128	128	0.01	< 0.005	—	129
Paving	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.15	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	21.3	21.3	< 0.005	< 0.005	—	21.3
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.59	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	116	116	0.01	< 0.005	0.46	118
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.47	9.47	< 0.005	< 0.005	0.02	9.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.57	1.57	< 0.005	< 0.005	< 0.005	1.59
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2025) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	3.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.4
Architectural Coatings	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.88	1.88	< 0.005	< 0.005	—	1.88
Architectural Coatings	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.9	24.9	< 0.005	< 0.005	0.10	25.3

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.03	2.03	< 0.005	< 0.005	< 0.005	2.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Architectural Coating (2025) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	3.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.4
Architectural Coatings	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.88	1.88	< 0.005	< 0.005	—	1.88
Architectural Coatings	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	24.9	24.9	< 0.005	< 0.005	0.10	25.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.03	2.03	< 0.005	< 0.005	< 0.005	2.07

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.34	0.34	< 0.005	< 0.005	< 0.005	0.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	15.8	9.35	82.4	0.17	0.13	5.99	6.13	0.12	1.06	1.18	—	17,393	17,393	1.00	0.84	69.1	17,737
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.75	0.42	3.71	0.01	0.01	0.26	0.27	0.01	0.05	0.05	—	763	763	0.05	0.04	3.02	778
Total	16.5	9.77	86.1	0.18	0.14	6.26	6.39	0.13	1.11	1.23	—	18,156	18,156	1.05	0.88	72.1	18,516

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	15.5	10.5	85.2	0.17	0.13	5.99	6.13	0.12	1.06	1.18	—	16,816	16,816	1.12	0.91	1.79	17,115
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.73	0.47	3.87	0.01	0.01	0.26	0.27	0.01	0.05	0.05	—	738	738	0.05	0.04	0.08	751
Total	16.2	10.9	89.0	0.17	0.14	6.26	6.39	0.13	1.11	1.23	—	17,553	17,553	1.18	0.95	1.87	17,867
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	2.71	1.80	14.5	0.03	0.02	1.06	1.08	0.02	0.19	0.21	—	2,704	2,704	0.17	0.14	4.77	2,756
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.10	0.06	0.52	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	92.9	92.9	0.01	0.01	0.16	94.8
Total	2.81	1.87	15.1	0.03	0.02	1.09	1.12	0.02	0.19	0.22	—	2,797	2,797	0.18	0.15	4.94	2,850

4.1.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	15.8	9.35	82.4	0.17	0.13	5.99	6.13	0.12	1.06	1.18	—	17,393	17,393	1.00	0.84	69.1	17,737
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.75	0.42	3.71	0.01	0.01	0.26	0.27	0.01	0.05	0.05	—	763	763	0.05	0.04	3.02	778
Total	16.5	9.77	86.1	0.18	0.14	6.26	6.39	0.13	1.11	1.23	—	18,156	18,156	1.05	0.88	72.1	18,516
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	15.5	10.5	85.2	0.17	0.13	5.99	6.13	0.12	1.06	1.18	—	16,816	16,816	1.12	0.91	1.79	17,115
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.73	0.47	3.87	0.01	0.01	0.26	0.27	0.01	0.05	0.05	—	738	738	0.05	0.04	0.08	751
Total	16.2	10.9	89.0	0.17	0.14	6.26	6.39	0.13	1.11	1.23	—	17,553	17,553	1.18	0.95	1.87	17,867
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Recreatio Swimming Pool	2.71	1.80	14.5	0.03	0.02	1.06	1.08	0.02	0.19	0.21	—	2,704	2,704	0.17	0.14	4.77	2,756
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.10	0.06	0.52	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	92.9	92.9	0.01	0.01	0.16	94.8
Total	2.81	1.87	15.1	0.03	0.02	1.09	1.12	0.02	0.19	0.22	—	2,797	2,797	0.18	0.15	4.94	2,850

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	33.8	33.8	< 0.005	< 0.005	—	34.0
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	310	310	0.03	< 0.005	—	311

Total	—	—	—	—	—	—	—	—	—	—	—	343	343	0.03	< 0.005	—	345
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	33.8	33.8	< 0.005	< 0.005	—	34.0
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	310	310	0.03	< 0.005	—	311
Total	—	—	—	—	—	—	—	—	—	—	—	343	343	0.03	< 0.005	—	345
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	5.59	5.59	< 0.005	< 0.005	—	5.63
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	51.2	51.2	< 0.005	< 0.005	—	51.5
Total	—	—	—	—	—	—	—	—	—	—	—	56.8	56.8	0.01	< 0.005	—	57.2

4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	33.8	33.8	< 0.005	< 0.005	—	34.0
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	310	310	0.03	< 0.005	—	311
Total	—	—	—	—	—	—	—	—	—	—	—	343	343	0.03	< 0.005	—	345
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	33.8	33.8	< 0.005	< 0.005	—	34.0
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	310	310	0.03	< 0.005	—	311
Total	—	—	—	—	—	—	—	—	—	—	—	343	343	0.03	< 0.005	—	345

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	5.59	5.59	< 0.005	< 0.005	—	5.63
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	51.2	51.2	< 0.005	< 0.005	—	51.5
Total	—	—	—	—	—	—	—	—	—	—	—	56.8	56.8	0.01	< 0.005	—	57.2

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.38	2.38	< 0.005	< 0.005	—	2.39
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	156	156	0.01	< 0.005	—	157

Total	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	159
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.38	2.38	< 0.005	< 0.005	—	2.39
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	156	156	0.01	< 0.005	—	157
Total	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	159
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.40
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.8	25.8	< 0.005	< 0.005	—	25.9
Total	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.2	26.2	< 0.005	< 0.005	—	26.3

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.38	2.38	< 0.005	< 0.005	—	2.39
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	156	156	0.01	< 0.005	—	157
Total	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	159
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.38	2.38	< 0.005	< 0.005	—	2.39
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	156	156	0.01	< 0.005	—	157
Total	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	159

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.40
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.8	25.8	< 0.005	< 0.005	—	25.9
Total	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.2	26.2	< 0.005	< 0.005	—	26.3

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.30	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67

Total	0.73	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63
Total	0.11	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63

4.3.1. Mitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.30	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67
Total	0.73	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63
Total	0.11	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	2.18	6.64	8.83	0.05	< 0.005	—	11.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	16.6	56.0	72.6	0.40	0.04	—	93.7
Total	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	2.18	6.64	8.83	0.05	< 0.005	—	11.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	16.6	56.0	72.6	0.40	0.04	—	93.7
Total	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Recreatio Swimming Pool	—	—	—	—	—	—	—	—	—	—	0.36	1.10	1.46	0.01	< 0.005	—	1.92
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	2.76	9.26	12.0	0.07	0.01	—	15.5
Total	—	—	—	—	—	—	—	—	—	—	3.12	10.4	13.5	0.08	0.01	—	17.4

4.4.1. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	2.18	6.64	8.83	0.05	< 0.005	—	11.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	16.6	56.0	72.6	0.40	0.04	—	93.7
Total	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	2.18	6.64	8.83	0.05	< 0.005	—	11.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	16.6	56.0	72.6	0.40	0.04	—	93.7
Total	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	0.36	1.10	1.46	0.01	< 0.005	—	1.92
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	2.76	9.26	12.0	0.07	0.01	—	15.5
Total	—	—	—	—	—	—	—	—	—	—	3.12	10.4	13.5	0.08	0.01	—	17.4

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	76.8	0.00	76.8	7.68	0.00	—	269
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	9.52	0.00	9.52	0.95	0.00	—	33.3
Total	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	76.8	0.00	76.8	7.68	0.00	—	269
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	9.52	0.00	9.52	0.95	0.00	—	33.3
Total	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	12.7	0.00	12.7	1.27	0.00	—	44.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	1.58	0.00	1.58	0.16	0.00	—	5.52
Total	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	50.0

4.5.1. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	76.8	0.00	76.8	7.68	0.00	—	269
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	9.52	0.00	9.52	0.95	0.00	—	33.3
Total	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	76.8	0.00	76.8	7.68	0.00	—	269
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	9.52	0.00	9.52	0.95	0.00	—	33.3
Total	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	12.7	0.00	12.7	1.27	0.00	—	44.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	1.58	0.00	1.58	0.16	0.00	—	5.52
Total	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	50.0

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.12	0.12
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.12	0.12
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03

4.6.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.12	0.12
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.12	0.12

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.7.2. Mitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

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

4.8.2. Mitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

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

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

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

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

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

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	11/1/2023	11/22/2023	5.00	16.0	—
Grading	Grading	11/23/2023	1/4/2024	5.00	31.0	—
Building Construction	Building Construction	1/5/2024	5/16/2025	5.00	356	—
Paving	Paving	5/19/2025	6/30/2025	5.00	31.0	—
Architectural Coating	Architectural Coating	5/16/2025	6/27/2025	5.00	31.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74

Building Construction	Tractors/Loaders/Backh	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40

Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	10.6	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.21	HHDT,MHDT
Site Preparation	Hauling	46.9	33.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	10.6	LDA,LDT1,LDT2
Grading	Vendor	—	7.21	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	16.1	10.6	LDA,LDT1,LDT2
Building Construction	Vendor	7.00	7.21	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	10.6	LDA,LDT1,LDT2
Paving	Vendor	—	7.21	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	3.22	10.6	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.21	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	10.6	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.21	HHDT,MHDT
Site Preparation	Hauling	46.9	33.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	10.6	LDA,LDT1,LDT2
Grading	Vendor	—	7.21	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	16.1	10.6	LDA,LDT1,LDT2
Building Construction	Vendor	7.00	7.21	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	10.6	LDA,LDT1,LDT2
Paving	Vendor	—	7.21	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

Architectural Coating	—	—	—	—
Architectural Coating	Worker	3.22	10.6	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.21	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	27,513	9,171	4,403

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	6,000	24.0	0.00	—
Grading	—	—	31.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.68

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Recreational Swimming Pool	0.00	0%
Parking Lot	0.93	100%
Other Asphalt Surfaces	0.76	100%
General Office Building	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	349	0.03	< 0.005
2024	0.00	349	0.03	< 0.005
2025	0.00	349	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Recreational Swimming Pool	3,663	3,808	3,838	1,353,498	20,706	21,526	21,695	7,652,053
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	185	42.0	13.3	51,131	948	215	68.1	261,906

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year

Recreational Swimming Pool	3,663	3,808	3,838	1,353,498	20,706	21,526	21,695	7,652,053
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	185	42.0	13.3	51,131	948	215	68.1	261,906

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	27,513	9,171	4,403

5.10.3. Landscape Equipment

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

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00

Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Recreational Swimming Pool	0.00	349	0.0330	0.0040	7,425
Parking Lot	35,373	349	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00
General Office Building	324,065	349	0.0330	0.0040	486,999

5.11.2. Mitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Recreational Swimming Pool	0.00	349	0.0330	0.0040	7,425
Parking Lot	35,373	349	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00
General Office Building	324,065	349	0.0330	0.0040	486,999

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Recreational Swimming Pool	1,021,823	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

General Office Building	7,787,500	1,049,446

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Recreational Swimming Pool	1,021,823	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00
General Office Building	7,787,500	1,049,446

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Recreational Swimming Pool	142	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00
General Office Building	17.7	0.00

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Recreational Swimming Pool	142	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00
General Office Building	17.7	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Recreational Swimming Pool	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Recreational Swimming Pool	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Recreational Swimming Pool	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Recreational Swimming Pool	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.15.2. Mitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.95	annual days of extreme heat
Extreme Precipitation	4.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

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

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	24.9
AQ-PM	33.1
AQ-DPM	56.7
Drinking Water	71.6
Lead Risk Housing	44.6
Pesticides	99.0
Toxic Releases	75.5
Traffic	42.8
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	2.11

Haz Waste Facilities/Generators	1.80
Impaired Water Bodies	43.8
Solid Waste	0.00
Sensitive Population	—
Asthma	52.4
Cardio-vascular	67.5
Low Birth Weights	36.7
Socioeconomic Factor Indicators	—
Education	93.1
Housing	59.3
Linguistic	86.6
Poverty	72.4
Unemployment	56.2

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	26.26716284
Employed	61.27293725
Median HI	36.21198511
Education	—
Bachelor's or higher	20.73655845
High school enrollment	3.490311818
Preschool enrollment	21.73745669
Transportation	—
Auto Access	58.83485179

Active commuting	19.196715
Social	—
2-parent households	42.33286283
Voting	42.858976
Neighborhood	—
Alcohol availability	66.36725266
Park access	52.04670858
Retail density	68.61285769
Supermarket access	64.7760811
Tree canopy	11.04837675
Housing	—
Homeownership	64.71192095
Housing habitability	64.32696009
Low-inc homeowner severe housing cost burden	60.82381625
Low-inc renter severe housing cost burden	87.77107661
Uncrowded housing	12.81919672
Health Outcomes	—
Insured adults	26.25433081
Arthritis	63.4
Asthma ER Admissions	69.4
High Blood Pressure	35.9
Cancer (excluding skin)	66.1
Asthma	43.1
Coronary Heart Disease	51.0
Chronic Obstructive Pulmonary Disease	47.8
Diagnosed Diabetes	35.6
Life Expectancy at Birth	96.8

Cognitively Disabled	15.9
Physically Disabled	39.7
Heart Attack ER Admissions	71.8
Mental Health Not Good	36.5
Chronic Kidney Disease	35.4
Obesity	41.1
Pedestrian Injuries	81.5
Physical Health Not Good	35.8
Stroke	45.2
Health Risk Behaviors	—
Binge Drinking	52.5
Current Smoker	43.7
No Leisure Time for Physical Activity	25.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	37.8
Elderly	76.6
English Speaking	13.0
Foreign-born	89.7
Outdoor Workers	8.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	33.6
Traffic Density	36.1
Traffic Access	23.0
Other Indices	—
Hardship	72.8

Other Decision Support	—
2016 Voting	39.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	63.0
Healthy Places Index Score for Project Location (b)	28.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Based on information provided by the applicant
Construction: Construction Phases	Adjusted construction schedule to be consistent with the start and end date provided by the applicant
Construction: Trips and VMT	Longest haul route for the proposed project. Project site to Simi Valley Landfill
Operations: Energy Use	Data provided by the applicant
Operations: Water and Waste Water	Based on information provided by the applicant

Operations: Vehicle Data	Based on traffic report provided by Fehr & Peers

South Oxnard Aquatic Center Pipeline_unmitigated Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	South Oxnard Aquatic Center Pipeline_unmitigated
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.20
Precipitation (days)	16.0
Location	34.1692184671285, -119.15481779122507
County	Ventura
City	Oxnard
Air District	Ventura County APCD
Air Basin	South Central Coast
TAZ	3423
EDFZ	8
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Road Construction	0.27	Mile	0.17	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.77	33.9	32.9	0.06	1.56	3.58	5.15	1.44	0.44	1.88	—	6,926	6,926	0.28	0.07	0.05	6,955
Mit.	3.77	33.9	32.9	0.06	1.56	1.64	3.21	1.44	0.23	1.67	—	6,926	6,926	0.28	0.07	0.05	6,955
% Reduced	—	—	—	—	—	54%	38%	—	48%	11%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.13	1.21	1.19	< 0.005	0.05	0.12	0.18	0.05	0.02	0.06	—	250	250	0.01	< 0.005	0.03	251
Mit.	0.13	1.21	1.19	< 0.005	0.05	0.06	0.11	0.05	0.01	0.06	—	250	250	0.01	< 0.005	0.03	251
% Reduced	—	—	—	—	—	53%	37%	—	47%	11%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.02	0.22	0.22	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	—	41.4	41.4	< 0.005	< 0.005	0.01	41.6

Mit.	0.02	0.22	0.22	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	41.4	41.4	< 0.005	< 0.005	0.01	41.6
% Reduced	—	—	—	—	—	53%	37%	—	47%	11%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	3.77	33.9	32.9	0.06	1.56	3.58	5.15	1.44	0.44	1.88	—	6,926	6,926	0.28	0.07	0.05	6,955
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.13	1.21	1.19	< 0.005	0.05	0.12	0.18	0.05	0.02	0.06	—	250	250	0.01	< 0.005	0.03	251
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.02	0.22	0.22	< 0.005	0.01	0.02	0.03	0.01	< 0.005	0.01	—	41.4	41.4	< 0.005	< 0.005	0.01	41.6

2.3. Construction Emissions by Year, Mitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	3.77	33.9	32.9	0.06	1.56	1.64	3.21	1.44	0.23	1.67	—	6,926	6,926	0.28	0.07	0.05	6,955

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.13	1.21	1.19	< 0.005	0.05	0.06	0.11	0.05	0.01	0.06	—	250	250	0.01	< 0.005	0.03	251
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.02	0.22	0.22	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	41.4	41.4	< 0.005	< 0.005	0.01	41.6

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2023) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	3.95	3.56	< 0.005	0.28	—	0.28	0.25	—	0.25	—	491	491	0.02	< 0.005	—	492
Dust From Material Movement	—	—	—	—	—	0.53	0.53	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.69	2.69	< 0.005	< 0.005	—	2.70

Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.45	0.45	< 0.005	< 0.005	—	0.45
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	66.5	66.5	< 0.005	< 0.005	0.01	67.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Linear, Grubbing & Land Clearing (2023) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	3.95	3.56	< 0.005	0.28	—	0.28	0.25	—	0.25	—	491	491	0.02	< 0.005	—	492
Dust From Material Movement	—	—	—	—	—	0.21	0.21	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.69	2.69	< 0.005	< 0.005	—	2.70
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.45	0.45	< 0.005	< 0.005	—	0.45

Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	66.5	66.5	< 0.005	< 0.005	0.01	67.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Linear, Grading & Excavation (2023) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62	33.7	30.9	0.06	1.56	—	1.56	1.44	—	1.44	—	6,495	6,495	0.26	0.05	—	6,518
Dust From Material Movement	—	—	—	—	—	3.18	3.18	—	0.34	0.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.65	0.59	< 0.005	0.03	—	0.03	0.03	—	0.03	—	125	125	0.01	< 0.005	—	125
Dust From Material Movement	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.19	1.97	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	399	399	0.02	0.01	0.05	404
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.7	31.7	< 0.005	< 0.005	< 0.005	33.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.70	7.70	< 0.005	< 0.005	0.02	7.81
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.28	1.28	< 0.005	< 0.005	< 0.005	1.29
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.11
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Linear, Grading & Excavation (2023) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62	33.7	30.9	0.06	1.56	—	1.56	1.44	—	1.44	—	6,495	6,495	0.26	0.05	—	6,518

Dust From Material Movement	—	—	—	—	—	1.24	1.24	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.65	0.59	< 0.005	0.03	—	0.03	0.03	—	0.03	—	125	125	0.01	< 0.005	—	125
Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.19	1.97	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	399	399	0.02	0.01	0.05	404
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.7	31.7	< 0.005	< 0.005	< 0.005	33.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.70	7.70	< 0.005	< 0.005	0.02	7.81
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.28	1.28	< 0.005	< 0.005	< 0.005	1.29
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.11
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Linear, Drainage, Utilities, & Sub-Grade (2023) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.85	28.2	25.0	0.05	1.16	—	1.16	1.06	—	1.06	—	5,693	5,693	0.23	0.05	—	5,712
Dust From Material Movement	—	—	—	—	—	2.65	2.65	—	0.29	0.29	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.46	0.41	< 0.005	0.02	—	0.02	0.02	—	0.02	—	93.6	93.6	< 0.005	< 0.005	—	93.9

Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.5	15.5	< 0.005	< 0.005	—	15.5
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.16	1.64	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	332	332	0.02	0.01	0.04	336
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.50	5.50	< 0.005	< 0.005	0.01	5.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Linear, Drainage, Utilities, & Sub-Grade (2023) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.85	28.2	25.0	0.05	1.16	—	1.16	1.06	—	1.06	—	5,693	5,693	0.23	0.05	—	5,712
Dust From Material Movement	—	—	—	—	—	1.03	1.03	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.46	0.41	< 0.005	0.02	—	0.02	0.02	—	0.02	—	93.6	93.6	< 0.005	< 0.005	—	93.9
Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.5	15.5	< 0.005	< 0.005	—	15.5

Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.16	1.64	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	332	332	0.02	0.01	0.04	336
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.50	5.50	< 0.005	< 0.005	0.01	5.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Linear, Paving (2023) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	8.46	10.9	0.01	0.43	—	0.43	0.39	—	0.39	—	1,620	1,620	0.07	0.01	—	1,625
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.3	13.3	< 0.005	< 0.005	—	13.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.20	2.20	< 0.005	< 0.005	—	2.21
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.11	1.15	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	233	233	0.01	0.01	0.03	236
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.93	1.93	< 0.005	< 0.005	< 0.005	1.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.32	0.32	< 0.005	< 0.005	< 0.005	0.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Linear, Paving (2023) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	8.46	10.9	0.01	0.43	—	0.43	0.39	—	0.39	—	1,620	1,620	0.07	0.01	—	1,625
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.3	13.3	< 0.005	< 0.005	—	13.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.20	2.20	< 0.005	< 0.005	—	2.21

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.11	1.15	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	233	233	0.01	0.01	0.03	236
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.93	1.93	< 0.005	< 0.005	< 0.005	1.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.32	0.32	< 0.005	< 0.005	< 0.005	0.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

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

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

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

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

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

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Linear, Grubbing & Land Clearing	Linear, Grubbing & Land Clearing	11/1/2023	11/3/2023	5.00	2.00	—
Linear, Grading & Excavation	Linear, Grading & Excavation	11/4/2023	11/13/2023	5.00	7.00	—
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	11/14/2023	11/22/2023	5.00	6.00	—
Linear, Paving	Linear, Paving	11/23/2023	11/27/2023	5.00	3.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Grading & Excavation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Linear, Grading & Excavation	Excavators	Diesel	Average	3.00	8.00	36.0	0.38

Linear, Grading & Excavation	Graders	Diesel	Average	1.00	8.00	148	0.41
Linear, Grading & Excavation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Grading & Excavation	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Linear, Grading & Excavation	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Linear, Grading & Excavation	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Graders	Diesel	Average	1.00	8.00	148	0.41
Linear, Drainage, Utilities, & Sub-Grade	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Linear, Drainage, Utilities, & Sub-Grade	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Rough Terrain Forklifts	Diesel	Average	1.00	8.00	96.0	0.40
Linear, Drainage, Utilities, & Sub-Grade	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Linear, Drainage, Utilities, & Sub-Grade	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Linear, Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Linear, Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Linear, Paving	Rollers	Diesel	Average	3.00	8.00	36.0	0.38

Linear, Paving	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Grading & Excavation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Linear, Grading & Excavation	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Linear, Grading & Excavation	Graders	Diesel	Average	1.00	8.00	148	0.41
Linear, Grading & Excavation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Grading & Excavation	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Linear, Grading & Excavation	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Linear, Grading & Excavation	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74

Linear, Drainage, Utilities, & Sub-Grade	Graders	Diesel	Average	1.00	8.00	148	0.41
Linear, Drainage, Utilities, & Sub-Grade	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Linear, Drainage, Utilities, & Sub-Grade	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Rough Terrain Forklifts	Diesel	Average	1.00	8.00	96.0	0.40
Linear, Drainage, Utilities, & Sub-Grade	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Linear, Drainage, Utilities, & Sub-Grade	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Linear, Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Linear, Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Linear, Paving	Rollers	Diesel	Average	3.00	8.00	36.0	0.38
Linear, Paving	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	—	—	—	—
Linear, Grubbing & Land Clearing	Worker	5.00	18.5	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	0.00	10.2	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	0.00	20.0	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	—	—	HHDT

Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	30.0	18.5	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	1.00	10.2	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.00	20.0	HHDT
Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	25.0	18.5	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	10.2	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	0.00	20.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00	10.2	HHDT,MHDT
Linear, Paving	Hauling	0.00	20.0	HHDT
Linear, Paving	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	—	—	—	—
Linear, Grubbing & Land Clearing	Worker	5.00	18.5	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	0.00	10.2	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	0.00	20.0	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	—	—	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	30.0	18.5	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	1.00	10.2	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.00	20.0	HHDT

Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	25.0	18.5	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	10.2	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	0.00	20.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00	10.2	HHDT,MHDT
Linear, Paving	Hauling	0.00	20.0	HHDT
Linear, Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Linear, Grubbing & Land Clearing	—	—	0.17	0.00	—
Linear, Grading & Excavation	—	—	0.17	0.00	—

Linear, Drainage, Utilities, & Sub-Grade	—	—	0.17	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Road Construction	0.17	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.95	annual days of extreme heat
Extreme Precipitation	4.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

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

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	24.9
AQ-PM	33.1
AQ-DPM	56.7
Drinking Water	71.6
Lead Risk Housing	44.6
Pesticides	99.0
Toxic Releases	75.5
Traffic	42.8
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	2.11
Haz Waste Facilities/Generators	1.80

Impaired Water Bodies	43.8
Solid Waste	0.00
Sensitive Population	—
Asthma	52.4
Cardio-vascular	67.5
Low Birth Weights	36.7
Socioeconomic Factor Indicators	—
Education	93.1
Housing	59.3
Linguistic	86.6
Poverty	72.4
Unemployment	56.2

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	26.26716284
Employed	61.27293725
Median HI	36.21198511
Education	—
Bachelor's or higher	20.73655845
High school enrollment	3.490311818
Preschool enrollment	21.73745669
Transportation	—
Auto Access	58.83485179
Active commuting	19.196715

Social	—
2-parent households	42.33286283
Voting	42.858976
Neighborhood	—
Alcohol availability	66.36725266
Park access	52.04670858
Retail density	68.61285769
Supermarket access	64.7760811
Tree canopy	11.04837675
Housing	—
Homeownership	64.71192095
Housing habitability	64.32696009
Low-inc homeowner severe housing cost burden	60.82381625
Low-inc renter severe housing cost burden	87.77107661
Uncrowded housing	12.81919672
Health Outcomes	—
Insured adults	26.25433081
Arthritis	63.4
Asthma ER Admissions	69.4
High Blood Pressure	35.9
Cancer (excluding skin)	66.1
Asthma	43.1
Coronary Heart Disease	51.0
Chronic Obstructive Pulmonary Disease	47.8
Diagnosed Diabetes	35.6
Life Expectancy at Birth	96.8
Cognitively Disabled	15.9

Physically Disabled	39.7
Heart Attack ER Admissions	71.8
Mental Health Not Good	36.5
Chronic Kidney Disease	35.4
Obesity	41.1
Pedestrian Injuries	81.5
Physical Health Not Good	35.8
Stroke	45.2
Health Risk Behaviors	—
Binge Drinking	52.5
Current Smoker	43.7
No Leisure Time for Physical Activity	25.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	37.8
Elderly	76.6
English Speaking	13.0
Foreign-born	89.7
Outdoor Workers	8.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	33.6
Traffic Density	36.1
Traffic Access	23.0
Other Indices	—
Hardship	72.8
Other Decision Support	—

2016 Voting	39.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	63.0
Healthy Places Index Score for Project Location (b)	28.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Trips and VMT	adjusted caleemod defaults for vendor trips

South Oxnard Aquatics Center_Mitigated Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	South Oxnard Aquatics Center_Mitigated
Lead Agency	City of Oxnard
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.20
Precipitation (days)	16.0
Location	34.16865970541075, -119.15472977476742
County	Ventura
City	Oxnard
Air District	Ventura County APCD
Air Basin	South Central Coast
TAZ	3423
EDFZ	8
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Recreational Swimming Pool	25.0	1000sqft	0.57	24,393	0.00	—	—	—
Parking Lot	103	Space	0.93	0.00	0.00	—	—	—

Other Asphalt Surfaces	33.0	1000sqft	0.76	0.00	0.00	—	—	—
General Office Building	19.0	1000sqft	5.69	18,342	81,179	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.75	11.7	15.5	0.03	0.50	0.31	0.78	0.46	0.08	0.53	—	3,006	3,006	0.12	0.06	1.65	3,029
Mit.	3.84	3.83	17.1	0.03	0.08	0.31	0.39	0.08	0.08	0.15	—	3,006	3,006	0.12	0.06	1.65	3,029
% Reduced	19%	67%	-10%	—	84%	—	49%	83%	—	71%	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.13	47.4	38.1	0.08	1.87	21.3	23.2	1.73	10.6	12.3	—	11,038	11,038	0.34	0.92	0.35	11,320
Mit.	0.68	10.3	30.9	0.08	0.17	9.31	9.47	0.17	4.39	4.56	—	11,038	11,038	0.34	0.92	0.35	11,320
% Reduced	84%	78%	19%	—	91%	56%	59%	90%	58%	63%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.92	8.37	10.2	0.02	0.36	1.49	1.64	0.33	0.73	0.87	—	2,029	2,029	0.08	0.04	0.48	2,044
Mit.	0.43	2.30	11.4	0.02	0.06	0.63	0.64	0.05	0.30	0.31	—	2,029	2,029	0.08	0.04	0.48	2,044
% Reduced	53%	73%	-12%	—	84%	57%	61%	84%	59%	64%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.17	1.53	1.86	< 0.005	0.07	0.27	0.30	0.06	0.13	0.16	—	336	336	0.01	0.01	0.08	338
Mit.	0.08	0.42	2.08	< 0.005	0.01	0.12	0.12	0.01	0.05	0.06	—	336	336	0.01	0.01	0.08	338
% Reduced	53%	73%	-12%	—	84%	57%	61%	84%	59%	64%	—	—	—	—	—	—	—
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	No	Yes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mit.	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mit.	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.29	11.6	14.3	0.02	0.50	0.27	0.77	0.46	0.07	0.53	—	2,837	2,837	0.11	0.06	1.56	2,859
2025	4.75	11.7	15.5	0.03	0.46	0.31	0.78	0.43	0.08	0.50	—	3,006	3,006	0.12	0.06	1.65	3,029
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	4.13	47.4	38.1	0.08	1.87	21.3	23.2	1.73	10.6	12.3	—	11,038	11,038	0.34	0.92	0.35	11,320
2024	1.96	18.3	19.7	0.03	0.84	7.28	8.12	0.77	3.47	4.24	—	3,154	3,154	0.13	0.06	0.04	3,167
2025	1.20	10.8	14.0	0.02	0.43	0.27	0.71	0.40	0.07	0.47	—	2,820	2,820	0.11	0.06	0.04	2,840
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.34	3.61	3.25	0.01	0.15	1.49	1.64	0.14	0.73	0.87	—	725	725	0.02	0.04	0.28	739
2024	0.92	8.37	10.2	0.02	0.36	0.25	0.61	0.33	0.07	0.41	—	2,029	2,029	0.08	0.04	0.48	2,044
2025	0.71	3.59	4.77	0.01	0.15	0.09	0.24	0.14	0.02	0.16	—	910	910	0.04	0.02	0.21	917
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.06	0.66	0.59	< 0.005	0.03	0.27	0.30	0.03	0.13	0.16	—	120	120	< 0.005	0.01	0.05	122
2024	0.17	1.53	1.86	< 0.005	0.07	0.05	0.11	0.06	0.01	0.07	—	336	336	0.01	0.01	0.08	338
2025	0.13	0.66	0.87	< 0.005	0.03	0.02	0.04	0.02	< 0.005	0.03	—	151	151	0.01	< 0.005	0.03	152

2.3. Construction Emissions by Year, Mitigated

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

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

Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.41	3.19	16.0	0.02	0.08	0.27	0.35	0.08	0.07	0.14	—	2,837	2,837	0.11	0.06	1.56	2,859
2025	3.84	3.83	17.1	0.03	0.08	0.31	0.39	0.08	0.08	0.15	—	3,006	3,006	0.12	0.06	1.65	3,029
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.68	10.3	30.9	0.08	0.17	9.31	9.47	0.17	4.39	4.56	—	11,038	11,038	0.34	0.92	0.35	11,320
2024	0.41	3.22	18.7	0.03	0.08	2.96	3.01	0.08	1.38	1.44	—	3,154	3,154	0.13	0.06	0.04	3,167
2025	0.40	3.19	15.8	0.02	0.08	0.27	0.35	0.08	0.07	0.14	—	2,820	2,820	0.11	0.06	0.04	2,840
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.06	0.61	2.79	0.01	0.01	0.63	0.64	0.01	0.30	0.31	—	725	725	0.02	0.04	0.28	739
2024	0.29	2.30	11.4	0.02	0.06	0.21	0.27	0.05	0.06	0.11	—	2,029	2,029	0.08	0.04	0.48	2,044
2025	0.43	1.08	5.28	0.01	0.02	0.09	0.11	0.02	0.02	0.04	—	910	910	0.04	0.02	0.21	917
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.01	0.11	0.51	< 0.005	< 0.005	0.12	0.12	< 0.005	0.05	0.06	—	120	120	< 0.005	0.01	0.05	122
2024	0.05	0.42	2.08	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	336	336	0.01	0.01	0.08	338
2025	0.08	0.20	0.96	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	151	151	0.01	< 0.005	0.03	152

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	17.2	9.90	87.9	0.18	0.15	6.25	6.40	0.14	1.11	1.25	105	18,713	18,818	10.2	0.92	72.2	19,420

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	16.6	11.1	88.9	0.17	0.15	6.25	6.40	0.14	1.11	1.24	105	18,103	18,208	10.3	0.99	2.03	18,763
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	16.0	10.4	83.7	0.17	0.14	6.01	6.16	0.14	1.06	1.20	105	17,521	17,626	10.2	0.94	30.1	18,190
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.92	1.90	15.3	0.03	0.03	1.10	1.12	0.02	0.19	0.22	17.4	2,901	2,918	1.69	0.15	4.98	3,012
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	25.0	25.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	No	No	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.5	9.75	85.9	0.18	0.14	6.25	6.39	0.13	1.11	1.23	—	18,141	18,141	1.04	0.88	72.1	18,500
Area	0.73	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504

Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Total	17.2	9.90	87.9	0.18	0.15	6.25	6.40	0.14	1.11	1.25	105	18,713	18,818	10.2	0.92	72.2	19,420
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.1	10.9	88.8	0.17	0.14	6.25	6.39	0.13	1.11	1.23	—	17,539	17,539	1.17	0.94	1.87	17,852
Area	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504
Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Total	16.6	11.1	88.9	0.17	0.15	6.25	6.40	0.14	1.11	1.24	105	18,103	18,208	10.3	0.99	2.03	18,763
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	15.4	10.3	82.7	0.17	0.13	6.01	6.14	0.12	1.06	1.19	—	16,953	16,953	1.08	0.89	29.9	17,275
Area	0.58	0.01	0.92	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.77	3.77	< 0.005	< 0.005	—	3.78
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504
Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Total	16.0	10.4	83.7	0.17	0.14	6.01	6.16	0.14	1.06	1.20	105	17,521	17,626	10.2	0.94	30.1	18,190
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.81	1.87	15.1	0.03	0.02	1.10	1.12	0.02	0.19	0.22	—	2,807	2,807	0.18	0.15	4.95	2,860
Area	0.11	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63
Energy	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	83.1	83.1	0.01	< 0.005	—	83.5
Water	—	—	—	—	—	—	—	—	—	—	3.12	10.4	13.5	0.08	0.01	—	17.4
Waste	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	50.0

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	2.92	1.90	15.3	0.03	0.03	1.10	1.12	0.02	0.19	0.22	17.4	2,901	2,918	1.69	0.15	4.98	3,012

2.6. Operations Emissions by Sector, Mitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.5	9.75	85.9	0.18	0.14	6.25	6.39	0.13	1.11	1.23	—	18,141	18,141	1.04	0.88	72.1	18,500
Area	0.73	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504
Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Total	17.2	9.90	87.9	0.18	0.15	6.25	6.40	0.14	1.11	1.25	105	18,713	18,818	10.2	0.92	72.2	19,420
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	16.1	10.9	88.8	0.17	0.14	6.25	6.39	0.13	1.11	1.23	—	17,539	17,539	1.17	0.94	1.87	17,852
Area	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504
Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Total	16.6	11.1	88.9	0.17	0.15	6.25	6.40	0.14	1.11	1.24	105	18,103	18,208	10.3	0.99	2.03	18,763
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	15.4	10.3	82.7	0.17	0.13	6.01	6.14	0.12	1.06	1.19	—	16,953	16,953	1.08	0.89	29.9	17,275

Area	0.58	0.01	0.92	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.77	3.77	< 0.005	< 0.005	—	3.78
Energy	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	502	502	0.05	< 0.005	—	504
Water	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Waste	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Total	16.0	10.4	83.7	0.17	0.14	6.01	6.16	0.14	1.06	1.20	105	17,521	17,626	10.2	0.94	30.1	18,190
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	2.81	1.87	15.1	0.03	0.02	1.10	1.12	0.02	0.19	0.22	—	2,807	2,807	0.18	0.15	4.95	2,860
Area	0.11	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63
Energy	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	83.1	83.1	0.01	< 0.005	—	83.5
Water	—	—	—	—	—	—	—	—	—	—	3.12	10.4	13.5	0.08	0.01	—	17.4
Waste	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	50.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03
Total	2.92	1.90	15.3	0.03	0.03	1.10	1.12	0.02	0.19	0.22	17.4	2,901	2,918	1.69	0.15	4.98	3,012

3. Construction Emissions Details

3.1. Site Preparation (2023) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.95	39.7	35.5	0.05	1.81	—	1.81	1.66	—	1.66	—	5,295	5,295	0.21	0.04	—	5,314

Dust From Material Movement	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	1.74	1.55	< 0.005	0.08	—	0.08	0.07	—	0.07	—	232	232	0.01	< 0.005	—	233
Dust From Material Movement	—	—	—	—	—	0.86	0.86	—	0.44	0.44	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.32	0.28	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.4	38.4	< 0.005	< 0.005	—	38.6
Dust From Material Movement	—	—	—	—	—	0.16	0.16	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.11	1.15	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	233	233	0.01	0.01	0.03	236
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	7.57	1.45	0.04	0.07	1.40	1.47	0.07	0.39	0.46	—	5,510	5,510	0.12	0.86	0.32	5,771

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.3	10.3	< 0.005	< 0.005	0.02	10.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.33	0.06	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	242	242	0.01	0.04	0.23	253
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.70	1.70	< 0.005	< 0.005	< 0.005	1.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	40.0	40.0	< 0.005	0.01	0.04	41.9

3.2. Site Preparation (2023) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	2.59	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	7.68	7.68	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.11	1.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	232	232	0.01	< 0.005	—	233

Dust From Material Movement	—	—	—	—	—	0.34	0.34	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.4	38.4	< 0.005	< 0.005	—	38.6
Dust From Material Movement	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.11	1.15	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	233	233	0.01	0.01	0.03	236
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	7.57	1.45	0.04	0.07	1.40	1.47	0.07	0.39	0.46	—	5,510	5,510	0.12	0.86	0.32	5,771
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.3	10.3	< 0.005	< 0.005	0.02	10.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.33	0.06	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	242	242	0.01	0.04	0.23	253
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.70	1.70	< 0.005	< 0.005	< 0.005	1.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	40.0	40.0	< 0.005	0.01	0.04	41.9

3.3. Grading (2023) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.04	20.0	19.7	0.03	0.94	—	0.94	0.87	—	0.87	—	2,958	2,958	0.12	0.02	—	2,968
Dust From Material Movement	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.53	1.50	< 0.005	0.07	—	0.07	0.07	—	0.07	—	226	226	0.01	< 0.005	—	227
Dust From Material Movement	—	—	—	—	—	0.54	0.54	—	0.26	0.26	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.28	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.4	37.4	< 0.005	< 0.005	—	37.5

Dust From Material Movement	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.09	0.98	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	199	199	0.01	0.01	0.02	202
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.3	15.3	< 0.005	< 0.005	0.03	15.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.54	2.54	< 0.005	< 0.005	0.01	2.57
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Grading (2023) - Mitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.04	17.8	0.03	0.06	—	0.06	0.06	—	0.06	—	2,958	2,958	0.12	0.02	—	2,968
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.16	1.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	226	226	0.01	< 0.005	—	227
Dust From Material Movement	—	—	—	—	—	0.21	0.21	—	0.10	0.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	37.4	37.4	< 0.005	< 0.005	—	37.5
Dust From Material Movement	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.09	0.98	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	199	199	0.01	0.01	0.02	202
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	15.3	15.3	< 0.005	< 0.005	0.03	15.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.54	2.54	< 0.005	< 0.005	0.01	2.57
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2024) - Unmitigated

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

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

Dust From Material Movement	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.14	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.2	23.2	< 0.005	< 0.005	—	23.2
Dust From Material Movement	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.83	3.83	< 0.005	< 0.005	—	3.85
Dust From Material Movement	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.09	0.92	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	196	196	0.01	0.01	0.02	198
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.54	1.54	< 0.005	< 0.005	< 0.005	1.56
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Grading (2024) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.04	17.8	0.03	0.06	—	0.06	0.06	—	0.06	—	2,958	2,958	0.12	0.02	—	2,969
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.2	23.2	< 0.005	< 0.005	—	23.2

Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.83	3.83	< 0.005	< 0.005	—	3.85
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.09	0.92	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	196	196	0.01	0.01	0.02	198
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.54	1.54	< 0.005	< 0.005	< 0.005	1.56
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	7.95	9.29	0.02	0.35	—	0.35	0.32	—	0.32	—	1,699	1,699	0.07	0.01	—	1,704
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.45	1.70	< 0.005	0.06	—	0.06	0.06	—	0.06	—	281	281	0.01	< 0.005	—	282
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	1.09	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	220	220	0.01	0.01	0.95	223
Vendor	0.01	0.28	0.09	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	< 0.005	0.03	0.61	230
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.09	0.98	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	210	210	0.01	0.01	0.02	213
Vendor	0.01	0.29	0.09	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	< 0.005	0.03	0.02	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.07	0.70	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	150	150	0.01	0.01	0.29	152
Vendor	< 0.005	0.21	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	155	155	< 0.005	0.02	0.19	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.8	24.8	< 0.005	< 0.005	0.05	25.2
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.7	25.7	< 0.005	< 0.005	0.03	26.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2024) - Mitigated

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

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

Off-Road Equipment	0.33	2.83	14.8	0.02	0.08	—	0.08	0.07	—	0.07	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	2.83	14.8	0.02	0.08	—	0.08	0.07	—	0.07	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.00	10.5	0.02	0.05	—	0.05	0.05	—	0.05	—	1,699	1,699	0.07	0.01	—	1,704
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.37	1.92	< 0.005	0.01	—	0.01	0.01	—	0.01	—	281	281	0.01	< 0.005	—	282
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	1.09	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	220	220	0.01	0.01	0.95	223
Vendor	0.01	0.28	0.09	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	< 0.005	0.03	0.61	230
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.09	0.98	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	210	210	0.01	0.01	0.02	213

Vendor	0.01	0.29	0.09	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	219	219	< 0.005	0.03	0.02	229
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.07	0.70	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	150	150	0.01	0.01	0.29	152
Vendor	< 0.005	0.21	0.06	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	155	155	< 0.005	0.02	0.19	163
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.8	24.8	< 0.005	< 0.005	0.05	25.2
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.7	25.7	< 0.005	< 0.005	0.03	26.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	2.78	3.47	0.01	0.11	—	0.11	0.11	—	0.11	—	638	638	0.03	0.01	—	640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.51	0.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	106	106	< 0.005	< 0.005	—	106
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	1.01	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	215	215	0.01	0.01	0.87	219
Vendor	0.01	0.27	0.08	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	216	216	< 0.005	0.03	0.61	226
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.09	0.92	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	206	206	0.01	0.01	0.02	209
Vendor	0.01	0.28	0.09	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	216	216	< 0.005	0.03	0.02	226
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.24	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	55.2	55.2	< 0.005	< 0.005	0.10	56.0
Vendor	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.5	57.5	< 0.005	0.01	0.07	60.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.14	9.14	< 0.005	< 0.005	0.02	9.27

Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.51	9.51	< 0.005	< 0.005	0.01	9.96
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Building Construction (2025) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	2.82	14.8	0.02	0.08	—	0.08	0.07	—	0.07	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	2.82	14.8	0.02	0.08	—	0.08	0.07	—	0.07	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.75	3.95	0.01	0.02	—	0.02	0.02	—	0.02	—	638	638	0.03	0.01	—	640
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.14	0.72	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	106	106	< 0.005	< 0.005	—	106
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	1.01	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	215	215	0.01	0.01	0.87	219
Vendor	0.01	0.27	0.08	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	216	216	< 0.005	0.03	0.61	226
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.09	0.92	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	206	206	0.01	0.01	0.02	209
Vendor	0.01	0.28	0.09	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	216	216	< 0.005	0.03	0.02	226
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.24	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	55.2	55.2	< 0.005	< 0.005	0.10	56.0
Vendor	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.5	57.5	< 0.005	0.01	0.07	60.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.14	9.14	< 0.005	< 0.005	0.02	9.27
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.51	9.51	< 0.005	< 0.005	0.01	9.96
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2025) - Unmitigated

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

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

Off-Road Equipment	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.63	0.85	< 0.005	0.03	—	0.03	0.03	—	0.03	—	128	128	0.01	< 0.005	—	129
Paving	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.15	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	21.3	21.3	< 0.005	< 0.005	—	21.3
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.94	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	201	201	0.01	0.01	0.81	204
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.4	16.4	< 0.005	< 0.005	0.03	16.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.71	2.71	< 0.005	< 0.005	< 0.005	2.75
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Paving (2025) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.93	10.6	0.01	0.03	—	0.03	0.03	—	0.03	—	1,511	1,511	0.06	0.01	—	1,517
Paving	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.16	0.90	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	128	128	0.01	< 0.005	—	129
Paving	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.3	21.3	< 0.005	< 0.005	—	21.3
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.07	0.94	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	201	201	0.01	0.01	0.81	204
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.4	16.4	< 0.005	< 0.005	0.03	16.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.71	2.71	< 0.005	< 0.005	< 0.005	2.75
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2025) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	3.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.4
Architectural Coatings	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.88	1.88	< 0.005	< 0.005	—	1.88
Architectural Coatings	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.1	43.1	< 0.005	< 0.005	0.17	43.8

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.52	3.52	< 0.005	< 0.005	0.01	3.57
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.58	0.58	< 0.005	< 0.005	< 0.005	0.59
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Architectural Coating (2025) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	3.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.05	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.3	11.3	< 0.005	< 0.005	—	11.4
Architectural Coatings	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.88	1.88	< 0.005	< 0.005	—	1.88
Architectural Coatings	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.20	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.1	43.1	< 0.005	< 0.005	0.17	43.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.52	3.52	< 0.005	< 0.005	0.01	3.57

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.58	0.58	< 0.005	< 0.005	< 0.005	0.59
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	15.7	9.30	81.9	0.17	0.13	5.96	6.09	0.12	1.05	1.18	—	17,302	17,302	1.00	0.84	68.7	17,645
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.76	0.45	3.97	0.01	0.01	0.29	0.30	0.01	0.05	0.06	—	839	839	0.05	0.04	3.33	855
Total	16.5	9.75	85.9	0.18	0.14	6.25	6.39	0.13	1.11	1.23	—	18,141	18,141	1.04	0.88	72.1	18,500

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	15.4	10.4	84.7	0.16	0.13	5.96	6.09	0.12	1.05	1.18	—	16,728	16,728	1.12	0.90	1.78	17,026
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.75	0.50	4.11	0.01	0.01	0.29	0.30	0.01	0.05	0.06	—	811	811	0.05	0.04	0.09	825
Total	16.1	10.9	88.8	0.17	0.14	6.25	6.39	0.13	1.11	1.23	—	17,539	17,539	1.17	0.94	1.87	17,852
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	2.71	1.80	14.5	0.03	0.02	1.06	1.08	0.02	0.19	0.21	—	2,705	2,705	0.17	0.14	4.77	2,756
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.10	0.07	0.55	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	102	102	0.01	0.01	0.18	104
Total	2.81	1.87	15.1	0.03	0.02	1.10	1.12	0.02	0.19	0.22	—	2,807	2,807	0.18	0.15	4.95	2,860

4.1.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	15.7	9.30	81.9	0.17	0.13	5.96	6.09	0.12	1.05	1.18	—	17,302	17,302	1.00	0.84	68.7	17,645
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.76	0.45	3.97	0.01	0.01	0.29	0.30	0.01	0.05	0.06	—	839	839	0.05	0.04	3.33	855
Total	16.5	9.75	85.9	0.18	0.14	6.25	6.39	0.13	1.11	1.23	—	18,141	18,141	1.04	0.88	72.1	18,500
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	15.4	10.4	84.7	0.16	0.13	5.96	6.09	0.12	1.05	1.18	—	16,728	16,728	1.12	0.90	1.78	17,026
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.75	0.50	4.11	0.01	0.01	0.29	0.30	0.01	0.05	0.06	—	811	811	0.05	0.04	0.09	825
Total	16.1	10.9	88.8	0.17	0.14	6.25	6.39	0.13	1.11	1.23	—	17,539	17,539	1.17	0.94	1.87	17,852
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Recreatio Swimming Pool	2.71	1.80	14.5	0.03	0.02	1.06	1.08	0.02	0.19	0.21	—	2,705	2,705	0.17	0.14	4.77	2,756
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.10	0.07	0.55	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	102	102	0.01	0.01	0.18	104
Total	2.81	1.87	15.1	0.03	0.02	1.10	1.12	0.02	0.19	0.22	—	2,807	2,807	0.18	0.15	4.95	2,860

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	33.8	33.8	< 0.005	< 0.005	—	34.0
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	310	310	0.03	< 0.005	—	311

Total	—	—	—	—	—	—	—	—	—	—	—	343	343	0.03	< 0.005	—	345
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	33.8	33.8	< 0.005	< 0.005	—	34.0
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	310	310	0.03	< 0.005	—	311
Total	—	—	—	—	—	—	—	—	—	—	—	343	343	0.03	< 0.005	—	345
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	5.59	5.59	< 0.005	< 0.005	—	5.63
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	51.2	51.2	< 0.005	< 0.005	—	51.5
Total	—	—	—	—	—	—	—	—	—	—	—	56.8	56.8	0.01	< 0.005	—	57.2

4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	33.8	33.8	< 0.005	< 0.005	—	34.0
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	310	310	0.03	< 0.005	—	311
Total	—	—	—	—	—	—	—	—	—	—	—	343	343	0.03	< 0.005	—	345
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	33.8	33.8	< 0.005	< 0.005	—	34.0
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	310	310	0.03	< 0.005	—	311
Total	—	—	—	—	—	—	—	—	—	—	—	343	343	0.03	< 0.005	—	345

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	5.59	5.59	< 0.005	< 0.005	—	5.63
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	51.2	51.2	< 0.005	< 0.005	—	51.5
Total	—	—	—	—	—	—	—	—	—	—	—	56.8	56.8	0.01	< 0.005	—	57.2

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.38	2.38	< 0.005	< 0.005	—	2.39
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	156	156	0.01	< 0.005	—	157

Total	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	159
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.38	2.38	< 0.005	< 0.005	—	2.39
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	156	156	0.01	< 0.005	—	157
Total	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	159
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.40
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.8	25.8	< 0.005	< 0.005	—	25.9
Total	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.2	26.2	< 0.005	< 0.005	—	26.3

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.38	2.38	< 0.005	< 0.005	—	2.39
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	156	156	0.01	< 0.005	—	157
Total	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	159
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.38	2.38	< 0.005	< 0.005	—	2.39
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	156	156	0.01	< 0.005	—	157
Total	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	159

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.39	0.39	< 0.005	< 0.005	—	0.40
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	25.8	25.8	< 0.005	< 0.005	—	25.9
Total	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.2	26.2	< 0.005	< 0.005	—	26.3

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.30	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67

Total	0.73	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63
Total	0.11	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63

4.3.1. Mitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.30	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67
Total	0.73	0.02	1.86	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.64	7.64	< 0.005	< 0.005	—	7.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63
Total	0.11	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.62	0.62	< 0.005	< 0.005	—	0.63

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	2.18	6.64	8.83	0.05	< 0.005	—	11.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	16.6	56.0	72.6	0.40	0.04	—	93.7
Total	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	2.18	6.64	8.83	0.05	< 0.005	—	11.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	16.6	56.0	72.6	0.40	0.04	—	93.7
Total	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Recreatio Swimming Pool	—	—	—	—	—	—	—	—	—	—	0.36	1.10	1.46	0.01	< 0.005	—	1.92
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	2.76	9.26	12.0	0.07	0.01	—	15.5
Total	—	—	—	—	—	—	—	—	—	—	3.12	10.4	13.5	0.08	0.01	—	17.4

4.4.1. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	2.18	6.64	8.83	0.05	< 0.005	—	11.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	16.6	56.0	72.6	0.40	0.04	—	93.7
Total	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	2.18	6.64	8.83	0.05	< 0.005	—	11.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	16.6	56.0	72.6	0.40	0.04	—	93.7
Total	—	—	—	—	—	—	—	—	—	—	18.8	62.6	81.4	0.46	0.04	—	105
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	0.36	1.10	1.46	0.01	< 0.005	—	1.92
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	2.76	9.26	12.0	0.07	0.01	—	15.5
Total	—	—	—	—	—	—	—	—	—	—	3.12	10.4	13.5	0.08	0.01	—	17.4

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	76.8	0.00	76.8	7.68	0.00	—	269
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	9.52	0.00	9.52	0.95	0.00	—	33.3
Total	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	76.8	0.00	76.8	7.68	0.00	—	269
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	9.52	0.00	9.52	0.95	0.00	—	33.3
Total	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	12.7	0.00	12.7	1.27	0.00	—	44.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	1.58	0.00	1.58	0.16	0.00	—	5.52
Total	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	50.0

4.5.1. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	76.8	0.00	76.8	7.68	0.00	—	269
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	9.52	0.00	9.52	0.95	0.00	—	33.3
Total	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	76.8	0.00	76.8	7.68	0.00	—	269
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	9.52	0.00	9.52	0.95	0.00	—	33.3
Total	—	—	—	—	—	—	—	—	—	—	86.3	0.00	86.3	8.63	0.00	—	302
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	12.7	0.00	12.7	1.27	0.00	—	44.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	1.58	0.00	1.58	0.16	0.00	—	5.52
Total	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	50.0

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.12	0.12
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.12	0.12
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03

4.6.2. Mitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.12	0.12
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.12	0.12

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.16	0.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Recreational Swimming Pool	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.03	0.03

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.7.2. Mitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

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

4.8.2. Mitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

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

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

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

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

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

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	11/1/2023	11/22/2023	5.00	16.0	—
Grading	Grading	11/23/2023	1/4/2024	5.00	31.0	—
Building Construction	Building Construction	1/5/2024	5/16/2025	5.00	356	—
Paving	Paving	5/19/2025	6/30/2025	5.00	31.0	—
Architectural Coating	Architectural Coating	5/16/2025	6/27/2025	5.00	31.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74

Building Construction	Tractors/Loaders/Backh	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Final	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Final	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Final	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.00	6.00	37.0	0.48
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	3.00	8.00	367	0.40

Grading	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	46.9	33.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	16.1	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	7.00	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—

Architectural Coating	Worker	3.22	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	46.9	33.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	16.1	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	7.00	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

Architectural Coating	—	—	—	—
Architectural Coating	Worker	3.22	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	27,513	9,171	4,403

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	6,000	24.0	0.00	—
Grading	—	—	31.0	0.00	—
Paving	0.00	0.00	0.00	0.00	1.68

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Recreational Swimming Pool	0.00	0%
Parking Lot	0.93	100%
Other Asphalt Surfaces	0.76	100%
General Office Building	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	349	0.03	< 0.005
2024	0.00	349	0.03	< 0.005
2025	0.00	349	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Recreational Swimming Pool	3,673	3,780	3,818	1,353,629	20,763	21,370	21,582	7,652,790
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	185	42.0	13.3	51,131	1,046	237	75.2	289,070

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year

Recreational Swimming Pool	3,673	3,780	3,818	1,353,629	20,763	21,370	21,582	7,652,790
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	185	42.0	13.3	51,131	1,046	237	75.2	289,070

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	27,513	9,171	4,403

5.10.3. Landscape Equipment

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

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00

Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Recreational Swimming Pool	0.00	349	0.0330	0.0040	7,425
Parking Lot	35,373	349	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00
General Office Building	324,065	349	0.0330	0.0040	486,999

5.11.2. Mitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Recreational Swimming Pool	0.00	349	0.0330	0.0040	7,425
Parking Lot	35,373	349	0.0330	0.0040	0.00
Other Asphalt Surfaces	0.00	349	0.0330	0.0040	0.00
General Office Building	324,065	349	0.0330	0.0040	486,999

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Recreational Swimming Pool	1,021,823	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

General Office Building	7,787,500	1,049,446

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Recreational Swimming Pool	1,021,823	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00
General Office Building	7,787,500	1,049,446

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Recreational Swimming Pool	142	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00
General Office Building	17.7	0.00

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Recreational Swimming Pool	142	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00
General Office Building	17.7	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Recreational Swimming Pool	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Recreational Swimming Pool	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Recreational Swimming Pool	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Recreational Swimming Pool	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.15.2. Mitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.95	annual days of extreme heat
Extreme Precipitation	4.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

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

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	24.9
AQ-PM	33.1
AQ-DPM	56.7
Drinking Water	71.6
Lead Risk Housing	44.6
Pesticides	99.0
Toxic Releases	75.5
Traffic	42.8
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	2.11

Haz Waste Facilities/Generators	1.80
Impaired Water Bodies	43.8
Solid Waste	0.00
Sensitive Population	—
Asthma	52.4
Cardio-vascular	67.5
Low Birth Weights	36.7
Socioeconomic Factor Indicators	—
Education	93.1
Housing	59.3
Linguistic	86.6
Poverty	72.4
Unemployment	56.2

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	26.26716284
Employed	61.27293725
Median HI	36.21198511
Education	—
Bachelor's or higher	20.73655845
High school enrollment	3.490311818
Preschool enrollment	21.73745669
Transportation	—
Auto Access	58.83485179

Active commuting	19.196715
Social	—
2-parent households	42.33286283
Voting	42.858976
Neighborhood	—
Alcohol availability	66.36725266
Park access	52.04670858
Retail density	68.61285769
Supermarket access	64.7760811
Tree canopy	11.04837675
Housing	—
Homeownership	64.71192095
Housing habitability	64.32696009
Low-inc homeowner severe housing cost burden	60.82381625
Low-inc renter severe housing cost burden	87.77107661
Uncrowded housing	12.81919672
Health Outcomes	—
Insured adults	26.25433081
Arthritis	63.4
Asthma ER Admissions	69.4
High Blood Pressure	35.9
Cancer (excluding skin)	66.1
Asthma	43.1
Coronary Heart Disease	51.0
Chronic Obstructive Pulmonary Disease	47.8
Diagnosed Diabetes	35.6
Life Expectancy at Birth	96.8

Cognitively Disabled	15.9
Physically Disabled	39.7
Heart Attack ER Admissions	71.8
Mental Health Not Good	36.5
Chronic Kidney Disease	35.4
Obesity	41.1
Pedestrian Injuries	81.5
Physical Health Not Good	35.8
Stroke	45.2
Health Risk Behaviors	—
Binge Drinking	52.5
Current Smoker	43.7
No Leisure Time for Physical Activity	25.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	37.8
Elderly	76.6
English Speaking	13.0
Foreign-born	89.7
Outdoor Workers	8.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	33.6
Traffic Density	36.1
Traffic Access	23.0
Other Indices	—
Hardship	72.8

Other Decision Support	—
2016 Voting	39.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	63.0
Healthy Places Index Score for Project Location (b)	28.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Based on data provided by the applicant
Construction: Construction Phases	Adusted construction schedule based on start and end dates provided by the applicant
Operations: Energy Use	Based on applicant provided information
Operations: Water and Waste Water	Based on information provided by the applicant
Construction: Trips and VMT	Longest hauling trip from project site to Simi Valley Landfill

Construction: Off-Road Equipment	Inserted Tier 4 final engine mitigation to reduce emissions
Operations: Vehicle Data	Based on traffic report provided by Fehr & Peers

South Oxnard Aquatics Center Pipeline_mitigated Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	South Oxnard Aquatics Center Pipeline_mitigated
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.20
Precipitation (days)	16.0
Location	34.16924475477339, -119.15474213327991
County	Ventura
City	Oxnard
Air District	Ventura County APCD
Air Basin	South Central Coast
TAZ	3423
EDFZ	8
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Road Construction	0.27	Mile	0.17	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mit.	0.87	6.39	39.5	0.06	0.17	1.64	1.76	0.17	0.23	0.36	—	6,926	6,926	0.28	0.07	0.05	6,955
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mit.	0.03	0.24	1.43	< 0.005	0.01	0.06	0.06	0.01	0.01	0.01	—	250	250	0.01	< 0.005	0.03	251
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mit.	0.01	0.04	0.26	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.4	41.4	< 0.005	< 0.005	0.01	41.6
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

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

2.3. Construction Emissions by Year, Mitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.87	6.39	39.5	0.06	0.17	1.64	1.76	0.17	0.23	0.36	—	6,926	6,926	0.28	0.07	0.05	6,955
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.03	0.24	1.43	< 0.005	0.01	0.06	0.06	0.01	0.01	0.01	—	250	250	0.01	< 0.005	0.03	251

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.01	0.04	0.26	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.4	41.4	< 0.005	< 0.005	0.01	41.6

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2023) - Unmitigated

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

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

3.2. Linear, Grubbing & Land Clearing (2023) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.84	3.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	491	491	0.02	< 0.005	—	492
Dust From Material Movement	—	—	—	—	—	0.21	0.21	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.69	2.69	< 0.005	< 0.005	—	2.70
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.45	0.45	< 0.005	< 0.005	—	0.45
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.03	0.33	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	66.5	66.5	< 0.005	< 0.005	0.01	67.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.37	0.37	< 0.005	< 0.005	< 0.005	0.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Linear, Grading & Excavation (2023) - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

3.4. Linear, Grading & Excavation (2023) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.66	6.16	37.5	0.06	0.12	—	0.12	0.12	—	0.12	—	6,495	6,495	0.26	0.05	—	6,518
Dust From Material Movement	—	—	—	—	—	1.24	1.24	—	0.13	0.13	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.72	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	125	125	0.01	< 0.005	—	125
Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.7
Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.19	1.97	0.00	0.00	0.39	0.39	0.00	0.09	0.09	—	399	399	0.02	0.01	0.05	404
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.7	31.7	< 0.005	< 0.005	< 0.005	33.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.70	7.70	< 0.005	< 0.005	0.02	7.81

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.64
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.28	1.28	< 0.005	< 0.005	< 0.005	1.29
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.10	0.10	< 0.005	< 0.005	< 0.005	0.11
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Linear, Drainage, Utilities, & Sub-Grade (2023) - Unmitigated

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

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

3.6. Linear, Drainage, Utilities, & Sub-Grade (2023) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.75	5.15	31.6	0.05	0.17	—	0.17	0.17	—	0.17	—	5,693	5,693	0.23	0.05	—	5,712
Dust From Material Movement	—	—	—	—	—	1.03	1.03	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.52	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	93.6	93.6	< 0.005	< 0.005	—	93.9
Dust From Material Movement	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.5	15.5	< 0.005	< 0.005	—	15.5

Dust From Material Movement	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.16	1.64	0.00	0.00	0.33	0.33	0.00	0.08	0.08	—	332	332	0.02	0.01	0.04	336
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.50	5.50	< 0.005	< 0.005	0.01	5.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Linear, Paving (2023) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

3.8. Linear, Paving (2023) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	2.58	11.3	0.01	0.03	—	0.03	0.03	—	0.03	—	1,620	1,620	0.07	0.01	—	1,625

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.3	13.3	< 0.005	< 0.005	—	13.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.20	2.20	< 0.005	< 0.005	—	2.21
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.11	1.15	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	233	233	0.01	0.01	0.03	236
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.93	1.93	< 0.005	< 0.005	< 0.005	1.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.32	0.32	< 0.005	< 0.005	< 0.005	0.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

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

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

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

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

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

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Linear, Grubbing & Land Clearing	Linear, Grubbing & Land Clearing	11/1/2023	11/3/2023	5.00	2.00	—
Linear, Grading & Excavation	Linear, Grading & Excavation	11/4/2023	11/13/2023	5.00	7.00	—
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	11/14/2023	11/22/2023	5.00	6.00	—
Linear, Paving	Linear, Paving	11/23/2023	11/27/2023	5.00	3.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Grading & Excavation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Linear, Grading & Excavation	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Linear, Grading & Excavation	Graders	Diesel	Average	1.00	8.00	148	0.41
Linear, Grading & Excavation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Linear, Grading & Excavation	Rubber Tired Loaders	Diesel	Average	1.00	8.00	150	0.36
Linear, Grading & Excavation	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Linear, Grading & Excavation	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Graders	Diesel	Average	1.00	8.00	148	0.41
Linear, Drainage, Utilities, & Sub-Grade	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Linear, Drainage, Utilities, & Sub-Grade	Pumps	Diesel	Average	1.00	8.00	11.0	0.74

Linear, Drainage, Utilities, & Sub-Grade	Rough Terrain Forklifts	Diesel	Average	1.00	8.00	96.0	0.40
Linear, Drainage, Utilities, & Sub-Grade	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Linear, Drainage, Utilities, & Sub-Grade	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Linear, Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Linear, Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Linear, Paving	Rollers	Diesel	Average	3.00	8.00	36.0	0.38
Linear, Paving	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Crawler Tractors	Diesel	Tier 4 Final	1.00	8.00	87.0	0.43
Linear, Grubbing & Land Clearing	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Linear, Grubbing & Land Clearing	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Grading & Excavation	Crawler Tractors	Diesel	Tier 4 Final	1.00	8.00	87.0	0.43
Linear, Grading & Excavation	Excavators	Diesel	Tier 4 Final	3.00	8.00	36.0	0.38
Linear, Grading & Excavation	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Linear, Grading & Excavation	Rollers	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38

Linear, Grading & Excavation	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	8.00	150	0.36
Linear, Grading & Excavation	Scrapers	Diesel	Tier 4 Final	2.00	8.00	423	0.48
Linear, Grading & Excavation	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Air Compressors	Diesel	Tier 4 Final	1.00	8.00	37.0	0.48
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Linear, Drainage, Utilities, & Sub-Grade	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Linear, Drainage, Utilities, & Sub-Grade	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Linear, Drainage, Utilities, & Sub-Grade	Rough Terrain Forklifts	Diesel	Tier 4 Final	1.00	8.00	96.0	0.40
Linear, Drainage, Utilities, & Sub-Grade	Scrapers	Diesel	Tier 4 Final	2.00	8.00	423	0.48
Linear, Drainage, Utilities, & Sub-Grade	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Linear, Paving	Pavers	Diesel	Tier 4 Final	1.00	8.00	81.0	0.42
Linear, Paving	Paving Equipment	Diesel	Tier 4 Final	1.00	8.00	89.0	0.36
Linear, Paving	Rollers	Diesel	Tier 4 Final	3.00	8.00	36.0	0.38
Linear, Paving	Signal Boards	Electric	Average	0.00	8.00	6.00	0.82
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	—	—	—	—
Linear, Grubbing & Land Clearing	Worker	5.00	18.5	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	0.00	10.2	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	0.00	20.0	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	—	—	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	30.0	18.5	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	1.00	10.2	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.00	20.0	HHDT
Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	25.0	18.5	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	10.2	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	0.00	20.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00	10.2	HHDT,MHDT
Linear, Paving	Hauling	0.00	20.0	HHDT
Linear, Paving	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Linear, Grubbing & Land Clearing	—	—	—	—
Linear, Grubbing & Land Clearing	Worker	5.00	18.5	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	0.00	10.2	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	0.00	20.0	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	—	—	HHDT
Linear, Grading & Excavation	—	—	—	—
Linear, Grading & Excavation	Worker	30.0	18.5	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	1.00	10.2	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.00	20.0	HHDT
Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	25.0	18.5	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	10.2	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	0.00	20.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00	10.2	HHDT,MHDT
Linear, Paving	Hauling	0.00	20.0	HHDT
Linear, Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Linear, Grubbing & Land Clearing	—	—	0.17	0.00	—
Linear, Grading & Excavation	—	—	0.17	0.00	—
Linear, Drainage, Utilities, & Sub-Grade	—	—	0.17	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Road Construction	0.17	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	532	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.95	annual days of extreme heat
Extreme Precipitation	4.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

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

6.2. Initial Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

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

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	24.9
AQ-PM	33.1
AQ-DPM	56.7

Drinking Water	71.6
Lead Risk Housing	44.6
Pesticides	99.0
Toxic Releases	75.5
Traffic	42.8
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	2.11
Haz Waste Facilities/Generators	1.80
Impaired Water Bodies	43.8
Solid Waste	0.00
Sensitive Population	—
Asthma	52.4
Cardio-vascular	67.5
Low Birth Weights	36.7
Socioeconomic Factor Indicators	—
Education	93.1
Housing	59.3
Linguistic	86.6
Poverty	72.4
Unemployment	56.2

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	26.26716284

Employed	61.27293725
Median HI	36.21198511
Education	—
Bachelor's or higher	20.73655845
High school enrollment	3.490311818
Preschool enrollment	21.73745669
Transportation	—
Auto Access	58.83485179
Active commuting	19.196715
Social	—
2-parent households	42.33286283
Voting	42.858976
Neighborhood	—
Alcohol availability	66.36725266
Park access	52.04670858
Retail density	68.61285769
Supermarket access	64.7760811
Tree canopy	11.04837675
Housing	—
Homeownership	64.71192095
Housing habitability	64.32696009
Low-inc homeowner severe housing cost burden	60.82381625
Low-inc renter severe housing cost burden	87.77107661
Uncrowded housing	12.81919672
Health Outcomes	—
Insured adults	26.25433081
Arthritis	63.4

Asthma ER Admissions	69.4
High Blood Pressure	35.9
Cancer (excluding skin)	66.1
Asthma	43.1
Coronary Heart Disease	51.0
Chronic Obstructive Pulmonary Disease	47.8
Diagnosed Diabetes	35.6
Life Expectancy at Birth	96.8
Cognitively Disabled	15.9
Physically Disabled	39.7
Heart Attack ER Admissions	71.8
Mental Health Not Good	36.5
Chronic Kidney Disease	35.4
Obesity	41.1
Pedestrian Injuries	81.5
Physical Health Not Good	35.8
Stroke	45.2
Health Risk Behaviors	—
Binge Drinking	52.5
Current Smoker	43.7
No Leisure Time for Physical Activity	25.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	37.8
Elderly	76.6
English Speaking	13.0

Foreign-born	89.7
Outdoor Workers	8.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	33.6
Traffic Density	36.1
Traffic Access	23.0
Other Indices	—
Hardship	72.8
Other Decision Support	—
2016 Voting	39.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	63.0
Healthy Places Index Score for Project Location (b)	28.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Trips and VMT	Adjusted default

Appendix B

Cultural Resources Technical Report

The Cultural Resources Technical Report contains sensitive and confidential information concerning archaeological sites. This report is held confidential and is not for public distribution.

Appendix C

Geotechnical Evaluation

Geotechnical Evaluation

South Oxnard Aquatic Center Project
Oxnard College Park

Oxnard, California

ELS Architecture + Urban Design
2040 Addison Street | Berkeley, California 94704

August 26, 2022 | Project No. 211972001

Geotechnical | Environmental | Construction Inspection & Testing | Forensic Engineering & Expert Witness

Geophysics | Engineering Geology | Laboratory Testing | Industrial Hygiene | Occupational Safety | Air Quality | GIS

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

CELEBRATING 35 YEARS

Geotechnical Evaluation
South Oxnard Aquatic Center Project
Oxnard College Park
Oxnard, California

Mr. William Gordon
ELS Architecture + Urban Design
2040 Addison Street | Berkeley, California 94704

August 26, 2022 | Project No. 211972001

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Senior Geologist

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Principal Engineer

ANP/JRS/SG/mlc

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APPENDICES

1 INTRODUCTION

In accordance with your request and authorization, we have performed a geotechnical evaluation for the South Oxnard Aquatic Center Project located at Oxnard College Park in Oxnard, California (Figure 1). The purpose of our study was to evaluate the soil and geologic conditions at the site, and to develop geotechnical recommendations regarding the design and construction of the proposed improvements. This report presents our findings, conclusions, and recommendations based on our background review, site reconnaissance, subsurface evaluation, laboratory testing, and geotechnical analyses.

A previous geotechnical subsurface evaluation was performed at, and in the vicinity of, the subject aquatic center site by Earth Systems Southern California for the design and construction of the Oxnard College Park facility (Earth Systems Southern California, 2007 and 2009). Many of the proposed improvements have already been constructed to the west of the subject site, but the South Oxnard Aquatic Center portion of the site was not developed.

2 SCOPE OF SERVICES

Our scope of services included the following:

- Project coordination, planning, scheduling for subsurface exploration, and teleconference meetings with the project team.
- Review of readily available background materials, including published geologic maps, fault and seismic hazards maps, groundwater data, topographic maps, stereoscopic aerial photographs, and project related reports and plans.
- Site reconnaissance to locate the proposed borings for utility clearance, and coordination with Underground Services Alert for underground utility location.
- Permit acquisition with the City of Oxnard for drilling on city property and for drilling below groundwater.
- Subsurface exploration consisting of the drilling, logging, and sampling of fifteen hollow-stem auger borings ranging in depth from approximately 5 to 31½ feet below the ground surface. The borings were logged by a representative of our firm and bulk and relatively undisturbed soil samples were collected at selected intervals for laboratory testing.
- Subsurface exploration consisting of three cone penetration tests (CPT) to depths of approximately 100 feet below the ground surface. Shear wave velocity readings were collected at approximately 10-foot intervals in one of the CPTs.
- In-situ percolation testing performed at one boring location in general accordance with the referenced Ventura County Technical Guidance Manual for Stormwater Control Measures (GCLWA, 2018).

- Geotechnical laboratory testing on collected samples to evaluate in-situ moisture and dry density, the percentage of particles smaller than the number 200 sieve, Atterberg limits, consolidation, direct shear strength, soil corrosivity, and R-value.

- Data compilation and engineering analysis of the information obtained from our background review, subsurface evaluation, and laboratory testing.

- Preparation of this geotechnical report presenting our findings, conclusions, and recommendations for design and construction of the proposed project.

3 SITE DESCRIPTION AND PROPOSED CONSTRUCTION

The project site is located on the outskirts of the existing 75-acre Oxnard College Park at 3250 South Rose Avenue, Oxnard, California (Figure 1). The project site is located to the east of the existing soccer fields and is bounded by the College Park access road to the east, undeveloped land and South Oxnard Boulevard to the north, undeveloped land to the east, and Oxnard College's tennis and basketball courts to the south (Figure 2). The site is unpaved and undeveloped and has a recent history of being used to store mulch piles. The mulch piles were removed prior to our evaluation. The topography of the site is relatively flat with an elevation of approximately 35 feet above mean sea level (United States Geological Survey [USGS], 2022).

The project involves the design and construction of a new aquatic center. At the time of our evaluation, the project was still in the conceptual stages of development; however, the new aquatic center is anticipated to include two single-story buildings that will house administrative offices, restrooms, a concessions room, a training room, locker rooms, equipment rooms, and storage rooms. The center will also have a large 50-meter pool, a 25-yard pool, a fun water pool with a water slide, and a splash pad area. Additional improvements will include bleachers, a picnic area, a parking lot with 159 parking spaces, hardscape, and landscaping.

4 SUBSURFACE EXPLORATION AND LABORATORY TESTING

Our subsurface evaluation was performed on July 12 through 14, 2022 and consisted of the drilling, logging, and sampling of fifteen hollow-stem auger borings to depths ranging from approximately 5 to 31½ feet below the ground surface and three CPT soundings to depths of approximately 100 feet below the ground surface. The borings were drilled using truck-mounted drilling equipment. A representative from Ninyo & Moore logged the borings and obtained bulk and relatively undisturbed soil samples at selected depths for laboratory testing. The CPT soundings were performed using a 30-ton CPT rig. Continuous soil profiles, including cone tip resistance and sleeve friction, were recorded during the soundings. Shear wave velocity readings were also collected at approximately 10-foot intervals in CPT-3. The borings and CPTs deeper than 6½ feet were backfilled with cement-bentonite grout and capped with on-site soils. The boring and CPT logs are presented in Appendices A and B, respectively, and the approximate locations of the borings and CPT soundings are shown on Figure 2.

Geotechnical laboratory testing of representative soil samples included tests to evaluate in-situ moisture content and dry density, the percentage of particles finer than the number 200 sieve, Atterberg limits, consolidation, direct shear strength, R-value, and soil corrosivity. In-situ moisture content and dry density test results are presented on the boring logs in Appendix A. The remaining laboratory test results are presented in Appendix C.

In-situ percolation testing was performed in one boring (B-4) to evaluate the infiltration rates of the on-site soils at a potential stormwater infiltration location for the project. Details regarding the percolation testing are provided in the Field Percolation Testing section of this report.

5 GEOLOGY AND SUBSURFACE CONDITIONS

5.1 Regional Geologic Setting

The project site is located within the Ventura Basin, which is situated in the Transverse Ranges Geomorphic Province (Norris and Webb, 1990). The Ventura Basin is part of a large synclinal fold approximately 120 miles in length that extends from the Santa Barbara Channel inland to the Santa Clarita region and it is underlain by marine Cretaceous to Cenozoic sedimentary rocks (Norris and Webb, 1990). The site is located on the broad, relatively flat coastal lowlands of the Oxnard Plain, which are underlain by variable thicknesses of Holocene alluvium. According to the California Division of Mines and Geology (CDMG, 2002a), the Oxnard Plain is covered by approximately 200 to 250 feet of Holocene-age sediments derived from the highland regions of northern Ventura and western Los Angeles counties and deposited by the Santa Clara River.

The proposed new aquatic center is located along a drainage channel located on a coastal alluvial plain approximately 3 miles from the Pacific Ocean. Prior to land development activities in the mid-1970s, the area in the vicinity of the site was farmland and ranch lands (Historic Aerials, 2022). Regional geologic mapping indicates that the site is underlain by Holocene-age alluvial fan and flood plain overbank deposits consisting of predominantly of clay with interbedded lenses of sand and occasional gravel (Figure 3) (Clahan, 2003). Our review of geologic literature and aerial photographs did not indicate the presence of landslides or active faulting at the site.

5.2 Site Geology

The results of our subsurface exploration indicate that the site is underlain by fill soils and alluvium. Fill soils were encountered at the ground surface in borings B-5 and B-7 through B-15 to depths ranging from approximately 4 to 6½ feet below the ground surface. The fill generally consisted of moist, loose to medium dense, silty sand with gravel. Alluvium was encountered at the ground surface in borings B-1 through B-4 and B-6, and below the fill soils in the above borings to the total depths explored of up to approximately 31½ feet. The alluvium generally consisted of moist to wet, loose to very dense silty sand, clayey sand, and poorly graded sand, and firm to very stiff silt and lean clay.

6 GROUNDWATER

Groundwater was observed in our exploratory borings at depths ranging from approximately 12 to 16 feet below the ground surface. Groundwater was also encountered in Earth Systems' borings near the project site as shallow as approximately 7½ feet below the ground surface (Earth Systems, 2007) (Appendix D). Regional maps indicate that the historic high groundwater level in the vicinity of the site is approximately 7 feet below the ground surface (CDMG, 2002a). Groundwater levels observed at the time of drilling are not considered stabilized. It should be noted that fluctuations in the level of groundwater will occur due to variations in ground surface topography, subsurface stratification, rainfall, irrigation practices, groundwater pumping, and other factors which may not have been evident at the time of our field evaluation.

7 FIELD PERCOLATION TESTING

Percolation testing was performed in boring B-4 in general accordance with the Ventura County Technical Guidance Manual for Stormwater Quality Control Measures (VCTGM) (GCLWA, 2018). The testing was performed to evaluate the infiltration rate of the on-site soils in the general vicinity of a possible stormwater infiltration area for use in design of Best Management Practices (BMPs) by others. The approximate location of the percolation test boring (B-4) is shown on Figure 2.

Boring B-4 was drilled to a depth of approximately 5 feet below the existing ground surface. Preparation of the drilled boring for percolation testing included the installation of a 2-inch-diameter polyvinyl chloride (PVC) pipe in the boring and backfilling the annular space between the borehole wall and pipe with clean pea gravel. After the boring was pre-soaked for 24 hours, a Falling-Head Borehole Infiltration Test (GCLWA, 2018) was performed in the boring. The falling-head test method involved placing clean water into the PVC pipe to a depth of approximately 26 inches below the ground surface. The depth of the water was measured after one hour. The PVC pipe was refilled to a depth of 26 inches below the ground surface and the test procedure was repeated for a total of four times. The last field percolation rate measurement was 14 inches per hour.

Based on our preliminary percolation testing and the VCTGM, the site may be suitable for stormwater infiltration using a relatively shallow infiltration BMP, such as permeable pavements, infiltration trenches, and vegetated swales. However, the design infiltration rate should first be calculated using the above field percolation rate divided by a Safety Factor. The Safety Factor should be calculated based on several "Suitability Assessment" and "Design" factors, as described in the VCTGM and shown in Table 1 below. Based on our knowledge of the site, we have inserted values the Suitability Assessment Factor Category; however, the Design Factor Category should be based on information provided by the project civil engineer.

Table 1 – Infiltration Facility Safety Factor Worksheet

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p)
A	Suitability Assessment	Soil Assessment Methods	0.25	3	0.75
		Predominant Soil Texture	0.25	3	0.75
		Site Soil Variability	0.25	2	0.50
		Depth to Groundwater / Impervious Layer	0.25	3	0.75
		Suitability Assessment Safety Factor, $S_A = \sum p$			2.75
B	Design	Tributary Area Size	0.25	TBD	TBD
		Level of Pre-Treatment / Expected Sediment Loads	0.25	TBD	TBD
		Redundancy	0.25	TBD	TBD
		Compaction During Construction	0.25	TBD	TBD
		Design Safety Factor, $S_B = \sum p$			TBD
Combined Safety Factor = S_A x S_B					

Notes:
TBD – To be determined by the project civil engineer

As discussed in the VCTGM, some additional limitations should be considered before choosing an infiltration BMP, including the following:

- A 5-foot vertical separation is needed between the bottom of the infiltration BMP and groundwater. Due to a historic high groundwater of approximately 7 feet below the ground surface, the BMP invert should be 2 feet deep, or less.
- Infiltration BMPs must be setback from building foundations of 8 feet or more; however, we typically recommend a setback from building foundations of 15 feet or more.

8 FAULTING AND SEISMICITY

The site is located in a seismically active area, as is the majority of southern California, and the potential for strong ground motion in the project area is considered significant during the design life of the proposed improvements. Figure 4 shows the approximate site location relative to the principal faults in the region. Based on our background review and site reconnaissance, the project site is not transected by known active or potentially active faults, nor is it located within a

State of California Earthquake Fault Zone (formerly known as an Alquist-Priolo Special Studies Zone) (CGS, 2018). However, the mapped Earthquake Fault Zone for the Oakridge fault is located approximately 9.4 miles northwest of the project area (Figure 4) (CDMG, 2002b).

Principal seismic hazards typically associated with seismic activity are surface ground rupture, ground shaking, seismically induced liquefaction, and various manifestations of liquefaction-related hazards (e.g., dynamic settlement). A brief description of these hazards and the potential for their occurrences at the project locations are discussed below.

8.1 Surface Fault Rupture

Surface fault rupture is the offset or rupturing of the ground surface by relative displacement across a fault during an earthquake. Based on our review of referenced geologic and fault hazard data, the project site is not transected by known active or potentially active faults. Therefore, the probability of damage from surface fault rupture is considered to be low. However, lurching or cracking of the ground surface as a result of nearby seismic events is possible.

8.2 Site-Specific Ground Motion

Considering the proximity of the site to active faults capable of producing a maximum moment magnitude of 6.0 or more, the project area has a high potential for experiencing strong ground motion. The 2019 California Building Code (CBC) specifies that the risk-targeted maximum considered earthquake (MCE_R) ground motion response accelerations be used to evaluate seismic loads for design of buildings and other structures. Per the 2019 CBC, a site-specific ground motion hazard analysis shall be performed for structures on Site Class D with a mapped MCE_R, 5 percent damped, spectral response acceleration parameter at a period of 1 second (S1) greater than or equal to 0.2g in accordance with Sections 21.2 and 21.3 of the American Society of Civil Engineers (ASCE) Publication 7-16 (2016) for the Minimum Design Loads and Associated Criteria for Building and Other Structures. We calculated that the S1 for the site is equal to 0.588g using the 2021 Applied Technology Council (ATC) seismic design tool (web-based).

The site-specific ground motion hazard analysis consisted of the review of available seismologic information for nearby faults and performance of probabilistic seismic hazard analysis (PSHA) and deterministic seismic hazard analysis (DSHA) to develop acceleration response spectrum curves corresponding to the MCE_R for 5 percent damping. Prior to the site-specific ground motion hazard analysis, we obtained the mapped seismic ground motion values and developed the general MCE_R response spectrum for 5 percent damping in accordance with Section 11.4 of ASCE 7-16 (ATC, 2021). The average shear wave velocity (V_S) for the upper 30 meters of soil (V_{S30}) was measured to be 230 meters per second (m/s) in one of our CPT soundings and the depths to V_S = 1,000 m/s and V_S = 2,500 m/s are assumed to be 650 meters and 3,050 meters, respectively (Southern California Earthquake Center, 2005). These values were evaluated using the Open Seismic Hazard Analysis software developed by USGS (USGS, 2020).

The 2014 new generation attenuation (NGA) West-2 relationships were used to evaluate the site-specific ground motions. The NGA relationships that we used for developing the probabilistic and deterministic response spectra are by Chiou and Youngs (2014), Campbell and Bozorgnia (2014), Boore, Stewart, Seyhan, and Atkinson (2014), and Abrahamson, Silva, and Kamai (2014). The Open Seismic Hazard Analysis software developed by USGS (USGS, 2020) was used for performing the PSHA. The Calculation of Weighted Average 2014 NGA Models spreadsheet by the Pacific Earthquake Engineering Research Center (PEER) was used for performing the DSHA (Seyhan, 2014).

PSHA was performed for earthquake hazards having a 2 percent chance of being exceeded in 50 years multiplied by the risk coefficients per ASCE 7-16. The maximum rotated components of ground motions were considered in PSHA with 5 percent damping. For the DSHA, we analyzed accelerations from characteristic earthquakes on active faults within the region using the hazard curves and deaggregation plots at the site obtained from the USGS Unified Hazard Tool application (USGS, 2021a). A magnitude 7.4 event on the Oakridge fault with a rupture distance of 9.4 kilometers from the site was evaluated to be the controlling earthquake. Hence, the DSHA was performed for the site using this event and corrections were made to the spectral accelerations for the 84th percentile of the maximum rotated component of ground motion with 5 percent damping.

The site-specific MCE_R response spectrum was taken as the lesser of the spectral response acceleration at any period from the PSHA and DSHA, and the site-specific general response spectrum was determined by taking two-thirds of the MCE_R response spectrum with some conditions in accordance with Section 21.3 of ASCE 7-16. Figure 5 presents the site-specific MCE_R response spectrum and the site-specific design response spectrum. The general mapped design response spectrum calculated in accordance with Section 11.4 of ASCE 7-16 is also presented on Figure 5 for comparison. The site-specific spectral response acceleration parameters, consistent with the 2019 CBC, are provided in Section 10.3 for the evaluation of seismic loads on buildings and other structures. The site-specific maximum considered earthquake geometric mean (MCE_G) peak ground acceleration, PGA_M, was calculated as 0.687g.

8.3 Liquefaction

Liquefaction is the phenomenon in which loosely deposited granular soils with silt and clay contents of less than approximately 35 percent and non-plastic silts located below the water table undergo rapid loss of shear strength when subjected to strong earthquake-induced ground shaking. Ground shaking of sufficient duration results in the loss of grain-to-grain contact due to a rapid rise in pore water pressure, and causes the soil to behave as a fluid for a short period of time. Liquefaction is known generally to occur in saturated or near-saturated cohesionless soils at depths shallower than 50 feet below ground surface. Factors known to influence liquefaction potential include composition and thickness of soil layers, grain size, relative density, groundwater level, degree of saturation, and both intensity and duration of ground shaking.

As shown on Figure 6, the project site is located in an area mapped as potentially liquefiable on State of California Seismic Hazards Zone map (CDMG, 2022b). Accordingly, the liquefaction potential of the subsurface soils was evaluated using the CPT soundings performed during our subsurface exploration. The liquefaction analysis was based on the National Center for Earthquake Engineering Research procedure (Youd, et al., 2001) using the computer program CLiq (GeoLogismiki, 2022). A groundwater depth of 7 feet and a PGA_M of 0.687g was used in our analysis for a design earthquake magnitude of 7.4.

8.4 Liquefaction-Induced Settlement

As a result of liquefaction, the site improvements may be subject to liquefaction-induced settlement. In order to estimate the amount of post-earthquake settlement, the method proposed by Tokimatsu and Seed (1987) was used in which the seismically induced cyclic stress ratios and corrected N-values are related to the volumetric strain of the soil. The amount of soil settlement during a strong seismic event depends on the thickness of the liquefiable layers and the density and/or consistency of the soils.

Our liquefaction analysis indicated that the liquefaction-induced total dynamic settlement ranges from approximately 4 to 5 inches. Based on the guidelines presented in CGS Special Publication 117A (2008) and in consideration of the relatively uniform subsurface stratigraphy across the site, we estimate differential settlement on the order of approximately 2.5 inches over a horizontal span of about 30 feet in the project area. The results of our analysis are presented in Appendix E.

9 CONCLUSIONS

Based on our geotechnical evaluation, it is our opinion that the proposed improvements are feasible from a geotechnical standpoint, provided that the following recommendations are incorporated into the design and construction of the project and special considerations are made to remedy the impact of relatively large liquefaction-induced settlement on the proposed improvements. In general, the following conclusions were made:

- Based on our subsurface exploration, the site is underlain by fill and alluvium. The fill generally consisted of moist, loose to medium dense, silty sand with gravel. The alluvium generally consisted of moist to wet, loose to very dense silty sand, clayey sand, and poorly graded sand, and firm to very stiff silt and lean clay.
- Undocumented fill soils are not suitable for the support of foundations and new fill. Remedial grading should be performed as recommended in this report.
- Groundwater was encountered during our subsurface exploration at depths ranging from approximately 12 to 16 feet below the ground surface. Historic high groundwater at the site is approximately 7 feet below the ground surface. Groundwater levels measured during our field exploration are not considered stabilized levels and will be subject to change.
- Excavations should be feasible with heavy-duty earthmoving equipment in good working order. The on-site soils should be considered as Type C soils in accordance with Occupational Safety and Health Administration (OSHA) regulations. Caving conditions should be anticipated in soils with low cohesion and soils that are close to or below groundwater.
- Sand and silty sand encountered during site grading should be suitable for re-use as backfill; however, the silt and clay material is not recommended for use as backfill. Soil materials that have relatively high moisture contents and will involve drying back to near optimum moisture contents prior to use as compacted fill.
- The project site is not located within a State of California Earthquake Fault Zone (formerly Alquist-Priolo Special Studies Zone). Based on our review of published geologic maps and aerial photographs, no known active or potentially active faults transect the sites. The potential for surface fault rupture at the sites is considered low.
- The project site is located in a State of California Seismic Hazard Zone for liquefaction. Based on our subsurface evaluation, the soils below the groundwater table are susceptible to liquefaction during the design seismic event. Our analysis indicates that liquefaction-induced total dynamic settlement ranges from approximately 4 to 5 inches at the site. Differential settlement due to liquefaction is estimated to be on the order of approximately 2.5 inches over a horizontal span of about 30 feet in the project area.
- The design PGA_M was calculated as 0.687g for the site.
- The field percolation rate was measured as 14 inches per hour. Based on our preliminary percolation testing and the VCTGM, the project site may be suitable for stormwater infiltration using relatively shallow infiltration BMPs, such as permeable pavements, infiltration trenches, and vegetated swales. The design infiltration rate should be evaluated using the field percolation rate and a Safety Factor calculated using site-specific factor categories as described in the VCTGM.
- Our limited laboratory corrosion testing indicates that the project site may be classified as a corrosive site based on California Department of Transportation (Caltrans, 2021) corrosion guidelines.

10 RECOMMENDATIONS

The recommendations presented in the following section provide general geotechnical criteria regarding the design and construction of the proposed improvements. The recommendations are based on the results of our subsurface evaluation, laboratory testing, review of referenced geologic materials, experience in the general vicinity of the project area, and geotechnical analyses. We anticipate that additional recommendations including deep foundations and ground improvements may need to be included in this section during the final design phase of this project to mitigate the adverse impact of excessive liquefaction-induced settlement on the proposed improvements. The proposed work should be performed in conformance with the recommendations presented in this report, project specifications, and appropriate agency standards.

10.1 Earthwork

Earthwork at the site is anticipated to consist of remedial grading of the near-surface soils, fill placement, foundation excavations, trenching and backfilling for new utilities, pavement construction, and finish grading for establishment of site drainage. Earthwork operations should be performed in accordance with the requirements of the applicable governing agencies and the recommendations presented in the following sections of this report.

10.1.1 Pre-Construction Conference

We recommend that a pre-construction conference be held. The owner and/or their representative, the governing agencies' representatives, the civil engineer, the geotechnical engineer, and the contractor should be in attendance to discuss the work plan and project schedule.

10.1.2 Site Preparation

Prior to performing excavations, the project areas should be cleared of rubble and debris, abandoned utilities, surface obstructions, organic materials left behind from previous mulch piles, and other deleterious materials. Existing utilities within the project limits should be re-routed or protected from damage by construction activities. Obstructions that extend below subgrade of the improvements, if any, should be removed and the resulting holes filled with compacted soils. Materials generated from clearing operations should be removed from the project sites and disposed of at a legal dumpsite.

10.1.3 Temporary Excavations and Shoring

We anticipate that excavations within fill and alluvial soils at the site may be accomplished with backhoes, excavators, or other earthmoving equipment in good working condition. Temporary excavations up to approximately 4 feet in depth are anticipated to be generally stable at a slope inclination no steeper than 1:1 (horizontal to vertical). Excavations that are unstable or deeper than 4 feet, may need to be laid back at a slope inclination of approximately 1.5:1 (horizontal to vertical) or flatter.

Where temporary slopes are not possible, shoring will be appropriate. The design of the shoring system should consider the excavation characteristics of the onsite soil, temporary excavation stability, and the impact of construction on existing structures. The temporary cantilevered and braced shoring systems used for site excavations should be designed for the anticipated soil conditions using the lateral earth pressure values presented on Figures 7 and 8, respectively. The recommended design pressures are based on the assumption that the shoring system is constructed without raising the ground surface elevation behind the shored sidewalls of the excavation, that there are no surcharge loads, such as soil stockpiles and construction materials, and that no loads act above a 1:1 (horizontal to vertical) plane ascending from the base of the shoring system. For a shoring system subjected to the above-mentioned surcharge loads, the contractor should include the effect of these loads on the lateral earth pressures acting on the shored walls.

The contractor should retain a qualified and experienced engineer to design the shoring system. The shoring parameters presented in this report are preliminary in nature, and the contractor should evaluate the adequacy of these parameters and make the requisite modifications for their design. We recommend that the contractor take appropriate measures to protect workers. OSHA requirements pertaining to worker safety should be observed. The on-site soils should be considered as soil Type C in accordance with OSHA requirements.

10.1.4 Temporary Access Ramps

Backfill materials placed within temporary access ramps extending into the pool excavations should be appropriately compacted and tested. This will mitigate excessive settlement of the backfill and subsequent damage to pool decking or other structures placed on the access ramp backfill areas.

10.1.5 Subgrade Preparation

Undocumented fill soils are not suitable for the support of foundations, pools, and new fill. The following remedial grading recommendations are provided for the proposed improvements.

10.1.5.1 Structures with Shallow Foundations, Fun Pool, and Splash Pad

In order to provide suitable support and reduce the potential settlement of proposed new structures with shallow foundations and the relatively shallow fun pool and splash pad, we recommend that the soil beneath the planned shallow foundations be overexcavated and recompacted to a depth that provides 3 or more feet of compacted fill beneath the bottom of the foundations, or to a depth that removes existing undocumented fill, whichever is deeper. The limits of the excavation should extend laterally so that the bottom of the excavation is approximately 5 feet beyond the outside edge of the structure's footprint, or a distance corresponding to the depth of the excavation, whichever is farther. The excavation bottom should be evaluated by our representative during the excavation work. Additional excavation of loose, soft, and/or wet areas may be appropriate, depending on our observations during construction. Prior to placing new compacted fill in areas that are excavated and/or in areas where the existing subgrade will be raised with new fill, the exposed bottom should be scarified, moisture-conditioned, and recompacted to a depth of approximately 8 inches.

10.1.5.2 50-Meter and 25-Yard Pools

In order to provide suitable support and reduce the potential settlement of the proposed new deeper pools, we recommend that the soil beneath the planned pool areas be excavated a minimum of 1 foot below the design subgrade elevation and replaced with newly compacted fill. The excavations should expose relatively dense native alluvial deposits. The limits of the excavation should extend laterally so that the bottom of the excavation is approximately 5 feet beyond the outside edge of the pool footprint, or a distance corresponding to the depth of the excavation, whichever is farther. The excavation bottom should be evaluated by our representative during the excavation work. Additional excavation of loose, soft, and/or wet areas may be appropriate, depending on our observations during construction. Prior to placing newly compacted fill, the exposed bottom should be scarified, moisture-conditioned, and recompacted to a depth of approximately 8 inches.

10.1.5.3 Exterior Hardscape and Pavements

The subgrade soils supporting exterior hardscape and pavement sections should consist of 12 inches or more of engineered fill compacted to 90 percent relative compaction, as evaluated by ASTM International (ASTM) test method D 1557. In areas to receive fill to reach design finish grades and areas of cut that are 12 inches or less, the surficial soils should be overexcavated to a depth of 12 inches and the bottom scarified to a depth of 8 inches, moisture-conditioned to slightly over the optimum moisture content, and recompacted to 90 percent relative compaction, prior to fill placement. In areas of cut that are deeper than 12 inches, the subgrade soils should be scarified to a depth of 8 inches, moisture-conditioned, and recompacted, as described above. A representative of Ninyo & Moore should observe remedial grading bottoms prior to fill placement. Additional overexcavation of loose, soft, and/or wet areas may be appropriate, depending on our observations during construction.

10.1.6 Groundwater and Construction Dewatering

Historic high groundwater for the site is approximately 7 feet below the ground surface. Groundwater was encountered during our subsurface evaluation at depths ranging from approximately 12 to 16 feet below the ground surface. However, fluctuations in the depth to groundwater will occur and shallower groundwater depths should be anticipated. Therefore, seepage and/or groundwater should be anticipated during construction.

If groundwater is encountered during construction, dewatering will be involved in order to perform work in a dry condition. The dewatering system design should be performed by a specialty dewatering contractor. Disposal of groundwater should be performed in accordance with guidelines of the Regional Water Quality Control Board. In order to further evaluate groundwater levels at the project site prior to the start of construction, installation of groundwater monitoring wells may be considered.

10.1.7 Excavation Bottom Stability

Trench, pool, and foundation excavations that extend close to or below groundwater (before or after dewatering) are anticipated to encounter wet, loose, and/or soft ground conditions that will be unstable or unsuitable to support the proposed improvements. In general, unstable bottom conditions may be mitigated by over-excavating the excavation bottom approximately 2 feet or more, and replacing the excavated soil with crushed aggregate base or gravel wrapped by filter fabric, such as Mirafi 140N, or equivalent. If aggregate base is used, it should consist of either Caltrans Class II aggregate base or crushed miscellaneous base. Caltrans Class II aggregate base should conform to the State of California Standard Specifications, Section 26 1.02A. Crushed miscellaneous base should conform to the Standard Specifications for Public Works Construction, Section 200 2.4. Aggregate base should be compacted to a relative compaction of 95 percent as evaluated by ASTM test method D 1557. Field tests to evaluate compaction should be performed during construction. Recommendations for stabilizing excavation bottoms should be based on evaluation in the field by the geotechnical consultant at the time of construction.

10.1.8 Fill Material

In general, the on-site granular soil should be suitable for reuse as fill provided they are free of trash, debris, or other deleterious materials. The on-site clayey soils and silt are not suitable for use as structural backfill. Excavations that extend near or below groundwater will involve wet soils. Wet soils should be allowed to dry to a moisture content near optimum prior to their placement as backfill. Fill should generally be free of rocks or lumps of material in excess of 4 inches in diameter. Rocks or hard lumps larger than approximately 4 inches in diameter should be broken into smaller pieces or should be removed from the site. Fill used as structural backfill, should be comprised of granular, non-expansive soil that conforms to the latest edition of “Greenbook” Standard Specifications for Public Works Construction (Greenbook) for structural backfill. “Non-expansive” is defined as soil having an expansion index of 20 or less in accordance with ASTM D 4829 (CBC, 2019).

Imported fill material should also consist of clean, granular material with a very low expansion potential, corresponding to an expansion index of 20 or less. The soil should also be tested for corrosive properties prior to importing. We recommend that the imported materials satisfy the Caltrans (2021) criteria for non-corrosive soils (i.e., soils having a chloride concentration of 500 ppm or less, a soluble sulfate content of approximately 0.15 percent (1,500 ppm) or less, a pH value of 5.5 or higher, or an electrical resistivity of 1,500 ohm-centimeters [ohm-cm] or more). Materials for use as fill should be evaluated by Ninyo & Moore prior to importing. The contractor should be responsible for the uniformity of import material brought to the site.

10.1.9 Fill Placement and Compaction

Fill should be placed and compacted in accordance with project specifications, the requirements of the City of Oxnard, and sound construction practices. Fill materials should be moisture-conditioned to slightly above the optimum laboratory moisture content. The lift thickness for fill soils will vary depending on the type of compaction equipment used, but should generally be placed in horizontal lifts not exceeding 8 inches in loose thickness. Fill materials should be compacted to a relative compaction of 90 percent as evaluated by ASTM D 1557. The upper 12 inches of pavement subgrade materials should be compacted to a relative compaction of 95 percent as evaluated by ASTM D 1557. Special care should be taken to avoid pipe damage when compacting trench backfill above pipes. Fill should be tested for specified compaction level by the geotechnical consultant.

10.2 Underground Utilities

We anticipate that new underground utility pipelines will be supported on fill or alluvial deposits. Utility trenches should not be excavated parallel to building footings. If needed, trenches can be excavated adjacent to a continuous footing, provided that the bottom of the trench is located above a 1:1 (horizontal to vertical) plane projected downward from a point 6 inches above the bottom of the adjacent footing. Utility lines that cross beneath footings should be encased in concrete below the footing.

10.2.1 Pipe Bedding

Pipe bedding should be constructed in general accordance with the City of Oxnard Public Works and “Greenbook” Standard Specifications. We recommend that utility lines be supported by 6 inches or more of granular bedding material such as sand with a sand equivalent (SE) value of 30 or more in accordance with ASTM D 2419. Bedding material should be placed and compacted around the pipe, and 12 inches or more above the top of the pipe. We do not recommend the use of crushed rock for bedding material. It has been our experience that the voids within a crushed rock material are sufficiently large enough to allow fines to migrate into the voids, thereby creating the potential for sinkholes and depressions to develop at the ground surface. Special care should be taken not to allow voids beneath and around the pipe. Bedding material and compaction requirements should be in accordance with the recommendations of this report, the project specifications, and applicable requirements of the appropriate agencies. Compaction of the bedding material and backfill should proceed evenly up both sides of the pipe and be compacted to 90 percent or more relative compaction as evaluated by ASTM D 1557.

10.2.2 Pipe Connections

Leakage from the swimming pools or the appurtenant plumbing fixtures could create adverse saturated conditions of the surrounding subgrade soils. Localized areas of oversaturation can lead to differential settlement of the subgrade soils and subsequent shifting of pool decking. Therefore, it is important that the plumbing and pool fixtures remain leak-free during the design life of the project. For pipes penetrating into the structures, “water-tight” penetration design should be utilized. To reduce the potential for pipe-to-wall differential settlement due to liquefaction which could cause pipe shearing, we recommend that a pipe joint be located close to the exterior of the walls. The type of joint should be such that relative movement can be accommodated without distress. The pipe connections should be sufficiently flexible to withstand differential settlement on the order of 2½ inches.

10.2.3 Modulus of Soil Reaction

The modulus of soil reaction is used to characterize the stiffness of soil backfill placed at the sides of buried pipelines for the purpose of evaluating deflection caused by the weight of the backfill above the pipe. We recommend that a modulus of soil reaction of 1,000 pounds per square inch (psi) be used for design, provided that granular bedding material is placed adjacent to the pipe, as recommended in this report.

10.2.4 Lateral Earth Pressures for Thrust Blocks

Thrust restraint for pipes under pressure may be achieved by transferring the thrust force to the soil outside the pipe through a thrust block. Thrust blocks may be designed using the lateral passive earth pressures presented on Figure 9.

10.3 Seismic Design Considerations

Design of the proposed improvements should be performed in accordance with the requirements of governing jurisdictions and applicable building codes. Table 2 presents the site-specific spectral response acceleration parameters in accordance with the CBC (2019) guidelines.

Table 2 – 2019 California Building Code Seismic Design Criteria

Site Coefficients and Spectral Response Acceleration Parameters	Values
Site Class	D
Mapped Spectral Response Acceleration at 0.2-second Period, S_s	1.600g
Mapped Spectral Response Acceleration at 1.0-second Period, S_1	0.588g
Site-Specific Spectral Response Acceleration at 0.2-second Period, S_{MS}	1.624g
Site-Specific Spectral Response Acceleration at 1.0-second Period, S_{M1}	1.702g
Site-Specific Design Spectral Response Acceleration at 0.2-second Period, S_{DS}	1.083g
Site-Specific Design Spectral Response Acceleration at 1.0-second Period, S_{D1}	1.134g
Site-Specific Maximum Considered Earthquake Geometric Mean (MCE_G) Peak Ground Acceleration, PGA_M	0.687g

10.4 Foundations

Recommendations for spread footings and mat foundations are presented in the following section. Foundations should be designed in accordance with structural considerations and the following recommendations. In addition, requirements of the appropriate governing jurisdictions and applicable building codes should be considered in the design of the structures.

Note that the following recommendations are based on the assumption that the proposed improvements will be able to withstand up to about 5 inches of liquefaction-induced total dynamic settlement or about 2½ inches of differential dynamic settlement over a horizontal span of about 30 feet. These settlements are expected to occur in addition to the static settlements presented below. If the project structural engineer considers the magnitude of dynamic settlements presented above to be excessive, we can develop appropriate foundation (i.e., piles) and ground modification alternatives for the design team to consider. The foundation recommendations presented below should be considered as preliminary in that case.

10.4.1 Spread Footings

Spread footings should extend 2 feet deep or more below the lowest adjacent finished grade and be supported on compacted fill. Continuous footings should have a width of 2 feet or more. Isolated pad footings should have a width of 3 feet or more. Footings constructed near existing underground utility lines should be deepened such that the utility line is located above a 1:1 (horizontal to vertical) plane projected downward from the base of the footing. Continuous footings should be reinforced with two No. 5 steel reinforcing bars, one placed near the top and one placed near the bottom of the footings, and further detailed in accordance with the recommendations of the structural engineer.

Spread footings, as described above and bearing on compacted fill, may be designed using a net allowable bearing capacity of 2,500 pounds per square foot (psf). The net allowable bearing capacity may be increased by 400 and 200 psf per foot of increase in depth and width, respectively, up to a value of 3,500 psf. Total and differential static settlements for footings designed in accordance with the above recommendations are estimated to be on the order of 1 inch and ½ inch over a horizontal span of 40 feet, respectively.

Footings bearing on compacted fill may be designed using a coefficient of friction of 0.35, where the total frictional resistance equals the coefficient of friction times the dead load. The footings may be designed using a passive resistance value of 350 psf per foot of depth up to a value of 3,500 psf. The allowable lateral resistance can be taken as the sum of the frictional resistance and passive resistance, provided the passive resistance does not exceed one-half of the total allowable resistance. The net allowable bearing capacity and passive resistance may be increased by one-third when considering loads of short duration such as wind or seismic forces.

Trenches should not be excavated adjacent to footings. If necessary, trenches can be excavated adjacent to a continuous footing, provided that the bottom of the trench is located above a 1:1 (horizontal to vertical) plane projected downward from the bottom of the adjacent footing. Utility lines that cross beneath footings, including the utility conduits that are planned to extend between the interior and exterior trenches, should be encased in concrete below the footing.

10.4.2 Mat Foundations

Mat foundations may be designed using a net allowable bearing capacity of 2,500 psf when supported on competent native subgrade or compacted fill. Mat foundations typically experience some deflection due to loads placed on the mat and the reaction of the soils underlying the mat. A design modulus of subgrade reaction (K_v) of 200 kips per cubic foot (kcf) may be used for the compacted subgrade soils in evaluating such deflections. This value is based on a unit square foot area and should be adjusted for the planned mat size. The coefficient of subgrade reaction, K_b, for a mat of a specific width may be evaluated using the following equation:

$$K_b = K_v \left(\frac{B+1}{2B}\right)^2 \text{ ; where B is the width of the mat measured in feet}$$

10.5 Building Slab-on-Grade

Buildings supported on shallow footings should have floor slabs designed by the project structural engineer based on the anticipated loading conditions. Building floor slabs should be underlain by compacted soil prepared in accordance with the recommendations presented in this report. We recommend that slabs be 5 inches thick or more and reinforced with No. 4 steel reinforcing bars placed 24 inches on-center (each way) or more placed near the mid-height of the slab. The placement of the reinforcement in the slab is vital for satisfactory performance. The floor slab and foundations should be tied together by extending the slab reinforcement into the footings. The slab should be underlain by a 4-inch-thick capillary break (consisting of either sand or crushed rock) overlain by a polyethylene vapor retarder (with a thickness of 10 mils or more). The steel reinforcements for the floor slab shall be placed on the vapor retarder using chairs, as appropriate. The vapor retarder is recommended in areas where moisture-sensitive floor coverings are anticipated. Soils underlying the slabs should be moisture-conditioned and compacted in accordance with the recommendations presented in this report prior to concrete placement. Joints should be constructed at intervals designed by the structural engineer to help reduce random cracking of the slab.

10.6 Lateral Earth Pressures for Pools and Other Underground Structures

Swimming pool walls bordered by concrete decking should be designed using an active earth pressure equivalent to a fluid having a unit weight of 45 pounds per cubic foot. If pool walls are bordered by landscaping, these walls should be designed using a lateral earth pressure of 62.4H pounds per square foot (where "H" equals the depth in feet below the ground surface). Pool walls should also be designed to resist lateral surcharge pressures imposed by any adjacent footings or structures in addition to the above lateral earth pressures.

Below-grade walls of the proposed improvements may be considered to be restrained from lateral displacement under static loading conditions. Lateral earth pressures for underground structures are presented on Figure 10.

10.7 Uplift Considerations

For structures that will extend below the water table, uplift forces will need to be considered. Due shallow historic high groundwater at the site, hydrostatic uplift forces should be evaluated for groundwater conditions at 7 feet below the ground surface. The resistance to uplift may then be taken as the weight of the structure. Additional uplift resistance may be considered including: 1) installation of tie-down anchors, or 2) extending the footing a selected distance outside the exterior walls of the structure (flanges) as shown on Figure 11.

10.8 Corrosion

The corrosion potential of the site soils was evaluated using the results of selected, representative samples obtained from the exploratory borings. Laboratory testing was performed to evaluate pH, minimum electrical resistivity, soluble sulfate, and chloride content. Soluble sulfate content is addressed in the following section of this report. The soil pH and minimum resistivity tests were performed in accordance with California Test Method (CT) 643. The test for chloride content of the soils was performed using CT 422. Sulfate testing was performed in general accordance with CT 417. The laboratory test results are presented in Appendix C.

The results of our corrosivity testing indicated pH levels ranging from 7.1 to 7.7, electrical resistivities ranging from approximately 1,219 to 4,673 ohm-cm, chloride contents ranging from approximately 20 to 45 ppm, and sulfate contents ranging from approximately 10 to 170 ppm (0.001 to 0.017 percent). Based on the laboratory test results and Caltrans corrosion criteria

(2021), the project site can be classified as a corrosive site. Caltrans considers a site to be corrosive if the minimum electrical resistivity is less than or equal to 1,500 ohm-cm, chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 1,500 ppm, or the pH is 5.5 or less.

10.9 Concrete Placement

Concrete in contact with soil or water that contains high concentrations of water-soluble sulfates can be subject to premature chemical and/or physical deterioration. Based on the CBC criteria, the potential for sulfate attack is negligible for water-soluble sulfate contents in soil ranging from 0.00 to 0.10 percent by weight and moderate for water-soluble sulfate contents ranging from 0.10 to 0.20 percent by weight. The potential for sulfate attack is severe for water-soluble sulfate contents ranging from 0.20 to 2.00 percent by weight and very severe for water-soluble sulfate contents over 2.00 percent by weight. The soil samples tested for this evaluation, using Caltrans Test Method 417, indicates water-soluble sulfate contents ranging from approximately 0.001 to 0.017 percent by weight (i.e., 10 to 170 ppm). Accordingly, the on-site soils are considered to have a negligible potential for sulfate attack. We recommend using Type II/V cement, water to cement ratio of 0.45, and concrete compressive strength of 4,500 psi for concrete in contact with soil.

In order to reduce the potential for shrinkage cracks in the concrete during curing, we recommend that the concrete for the proposed structures be placed with a slump of 4 inches based on ASTM C 143. The slump should be checked periodically at the site prior to concrete placement. We further recommend that concrete cover over reinforcing steel for foundations be provided in accordance with CBC (2019). The structural engineer should be consulted for additional concrete specifications.

10.10 Exterior Flatwork

Exterior walkways and hardscape for pedestrian use should be supported on 12 inches or more of low expansion potential subgrade soils with an expansion index of less than 50 and compacted to a relative compaction of 90 percent in accordance with ASTM D 1557. The moisture content of the subgrade soil should be maintained at slightly above the laboratory optimum until the concrete is placed. The exterior slabs should have a thickness of 4 inches or more and should be reinforced with No. 3 steel reinforcing bars placed at approximately 18 inches on center.

10.11 Preliminary Pavement Recommendations

Paved parking lots and fire access roads will be part of the proposed improvements for this project. Accordingly, the pavement sections were designed based on the site subgrade soil conditions and our laboratory testing. Laboratory testing was performed on representative subgrade soil samples and indicated R-values of approximately 29 and 59. Therefore, an R-value of 29 was used for the pavement design in accordance with Caltrans guidelines. We evaluated the structural pavement sections assuming traffic indices (TI) of 5.0, 6.0, and 7.0. Our AC pavement analysis was performed using the methodology outlined by the Highway Design Manual (Caltrans, 2019b). For the design of Portland Cement Concrete (PCC) pavements, we used the methodology presented in the Navy Pavement Design Manual (1979). The analysis assumes an approximate 20-year design life for the new pavements. Our preliminary pavement sections are presented below in Table 3.

Table 3 – Preliminary Flexible and Rigid Pavement Structural Sections

Traffic Index	Full Depth AC (inches)	AC over CAB or CMB (inches)	PCC (inches)
≤5.0	3 over 6	6	6
6.0	4½ over 6	7½	6½
7.0	4½ over 9	9	8½

Notes:
AC – Asphalt Concrete
CAB – Crushed Aggregate Base
CMB – Crushed Miscellaneous Base
PCC – Portland Cement Concrete, with a 28-day compressive strength of 2,500 psi

Prior to placement of aggregate base materials, we recommend that the top 12 inches of subgrade soils be scarified and compacted to a relative compaction of 95 percent in accordance with ASTM D 1557. Aggregate base material should conform to the latest specifications in Section 200 2.2 for crushed aggregate base or Section 200 2.4 for crushed miscellaneous base of the Greenbook and should be compacted to a relative compaction of 95 percent in accordance with ASTM D 1557. AC should conform to Section 203.6 of the Greenbook and should be compacted to a relative compaction of 95 percent in accordance with ASTM D 1557.

10.12 Drainage

Positive surface drainage is imperative for satisfactory site performance. Positive drainage should be provided and maintained to transport surface water away from foundations and off of the site. Positive drainage is defined as a slope of 2 percent or more for a distance of 5 feet or more. Runoff should then be channeled by the use of swales or pipes into a collective drainage system. Surface waters should not be allowed to pond adjacent to footings or pavement. Concentrated runoff should not be allowed to flow over pavement as this can result in early deterioration of the pavement. We recommend that the top levels of structures have roof drains and downspouts installed to collect runoff. Area drains for landscaped and paved areas are recommended.

11 CONSTRUCTION OBSERVATION

The recommendations provided in this report are based on our understanding of the proposed project and our evaluation of the data collected based on subsurface conditions disclosed by widely spaced exploratory borings. It is imperative that the geotechnical consultant checks the interpolated subsurface conditions during construction. We recommend that Ninyo & Moore review the project plans and specifications prior to construction. It should be noted that, upon review of these documents, some recommendations presented in this report may be revised or modified.

During construction we recommend that the duties of the geotechnical consultant include, but not be limited to:

- Observing site clearing and removal of existing improvements.
- Observing excavation bottoms and the placement and compaction of fill, including trench backfill.
- Evaluating imported materials prior to their use as fill.
- Performing field tests to evaluate fill compaction.
- Observing foundation excavations for bearing materials and cleaning prior to placement of reinforcing steel or concrete.
- Performing material testing services, including concrete compressive strength and steel tensile strength tests and inspections.

The recommendations provided in this report assume that Ninyo & Moore will be retained as the geotechnical consultant during the construction phase of this project. If another geotechnical consultant is selected, we request that the selected consultant indicate to the owner and to our firm in writing that our recommendations are understood and that they are in full agreement with our recommendations.

12 LIMITATIONS

The field evaluation, laboratory testing, and geotechnical analyses presented in this geotechnical report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be encountered during construction. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation will be performed upon request. Please also note that our evaluation was limited to assessment of the geotechnical aspects of the project, and did not include evaluation of structural issues, environmental concerns, or the presence of hazardous materials.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document.

This report is intended for design purposes only. It does not provide sufficient data to prepare an accurate bid by contractors. It is suggested that the bidders and their geotechnical consultant perform an independent evaluation of the subsurface conditions in the project areas. The independent evaluations may include, but not be limited to, review of other geotechnical reports prepared for the adjacent areas, site reconnaissance, and additional exploration and laboratory testing.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions. If geotechnical conditions different from those described in this report are encountered, our office should be notified, and additional recommendations, if warranted, will be provided upon request. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties’ sole risk.

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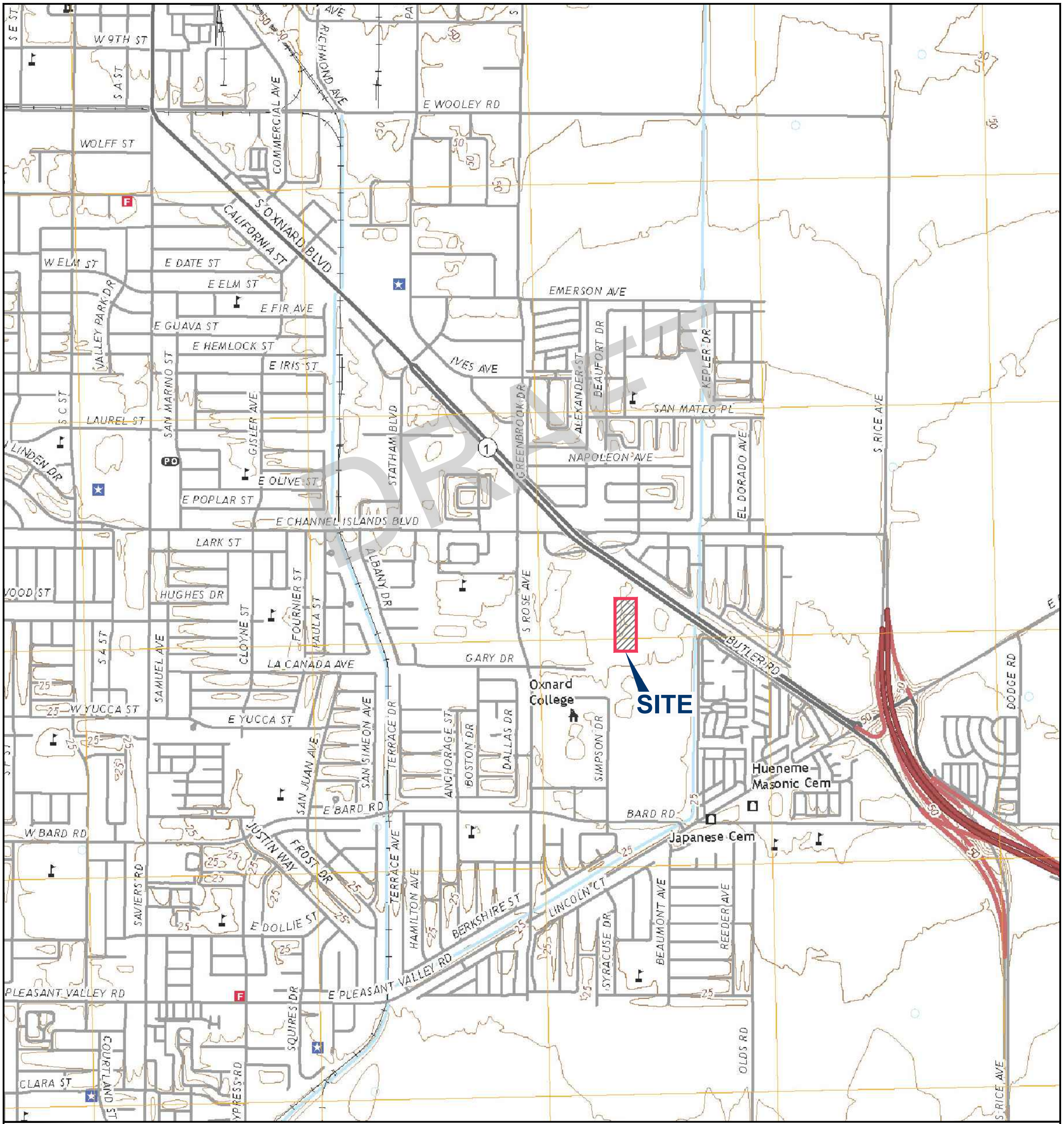
FIGURES



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NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE. I REFERENCE: USGS, 2022.

N

FEET

0 2,000 4,000

FIGURE 1

Ninyo & Moore

Geotechnical & Environmental Sciences Consultants

SITE LOCATION

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

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LEGEND

B-15 TD=6.5 ⊕ BORING; TD=TOTAL DEPTH IN FEET

ESB-17 TD=16.5 ⊕ BORING (EARTH SYSTEMS, 2007); TD=TOTAL DEPTH IN FEET

CPT-3 TD=21.5 △ CONE PENETRATION TEST; TD=TOTAL DEPTH IN FEET

ESCPT-5 TD=50.0 ▲ CONE PENETRATION TEST (EARTH SYSTEMS, 2007); TD=TOTAL DEPTH IN FEET

N

FEET
0 150 300

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE. I REFERENCE: GOOGLE EARTH AND ELS, 2022

2_211972001_BCPTL.dwg 08/23/2022 GK, JDP

FIGURE 2

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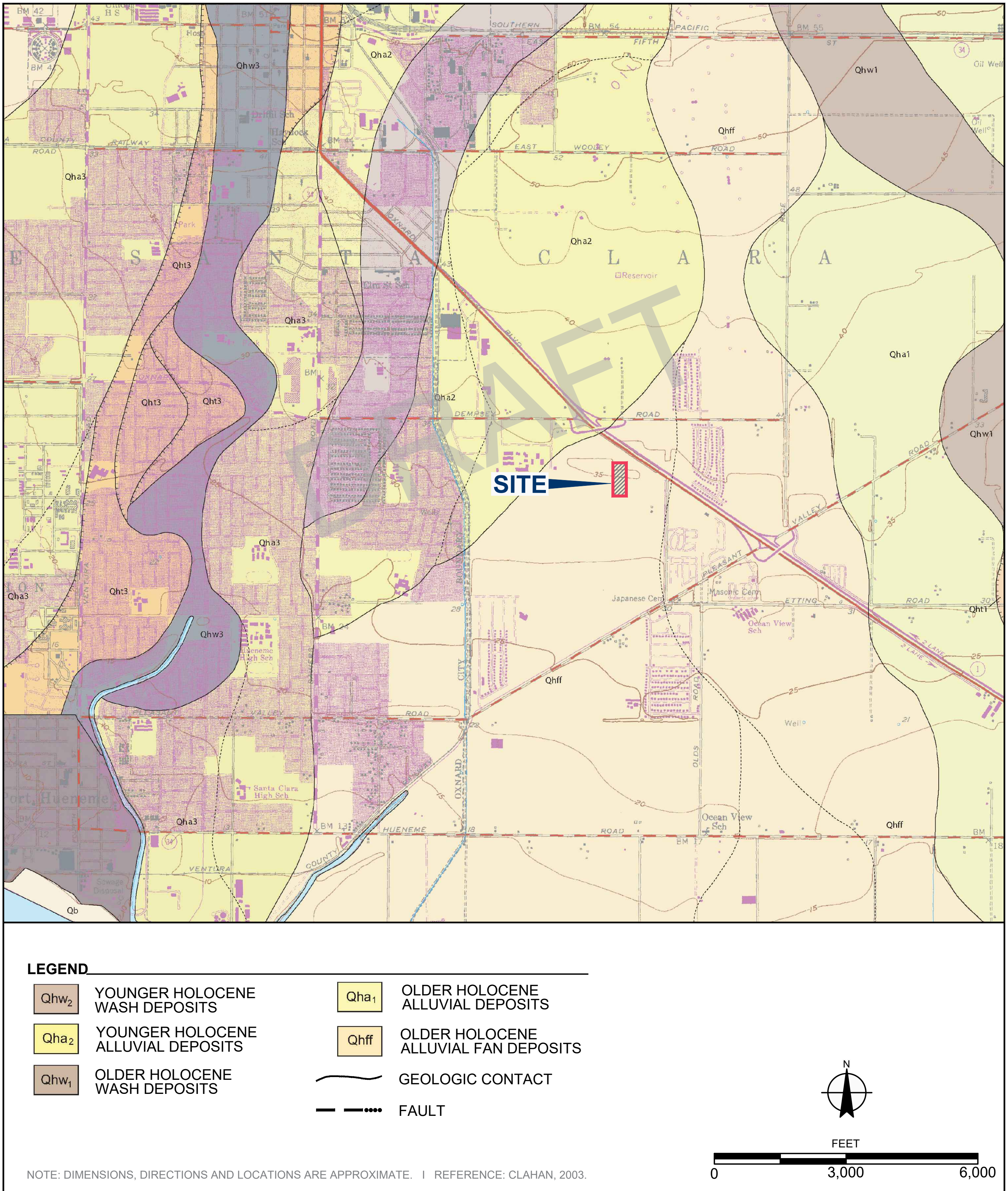
Geotechnical & Environmental Sciences Consultants

BORING AND CPT LOCATIONS

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

211972001 I 8/22



NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE. I REFERENCE: CLAHAN, 2003.

FIGURE 3

REGIONAL GEOLOGY

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

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Geotechnical & Environmental Sciences Consultants

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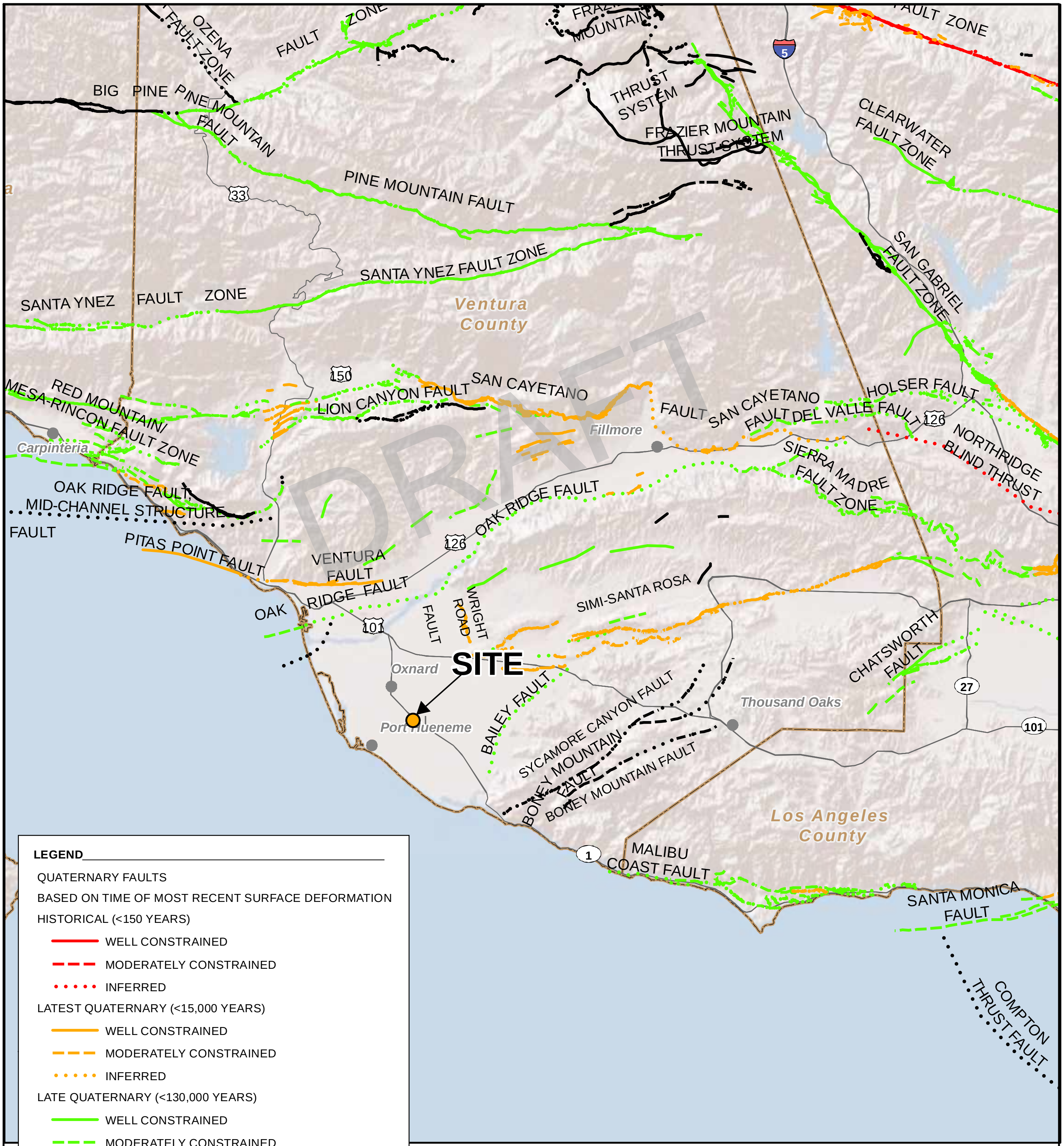

LEGEND

QUATERNARY FAULTS

BASED ON TIME OF MOST RECENT SURFACE DEFORMATION

HISTORICAL (<150 YEARS)

- ━━ WELL CONSTRAINED
- ╍╍ MODERATELY CONSTRAINED
- ⋯ INFERRED

LATEST QUATERNARY (<15,000 YEARS)

- ━━ WELL CONSTRAINED
- ╍╍ MODERATELY CONSTRAINED
- ⋯ INFERRED

LATE QUATERNARY (<130,000 YEARS)

- ━━ WELL CONSTRAINED
- ╍╍ MODERATELY CONSTRAINED
- ⋯ INFERRED

UNDIFFERENTIATED QUATERNARY(<1.6 MILLION YEARS)

- ━━ WELL CONSTRAINED
- ╍╍ MODERATELY CONSTRAINED
- ⋯ INFERRED

SOURCES: CALIFORNIA GEOLOGICAL SURVEY, ACCESSED AUGUST 02, 2022, AT: https://www.usgs.gov/natural-hazards/earthquake-hazards/faults; ESRI, 2021.

N

MILES

0 8 16

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

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FIGURE 4

FAULT LOCATIONS

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

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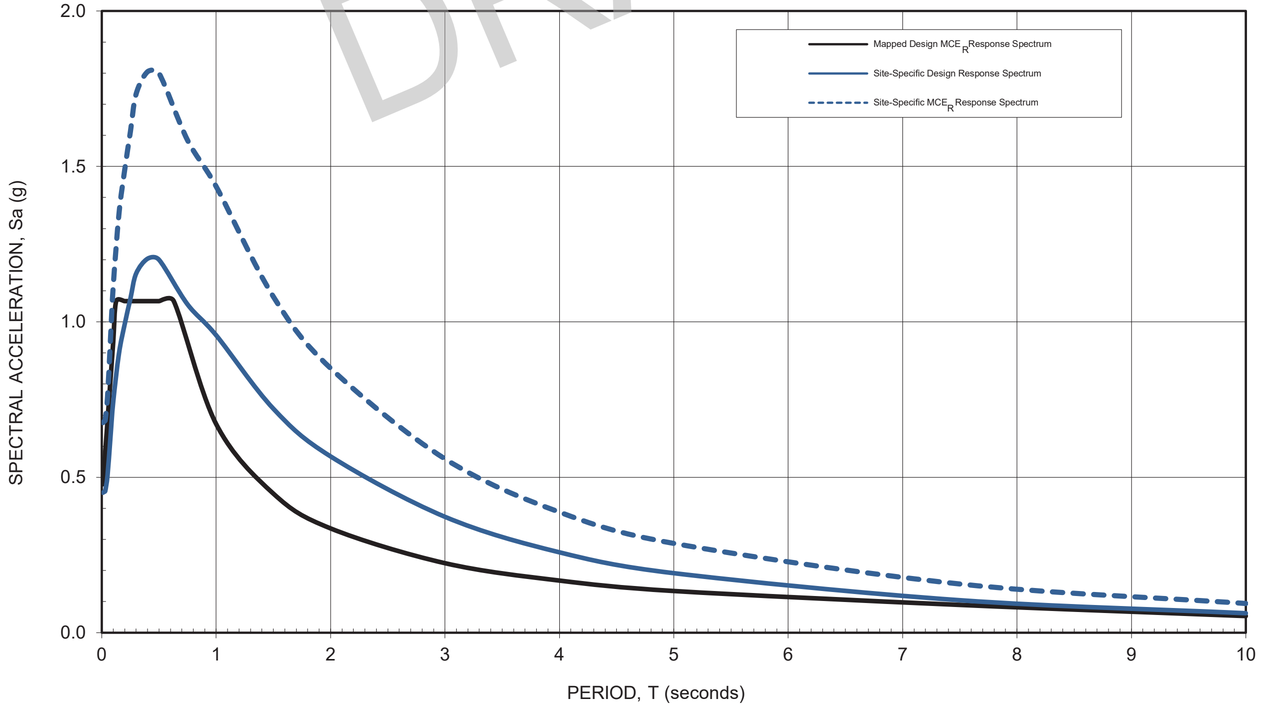
PERIOD (seconds)	SITE-SPECIFIC MCE_R RESPONSE SPECTRUM Sa (g)	SITE-SPECIFIC DESIGN RESPONSE SPECTRUM Sa (g)
0.010	0.676	0.450
0.020	0.680	0.453
0.030	0.683	0.455
0.050	0.758	0.505
0.075	0.938	0.625
0.100	1.115	0.743
0.150	1.347	0.898
0.200	1.488	0.992
0.250	1.611	1.074
0.300	1.733	1.155
0.400	1.805	1.203

PERIOD (seconds)	SITE-SPECIFIC MCE_R RESPONSE SPECTRUM Sa (g)	SITE-SPECIFIC DESIGN RESPONSE SPECTRUM Sa (g)
0.500	1.800	1.200
0.750	1.584	1.056
1.000	1.435	0.957
1.500	1.081	0.721
2.000	0.851	0.567
3.000	0.559	0.373
4.000	0.388	0.259
5.000	0.287	0.192
7.500	0.157	0.105
10.000	0.094	0.063

S_{DS} = 1.083 g	S_{D1} = 1.134 g	S_{MS} = 1.624 g	S_{M1} = 1.702 g	PGA_M = 0.687 g



NOTES:

1 The probabilistic ground motion spectral response accelerations are based on the risk-targeted Maximum Considered Earthquake (MCE_R) having a 2% probability of exceedance in 50 years in the maximum direction using the Chiou & Youngs (2014), Campbell & Bozorgnia (2014), Boore et al. (2014), and Abrahamson et al. (2014) attenuation relationships and the risk coefficients.

2 The deterministic ground motion spectral response accelerations are for the 84th percentile of the geometric mean values in the maximum direction using the Chiou & Youngs (2014), Campbell & Bozorgnia (2014), Boore et al. (2014), and Abrahamson et al. (2014) attenuation relationships for deep soil sites considering a Mw 7.4 event on the Oakridge fault zone located 9.4 kilometers from the site. It conforms with the lower bound limit per ASCE 7-16 Section 21.2.2.

3 The Site-Specific MCE_R Response Spectrum is the lesser of spectral ordinates of deterministic and probabilistic accelerations at each period per ASCE 7-16 Section 21.2.3. The Site-Specific Design Response Spectrum conforms with lower bound limit per ASCE 7-16 Section 21.3.

4 The Mapped Design MCE_RResponse Spectrum is computed from mapped spectral ordinates modified for Site Class D (stiff soil profile) per ASCE 7-16 Section 11.4. It is presented for the sake of comparison.

FIGURE 5

ACCELERATION RESPONSE SPECTRA

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OXNARD, CALIFORNIA

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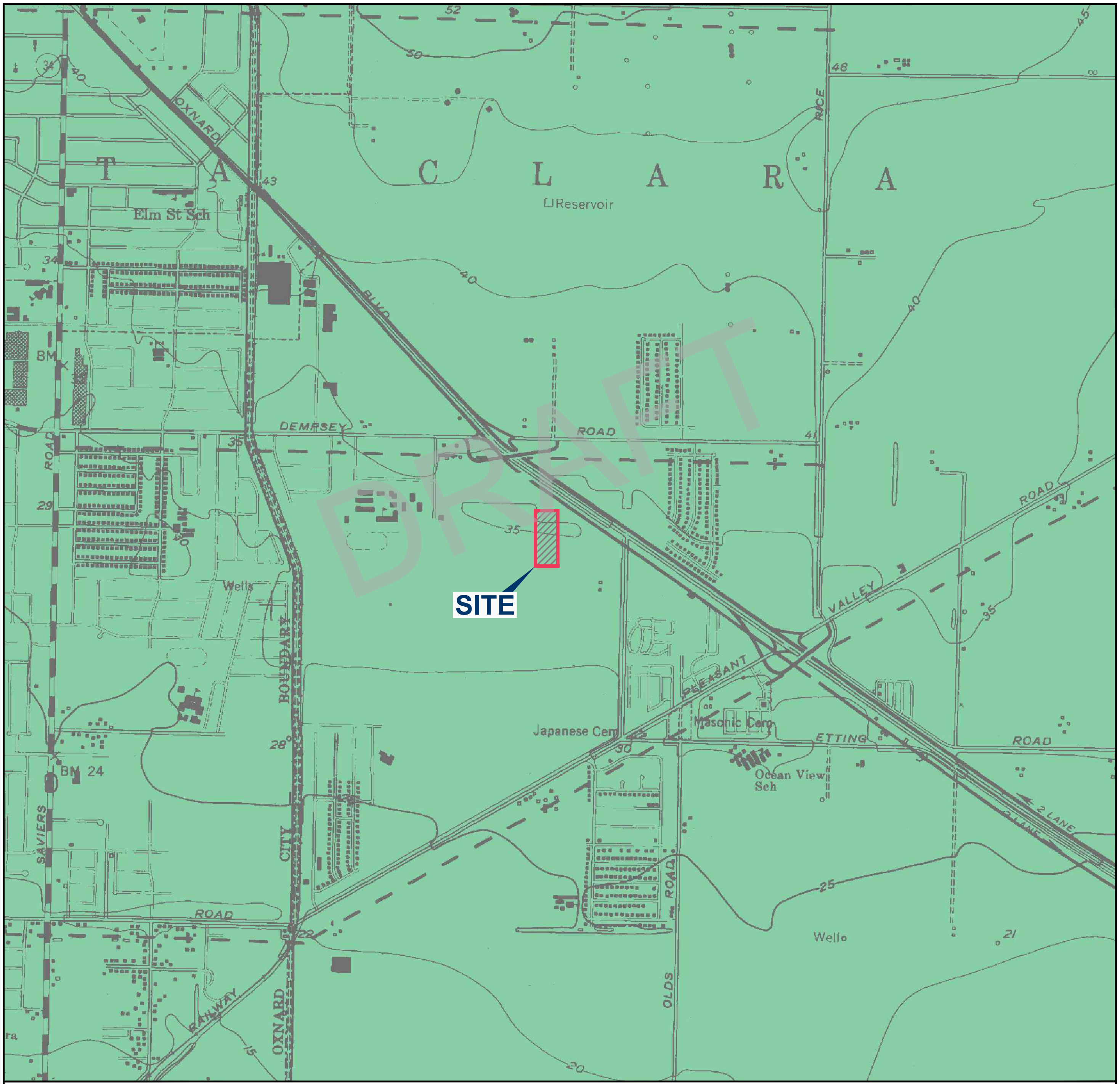

LEGEND

🟩 **LIQUEFACTION**
Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE. I REFERENCE: CGS, 2002b.

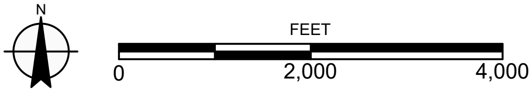

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FIGURE 6

SEISMIC HAZARD ZONES

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

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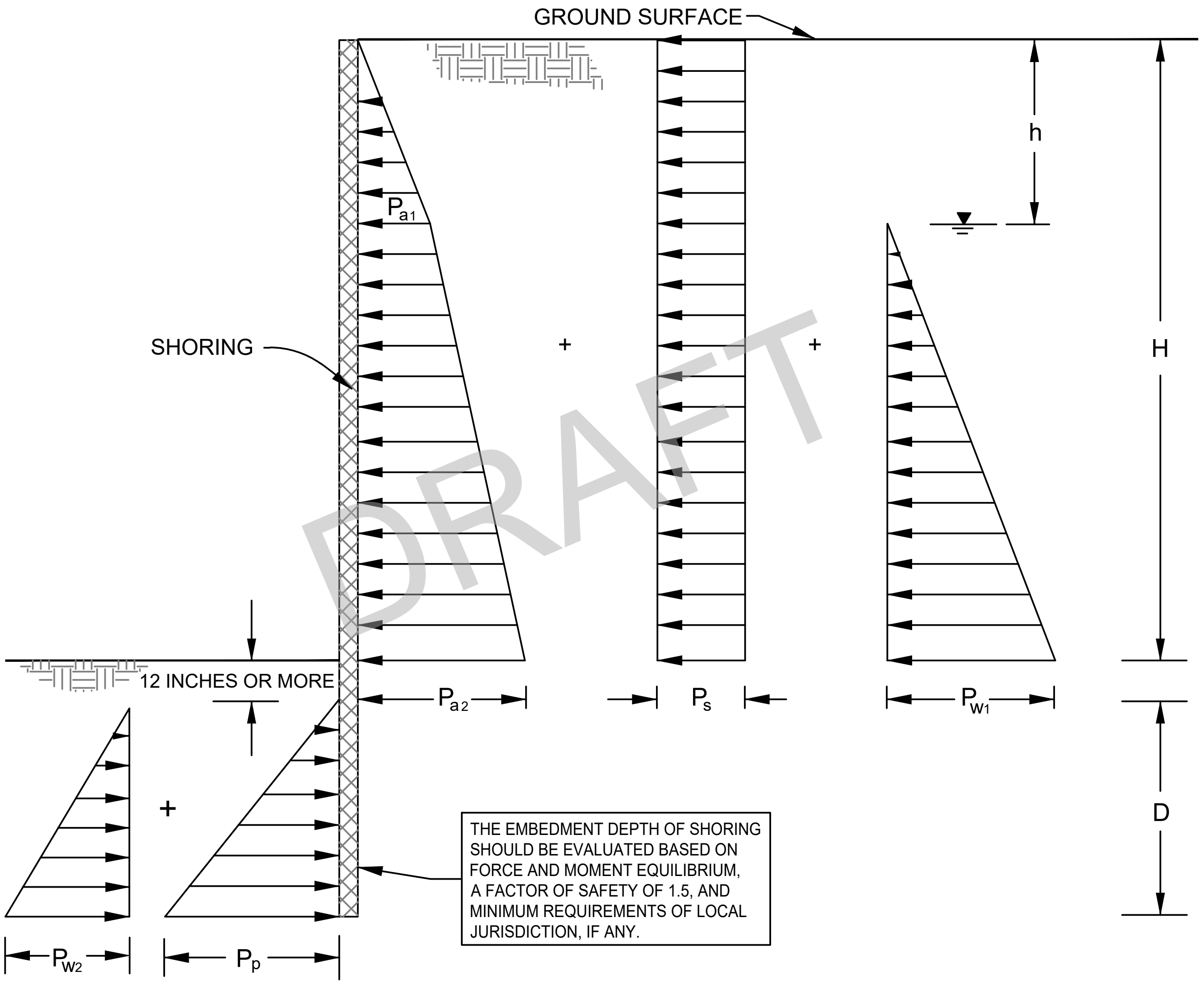

THE EMBEDMENT DEPTH OF SHORING SHOULD BE EVALUATED BASED ON FORCE AND MOMENT EQUILIBRIUM, A FACTOR OF SAFETY OF 1.5, AND MINIMUM REQUIREMENTS OF LOCAL JURISDICTION, IF ANY.

NOTES:

1. ACTIVE LATERAL EARTH PRESSURE, P_a
   $P_{a1} = 40h$ psf; $P_{a2} = P_{a1} + 21(H - h)$ psf
2. CONSTRUCTION TRAFFIC INDUCED SURCHARGE PRESSURE, P_s
   $P_s = 72$ psf
3. HYDROSTATIC PRESSURE, P_w
   $P_{w_1} = 62.4(H - h)$ psf
4. PASSIVE LATERAL EARTH PRESSURE, P_p
   $P_p = 180D$ psf
5. SURCHARGES FROM EXCAVATED SOIL OR CONSTRUCTION MATERIALS ARE NOT INCLUDED
6. H, h AND D ARE IN FEET
7. ═▼═ GROUNDWATER TABLE

NOT TO SCALE

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FIGURE 7

LATERAL EARTH PRESSURES FOR TEMPORARY CANTILEVERED SHORING BELOW GROUNDWATER

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OXNARD, CALIFORNIA

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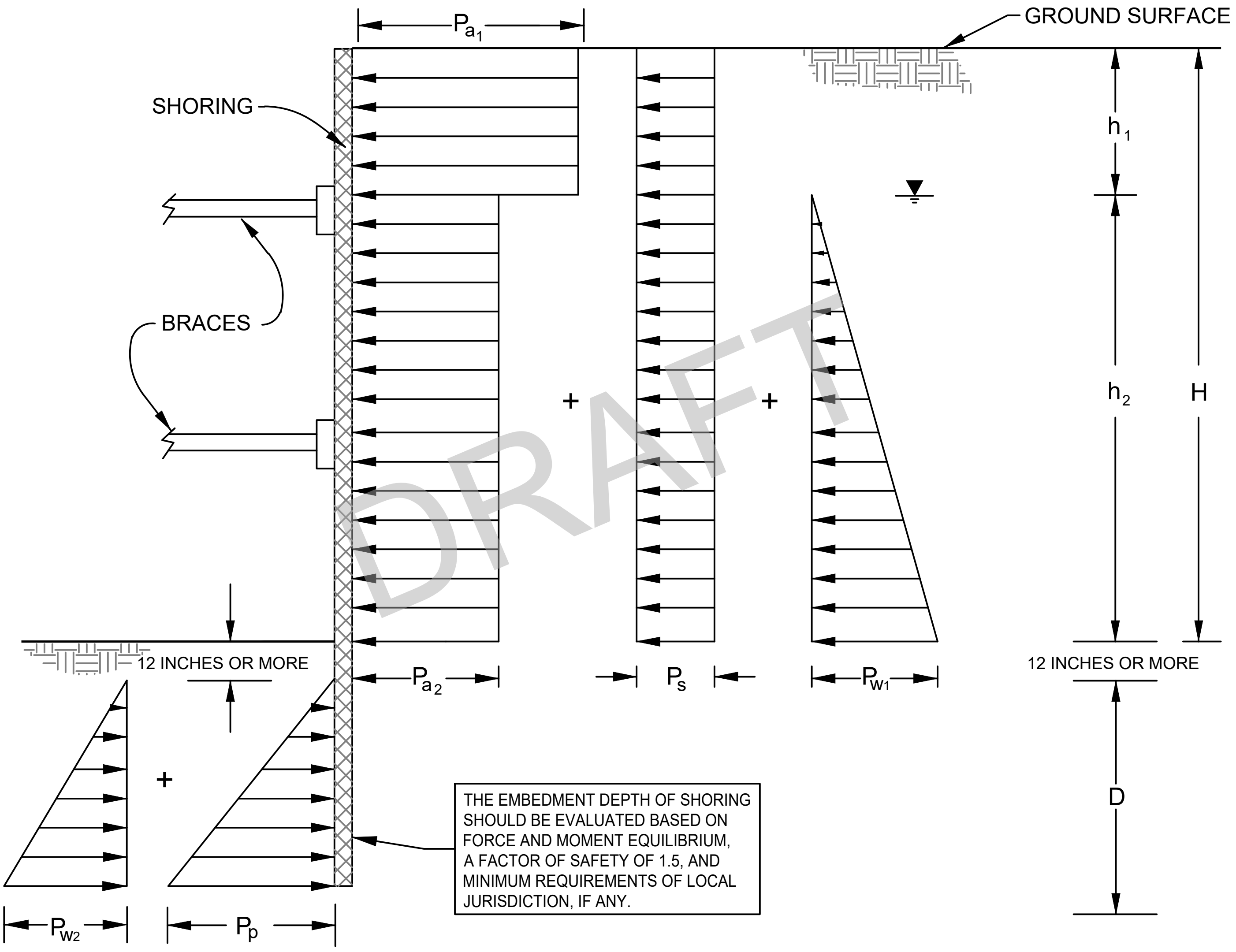

THE EMBEDMENT DEPTH OF SHORING SHOULD BE EVALUATED BASED ON FORCE AND MOMENT EQUILIBRIUM, A FACTOR OF SAFETY OF 1.5, AND MINIMUM REQUIREMENTS OF LOCAL JURISDICTION, IF ANY.

NOTES:

1. APPARENT LATERAL EARTH PRESSURES, P_{a1} AND P_{a2}
   $P_{a_1} = 26h_1$ psf
   $P_{a_2} = 14h_2$ psf
2. CONSTRUCTION TRAFFIC INDUCED SURCHARGE PRESSURE, P_s
   $P_s = 120$ psf
3. HYDROSTATIC PRESSURE, P_{w1} & P_{w2}
   $P_{w1} = 62.4(H - h)$ psf
   $P_{w2} = 62.4D$ psf
4. PASSIVE PRESSURE, P_p
   $P_p = 180D$ psf
5. SURCHARGES FROM EXCAVATED SOIL OR CONSTRUCTION MATERIALS ARE NOT INCLUDED
6. H, h_1, h_2 AND D ARE IN FEET
7. ▼ GROUNDWATER TABLE
8. P_{w2} IS APPLICABLE WHEN DEWATERING IS TO BE PERFORMED FROM INSIDE OR OUTSIDE OF THE EXCAVATION

NOT TO SCALE

FIGURE 8

LATERAL EARTH PRESSURES FOR BRACED EXCAVATION BELOW GROUNDWATER

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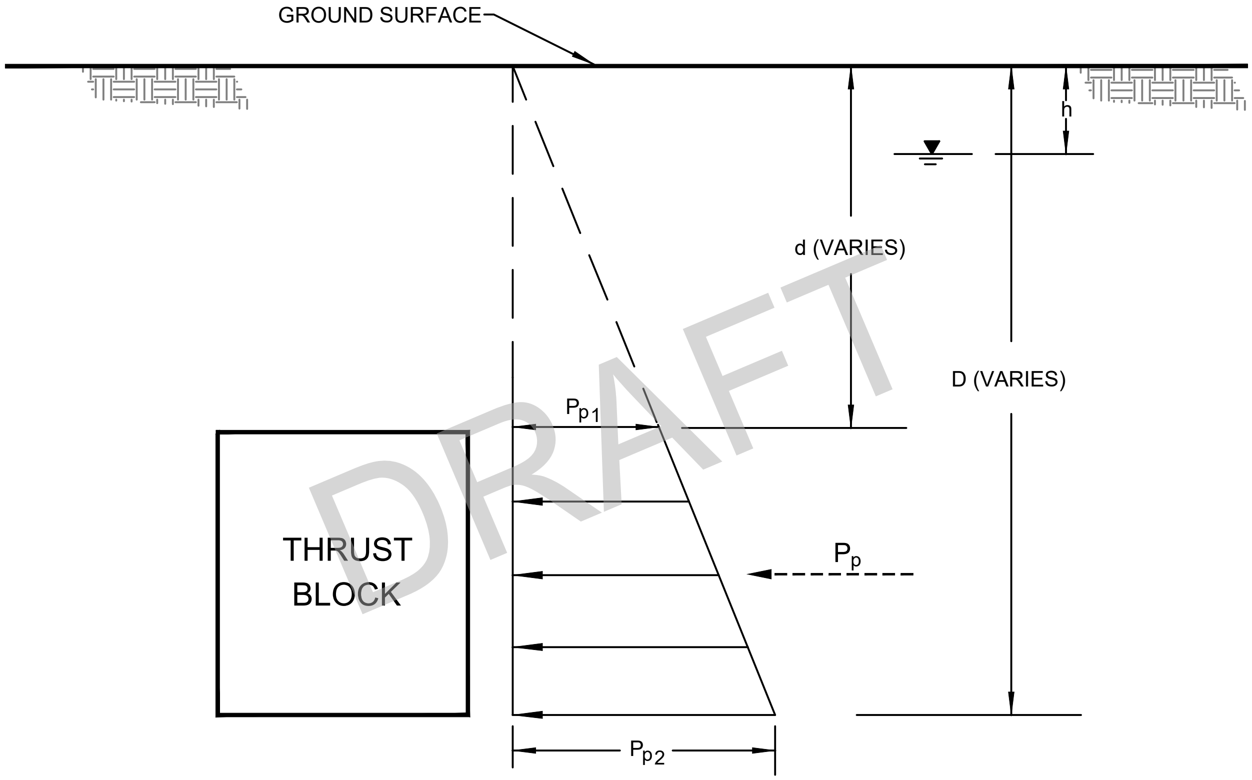

NOTES:

1. GROUNDWATER BELOW BLOCK
   $P_p = 180(D^2\text{-}d^2)$ lb/ft
2. GROUNDWATER ABOVE BLOCK
   $P_p = 1.5(D - d)[124.8h + 62.6(D+d)]$ lb/ft
3. ASSUMES BACKFILL IS GRANULAR MATERIAL
4. ASSUMES THRUST BLOCK IS ADJACENT TO COMPETENT MATERIAL
5. D, d AND h ARE IN FEET
6. ▼ GROUNDWATER TABLE

NOT TO SCALE

FIGURE 9

THRUST BLOCK LATERAL EARTH PRESSURE DIAGRAM

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OXNARD, CALIFORNIA

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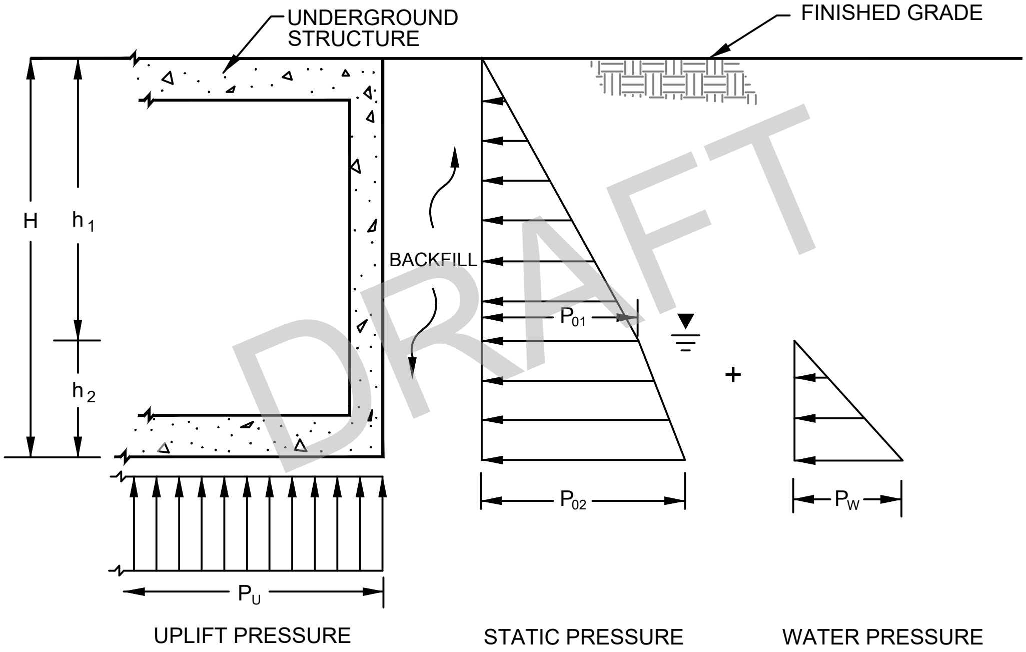
Geotechnical & Environmental Sciences Consultants



NOTES:

1. APPARENT LATERAL EARTH PRESSURES, P_{01} AND P_{02}
   $P_{01} = 60h_1$ psf
   $P_{02} = 60h_1 + 31h_2$ psf
2. HYDROSTATIC PRESSURE, P_w
   $P_w = 62.4h_2$ psf
3. UPLIFT PRESSURE, P_u
   $P_u = 62.4h_2$ psf
4. SURCHARGE PRESSURES CAUSED BY VEHICLES OR NEARBY STRUCTURES ARE NOT INCLUDED
5. H, h_1 AND h_2 ARE IN FEET
6. ⊻ GROUNDWATER TABLE

NOT TO SCALE

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FIGURE 10

LATERAL EARTH PRESSURES FOR UNDERGROUND STRUCTURES

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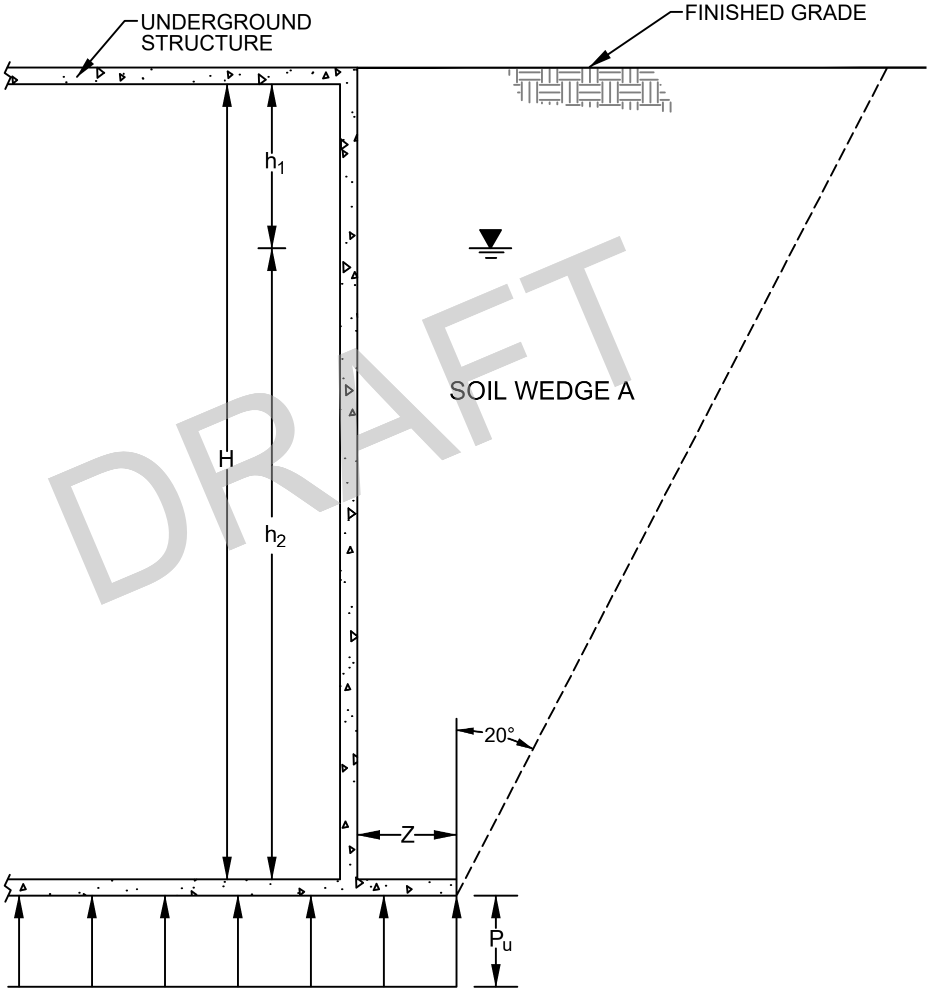

RESISTANCE TO UPLIFT = WEIGHT OF STRUCTURE + WEIGHT OF SOIL WEDGE A

NOTES:

1. UNIT WEIGHT OF SOILS, γ OR γ_b
   γ = 120 pcf ABOVE GROUNDWATER TABLE
   γ_b = 63 pcf BELOW GROUNDWATER TABLE
2. UPLIFT PRESSURE, P_u
   $P_u = 62.4\ h_2$ psf
3. H, Z, h_1 AND h_2 ARE IN FEET

NOT TO SCALE

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FIGURE 11

UPLIFT RESISTANCE DIAGRAM FOR UNDERGROUND STRUCTURES

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

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APPENDIX A

Boring Logs

APPENDIX A

BORING LOGS

Field Procedure for the Collection of Disturbed Samples

Disturbed soil samples were obtained in the field using the following methods.

Bulk Samples

Bulk samples of representative earth materials were obtained from the exploratory drilling. The samples were bagged and transported to the laboratory for testing.

The Standard Penetration Test (SPT) Sampler

Disturbed drive samples of earth materials were obtained by means of a Standard Penetration Test sampler. The sampler is composed of a split barrel with an external diameter of 2 inches and an unlined internal diameter of 1-3/8 inches. The sampler was driven into the ground 12 to 18 inches with a 140-pound hammer falling freely from a height of 30 inches in general accordance with ASTM D 1586. The blow counts were recorded for every 6 inches of penetration; the blow counts reported on the log are those for the last 12 inches of penetration. Soil samples were observed and removed from the sampler, bagged, sealed and transported to the laboratory for testing.

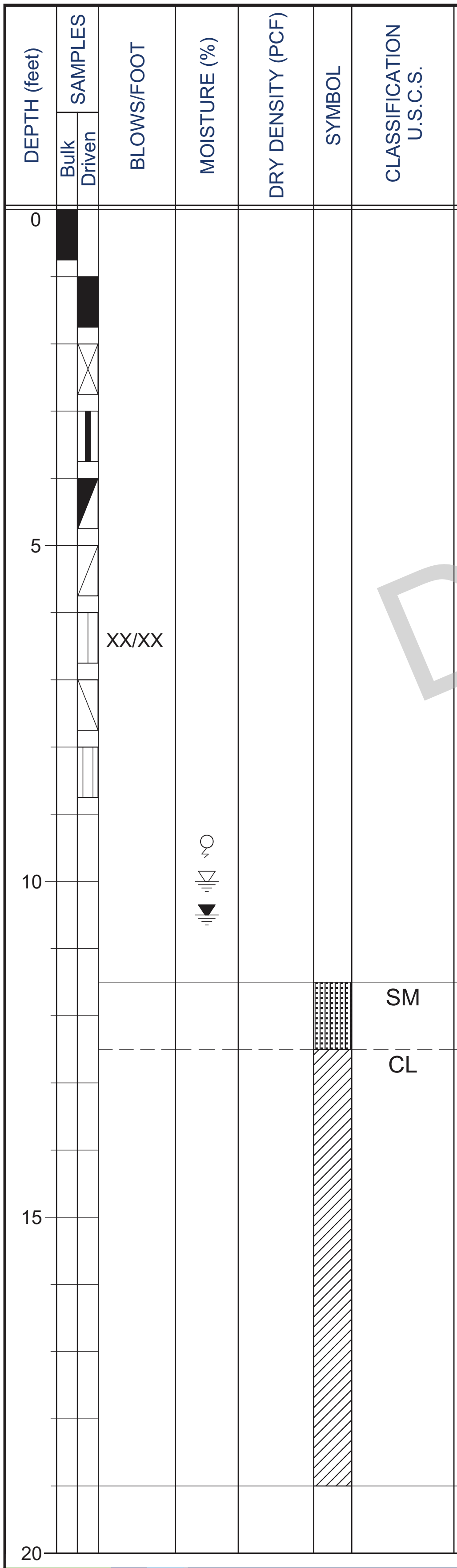
Field Procedure for the Collection of Relatively Undisturbed Samples

Relatively undisturbed soil samples were obtained in the field using the following method.

The Modified Split-Barrel Drive Sampler

The sampler, with an external diameter of 3 inches, was lined with 1-inch-long, thin brass rings with inside diameters of approximately 2.4 inches. The sample barrel was driven into the ground with the weight of a hammer in general accordance with ASTM D 3550. The driving weight was permitted to fall freely. The approximate length of the fall, the weight of the hammer, and the number of blows per foot of driving are presented on the boring logs as an index to the relative resistance of the materials sampled. The samples were removed from the sample barrel in the brass rings, sealed, and transported to the laboratory for testing.

BORING LOG EXPLANATION SHEET



Bulk sample.

Modified split-barrel drive sampler.

No recovery with modified split-barrel drive sampler.

Sample retained by others.

Standard Penetration Test (SPT).

No recovery with a SPT.

Shelby tube sample. Distance pushed in inches/length of sample recovered in inches.

No recovery with Shelby tube sampler.

Continuous Push Sample.

Seepage.
Groundwater encountered during drilling.
Groundwater measured after drilling.

<u>MAJOR MATERIAL TYPE (SOIL)</u>:
Solid line denotes unit change.

Dashed line denotes material change.

Attitudes: Strike/Dip
b: Bedding
c: Contact
j: Joint
f: Fracture
F: Fault
cs: Clay Seam
s: Shear
bss: Basal Slide Surface
sf: Shear Fracture
sz: Shear Zone
sbs: Shear Bedding Surface

The total depth line is a solid line that is drawn at the bottom of the boring.

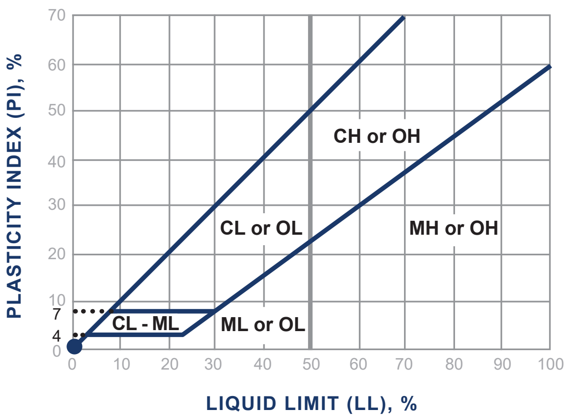
Soil Classification Chart Per ASTM D 2488

Primary Divisions			Secondary Divisions		
			Group Symbol		Group Name
COARSE-GRAINED SOILS more than 50% retained on No. 200 sieve	**GRAVEL** more than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVEL less than 5% fines	▨	GW	well-graded GRAVEL
			▨	GP	poorly graded GRAVEL
		GRAVEL with DUAL CLASSIFICATIONS 5% to 12% fines	▨	GW-GM	well-graded GRAVEL with silt
			▨	GP-GM	poorly graded GRAVEL with silt
			▨	GW-GC	well-graded GRAVEL with clay
			▨	GP-GC	poorly graded GRAVEL with clay
		GRAVEL with FINES more than 12% fines	▨	GM	silty GRAVEL
			▨	GC	clayey GRAVEL
			▨	GC-GM	silty, clayey GRAVEL
	SAND 50% or more of coarse fraction passes No. 4 sieve	CLEAN SAND less than 5% fines	▨	SW	well-graded SAND
			▨	SP	poorly graded SAND
		SAND with DUAL CLASSIFICATIONS 5% to 12% fines	▨	SW-SM	well-graded SAND with silt
			▨	SP-SM	poorly graded SAND with silt
			▨	SW-SC	well-graded SAND with clay
			▨	SP-SC	poorly graded SAND with clay
		SAND with FINES more than 12% fines	▨	SM	silty SAND
			▨	SC	clayey SAND
			▨	SC-SM	silty, clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 sieve	**SILT and CLAY** liquid limit less than 50%	INORGANIC	▨	CL	lean CLAY
			▨	ML	SILT
			▨	CL-ML	silty CLAY
		ORGANIC	▨	OL (PI > 4)	organic CLAY
			▨	OL (PI < 4)	organic SILT
	SILT and CLAY liquid limit 50% or more	INORGANIC	▨	CH	fat CLAY
			▨	MH	elastic SILT
		ORGANIC	▨	OH (plots on or above "A"-line)	organic CLAY
			▨	OH (plots below "A"-line)	organic SILT
	Highly Organic Soils		▨	PT	Peat

Grain Size

Description		Sieve Size	Grain Size	Approximate Size
Boulders		> 12"	> 12"	Larger than basketball-sized
Cobbles		3 - 12"	3 - 12"	Fist-sized to basketball-sized
Gravel	Coarse	3/4 - 3"	3/4 - 3"	Thumb-sized to fist-sized
	Fine	#4 - 3/4"	0.19 - 0.75"	Pea-sized to thumb-sized
Sand	Coarse	#10 - #4	0.079 - 0.19"	Rock-salt-sized to pea-sized
	Medium	#40 - #10	0.017 - 0.079"	Sugar-sized to rock-salt-sized
	Fine	#200 - #40	0.0029 - 0.017"	Flour-sized to sugar-sized
Fines		Passing #200	< 0.0029"	Flour-sized and smaller

Plasticity Chart



Apparent Density - Coarse-Grained Soil

Apparent Density	Spooling Cable or Cathead		Automatic Trip Hammer	
	SPT (blows/foot)	Modified Split Barrel (blows/foot)	SPT (blows/foot)	Modified Split Barrel (blows/foot)
Very Loose	≤ 4	≤ 8	≤ 3	≤ 5
Loose	5 - 10	9 - 21	4 - 7	6 - 14
Medium Dense	11 - 30	22 - 63	8 - 20	15 - 42
Dense	31 - 50	64 - 105	21 - 33	43 - 70
Very Dense	> 50	> 105	> 33	> 70

Consistency - Fine-Grained Soil

Consis-tency	Spooling Cable or Cathead		Automatic Trip Hammer	
	SPT (blows/foot)	Modified Split Barrel (blows/foot)	SPT (blows/foot)	Modified Split Barrel (blows/foot)
Very Soft	< 2	< 3	< 1	< 2
Soft	2 - 4	3 - 5	1 - 3	2 - 3
Firm	5 - 8	6 - 10	4 - 5	4 - 6
Stiff	9 - 15	11 - 20	6 - 10	7 - 13
Very Stiff	16 - 30	21 - 39	11 - 20	14 - 26
Hard	> 30	> 39	> 20	> 26

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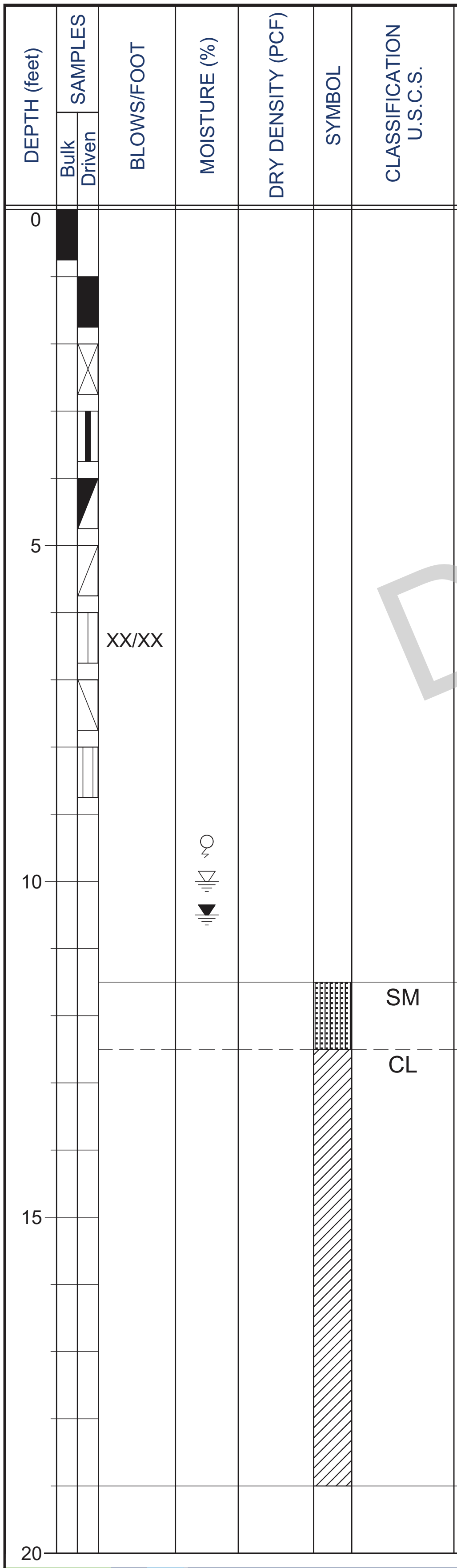
USCS METHOD OF SOIL CLASSIFICATION

BORING LOG EXPLANATION SHEET



Bulk sample.

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sbs: Shear Bedding Surface

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BORING LOG

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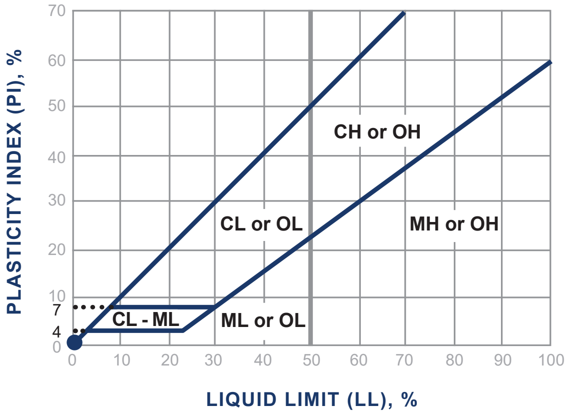
COARSE-GRAINED SOILS more than 50% retained on No. 200 sieve	**GRAVEL** more than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVEL less than 5% fines	GW	well-graded GRAVEL
			GP	poorly graded GRAVEL
		GRAVEL with DUAL CLASSIFICATIONS 5% to 12% fines	GW-GM	well-graded GRAVEL with silt
			GP-GM	poorly graded GRAVEL with silt
			GW-GC	well-graded GRAVEL with clay
			GP-GC	poorly graded GRAVEL with clay
		GRAVEL with FINES more than 12% fines	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND 50% or more of coarse fraction passes No. 4 sieve	CLEAN SAND less than 5% fines	SW	well-graded SAND
			SP	poorly graded SAND
		SAND with DUAL CLASSIFICATIONS 5% to 12% fines	SW-SM	well-graded SAND with silt
			SP-SM	poorly graded SAND with silt
			SW-SC	well-graded SAND with clay
			SP-SC	poorly graded SAND with clay
		SAND with FINES more than 12% fines	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 sieve	**SILT and CLAY** liquid limit less than 50%	INORGANIC	CL	lean CLAY
			ML	SILT
			CL-ML	silty CLAY
		ORGANIC	OL (PI > 4)	organic CLAY
			OL (PI < 4)	organic SILT
	SILT and CLAY liquid limit 50% or more	INORGANIC	CH	fat CLAY
			MH	elastic SILT
		ORGANIC	OH (plots on or above "A"-line)	organic CLAY
			OH (plots below "A"-line)	organic SILT
	Highly Organic Soils		PT	Peat

Grain Size

Description		Sieve Size	Grain Size	Approximate Size
Boulders		> 12"	> 12"	Larger than basketball-sized
Cobbles		3 - 12"	3 - 12"	Fist-sized to basketball-sized
Gravel	Coarse	3/4 - 3"	3/4 - 3"	Thumb-sized to fist-sized
	Fine	#4 - 3/4"	0.19 - 0.75"	Pea-sized to thumb-sized
Sand	Coarse	#10 - #4	0.079 - 0.19"	Rock-salt-sized to pea-sized
	Medium	#40 - #10	0.017 - 0.079"	Sugar-sized to rock-salt-sized
	Fine	#200 - #40	0.0029 - 0.017"	Flour-sized to sugar-sized
Fines		Passing #200	< 0.0029"	Flour-sized and smaller

Plasticity Chart



Apparent Density - Coarse-Grained Soil

Apparent Density	Spooling Cable or Cathead		Automatic Trip Hammer	
	SPT (blows/foot)	Modified Split Barrel (blows/foot)	SPT (blows/foot)	Modified Split Barrel (blows/foot)
Very Loose	≤ 4	≤ 8	≤ 3	≤ 5
Loose	5 - 10	9 - 21	4 - 7	6 - 14
Medium Dense	11 - 30	22 - 63	8 - 20	15 - 42
Dense	31 - 50	64 - 105	21 - 33	43 - 70
Very Dense	> 50	> 105	> 33	> 70

Consistency - Fine-Grained Soil

Consis-tency	Spooling Cable or Cathead		Automatic Trip Hammer	
	SPT (blows/foot)	Modified Split Barrel (blows/foot)	SPT (blows/foot)	Modified Split Barrel (blows/foot)
Very Soft	< 2	< 3	< 1	< 2
Soft	2 - 4	3 - 5	1 - 3	2 - 3
Firm	5 - 8	6 - 10	4 - 5	4 - 6
Stiff	9 - 15	11 - 20	6 - 10	7 - 13
Very Stiff	16 - 30	21 - 39	11 - 20	14 - 26
Hard	> 30	> 39	> 20	> 26

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USCS METHOD OF SOIL CLASSIFICATION

DATE DRILLED 7/12/22 BORING NO. B-1

GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)

DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"

SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■					▥	ML	ALLUVIUM: Dark brown, moist, firm to stiff, sandy SILT.
		■	15	28.6	90.3	▥		Very stiff.
								Total Depth = 6.5 feet. Groundwater not encountered during drilling. Backfilled with on-site soils on 7/12/22.
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Notes:
Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.

The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.

DATE DRILLED 7/12/22 BORING NO. B-2
GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1
METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)
DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"
SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■					▥	SM	ALLUVIUM: Brown, moist, loose, silty SAND; trace gravel.
		■	6	31.1	84.6	▨	CL	Olive brown, moist, firm, lean CLAY; trace sand.
								Total Depth = 6.5 feet. Groundwater not encountered during drilling. Backfilled with on-site soils on 7/12/22.
10								Notes: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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FIGURE A- 2

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA
211972001 | 8/22

DATE DRILLED 7/12/22 BORING NO. B-3

GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)

DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"

SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■					▥	SM	ALLUVIUM: Brown, moist, loose, silty SAND; trace gravel.
		■	6	37.3	81.6	▨	CL	Olive brown, moist, firm, lean CLAY; trace sand.
								Total Depth = 6.5 feet. Groundwater not encountered during drilling. Backfilled with on-site soils on 7/12/22. Notes: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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FIGURE A- 3

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

DATE DRILLED 7/12/22 BORING NO. B-4
GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1
METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)
DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"
SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■					▨	SM	ALLUVIUM: Brown, moist, loose to medium dense, silty SAND with gravel.
								Total Depth = 5 feet. Groundwater not encountered during drilling. In-situ percolation testing performed on 7/14/22. Backfilled with on-site soils on 7/14/22. Notes: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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FIGURE A- 4

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DATE DRILLED 7/12/22 BORING NO. B-5

GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)

DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"

SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■						SM	FILL: Brown to dark brown, moist, loose to medium dense, silty SAND with gravel.
							SM	ALLUVIUM: Brown, moist, loose, silty SAND.
		■	10	8.5	87.7			
		■	14					
							SP	Brown, moist, medium dense, poorly graded SAND.
10		■	25	5.0	101.3			
		■	16	▼				@ 13': Groundwater measured approximately 24 hours after drilling completed.
				▽				@14': Groundwater encountered during drilling; wet.
		■	51	17.7	109.1			Brown to light brown; dense.
20		◣	47					Light to brown to grayish brown; very dense.
		■	18				ML	Grayish brown, wet, very stiff, sandy SILT.
30		◣	8					Grayish brown to olive brown; stiff; trace calcium carbonate.
								Total Depth = 31.5 feet. Groundwater encountered during drilling at approximately 14 feet. Groundwater measured at approximately 13 feet approximately 24 hours after drilling completed. Backfilled with bentonite cement grout and capped with on-site soils on 7/13/22. Notes: Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is
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DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED 7/12/22 BORING NO. B-5 GROUND ELEVATION 35' ± (MSL) SHEET 2 OF 2 METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling) DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30" SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS **DESCRIPTION/INTERPRETATION**
40								not sufficiently accurate for preparing construction bids and design documents.
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70								
80								

DATE DRILLED 7/12/22 BORING NO. B-6
GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 2
METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)
DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"
SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■						ML	ALLUVIUM: Brown, moist, stiff, sandy SILT.
		■	7	33.2	84.2			Brown to olive brown.
							SM	Brown, moist, medium dense, silty SAND; trace gravel.
10		■	19	7.7	78.3			
				▽				@12': Groundwater encountered during drilling; wet.
				▼			SP	Brown to light brown, wet, medium dense, poorly graded SAND. @ 13': Groundwater measured approximately 24 hours after drilling complete.
	■	☒	12					Loose.
20		◣	13					Grayish brown to light brown; trace gravel.
	■	☒	13				ML	Gray to grayish brown, wet, stiff, SILT; trace sand; trace calcium carbonate.
30		◣	10					Stiff.
40								Total Depth = 31.5 feet. Groundwater encountered during drilling at approximately 12 feet. Groundwater measured at approximately 13 feet approximately 24 hours after drilling complete. Backfilled with bentonite cement grout and capped with on-site soils on 7/12/22. Notes: Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DATE DRILLED 7/12/22 BORING NO. B-6 GROUND ELEVATION 35' ± (MSL) SHEET 2 OF 2 METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling) DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30" SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS DESCRIPTION/INTERPRETATION
40								not sufficiently accurate for preparing construction bids and design documents.
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70								
80								

DATE DRILLED 7/12/22 BORING NO. B-7
GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1
METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)
DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"
SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■						SM	FILL: Brown to dark brown, moist, loose to medium dense, silty SAND with gravel.
		■	14	13.2	102.0		ML	ALLUVIUM: Brown, moist, very stiff, sandy SILT.
10		■	18	7.4	93.7			
				▼				@ 13.5': Groundwater measured approximately 2 hours after drilling completed.
		■	24	▽				@16': Groundwater encountered during drilling; wet.
20		◤	12					
								Total Depth = 21.5 feet. Groundwater encountered during drilling at approximately 16 feet. Groundwater measured at approximately 13.5 feet approximately 2 hours after drilling completed. Backfilled with bentonite cement grout and capped with on-site soils on 7/12/22. Notes: Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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FIGURE A- 9

DATE DRILLED 7/13/22 BORING NO. B-8
GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1
METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)
DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"
SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■						SM	FILL: Brown to dark brown, moist, loose to medium dense, silty SAND with gravel.
							SP	ALLUVIUM: Brown, moist, loose, poorly graded SAND.
		■	13	11.7	93.1			
10		■	12	3.4	85.4			
				▼ ▽				@ 14.5': Groundwater measured after drilling completed. @15': Groundwater encountered during drilling; wet. Medium dense.
		■	20					
20		◣	33					Dense.
30								
40								

Total Depth = 21.5 feet.
Groundwater encountered during drilling at approximately 15 feet.
Groundwater measured at approximately 14.5 feet after drilling completed.
Backfilled with bentonite cement grout and capped with on-site soils on 7/13/22.

Notes:
Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.

The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.

FIGURE A- 10

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DATE DRILLED 7/12/22 BORING NO. B-9

GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)

DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"

SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	FILL: Brown to dark brown, moist, loose to medium dense, silty SAND with gravel.
			12	13.3	99.0		SM	ALLUVIUM: Brown, moist, loose, silty SAND.
10			20	8.4	90.6			Medium dense.
								@14': Groundwater encountered during drilling and measured after drilling completed; wet.
							SP	Brown to light brown, wet, medium dense, poorly graded SAND.
			32					
20			53					Very dense.
								Total Depth = 21.5 feet. Groundwater encountered during drilling at approximately 14 feet. Groundwater measured at approximately 14 feet after drilling completed. Backfilled with bentonite cement grout and capped with on-site soils on 7/12/22.
								Notes: Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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FIGURE A- 11

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SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

DATE DRILLED 7/13/22 BORING NO. B-10

GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)

DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"

SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■					▥	SM	FILL: Brown to dark brown, moist, loose to medium dense, silty SAND.
		■	13	8.6	96.9	▥	SM	ALLUVIUM: Brown, moist, loose, silty SAND.
						▥		Trace gravel.
10		■	19	7.6	98.1	░	SP	Brown to light brown, moist, medium dense, poorly graded SAND.
				▽		░		@14': Groundwater encountered during drilling and approximately 2 hours after drilling completed; wet.
		■	17			░		
20		◣	28			░		Dense.
								Total Depth = 21.5 feet. Groundwater encountered during drilling at approximately 14 feet. Groundwater measured at approximately 14 feet approximately 2 hours after drilling completed. Backfilled with bentonite cement grout and capped with on-site soils on 7/13/22. Notes: Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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FIGURE A- 12

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OXNARD, CALIFORNIA
211972001 | 8/22

DATE DRILLED 7/13/22 BORING NO. B-11

GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)

DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"

SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■						SM	FILL: Brown to dark brown, moist, loose to medium dense, silty SAND with gravel.
	■	☒	24					
							CL	ALLUVIUM: Brown to olive brown, moist, stiff, sandy lean CLAY.
							SP-SM	Brown to light brown, moist, medium dense, poorly graded SAND with silt.
10		■	20	5.0	101.8			
				▽ ▼				@15': Groundwater encountered during drilling; wet.
		■	22	20.8	106.5		SP	Brown to light brown, wet, medium dense, poorly graded SAND. @ 15.5': Groundwater measured approximately 1 hour after drilling completed.
20		◣	23					Dense; interbedded clay layers.
30								
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Total Depth = 21.5 feet.
Groundwater encountered during drilling at approximately 15 feet.
Groundwater measured at approximately 15.5 feet approximately 1 hour after drilling completed.
Backfilled with bentonite cement grout and capped with on-site soils on 7/13/22.

Notes:
Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.

The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.

DATE DRILLED 7/13/22 BORING NO. B-12
GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1
METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)
DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"
SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■						SM	FILL: Brown to dark brown, moist, loose to medium dense, silty SAND with gravel.
		■	14	15.9	99.1		ML	ALLUVIUM: Brown, moist, loose, sandy SILT.
	■						CL	Brown to olive brown, moist, stiff, sandy lean CLAY.
10		■	17	20.6	94.9			
							SM	Brown to light brown, moist, medium dense, silty SAND.
				▼				@ 14': Groundwater measured approximately 2 hours after drilling completed. @14.5': Groundwater encountered during drilling; wet.
		■	25					Medium dense.
							SP-SM	Brown to light brown, moist, medium dense, poorly graded SAND with silt.
20		◣	10					
								Total Depth = 21.5 feet. Groundwater encountered during drilling at approximately 14.5 feet. Groundwater measured at approximately 14 feet approximately 2 hours after drilling completed. Backfilled with bentonite cement grout and capped with on-site soils on 7/13/22.
								Notes: Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report.
								The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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FIGURE A- 14

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SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

DATE DRILLED 7/13/22 BORING NO. B-13
GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1
METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)
DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"
SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0							SM	FILL: Brown to dark brown, moist, loose to medium dense, silty SAND with gravel.
			16	14.0	90.0		ML	ALLUVIUM: Brown, moist, medium dense, sandy SILT.
							SC	Brown, moist, medium dense, clayey SAND.
10			14	3.9	96.9		SP	Brown to light brown, moist, loose, poorly graded SAND.
				▼				@ 14': Groundwater measured approximately 2 hours after drilling completed.
			31	▽				@15': Groundwater encountered during drilling. Wet; medium dense.
20			12					Interbedded clay layers.
30								Total Depth = 21.5 feet. Groundwater encountered during drilling at approximately 15 feet. Groundwater measured at approximately 14 feet approximately 2 hours after drilling completed. Backfilled with bentonite cement grout and capped with on-site soils on 7/13/22. Notes: Groundwater may rise to a level higher than that measured in borehole due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
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FIGURE A- 15

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SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

DATE DRILLED 7/12/22 BORING NO. B-14

GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1

METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)

DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"

SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■					▨	SM	FILL: Brown to dark brown, moist, loose to medium dense, silty SAND with gravel.
	■					▨	SM	ALLUVIUM: Brown, moist, loose, silty SAND.
		■	10	7.6	90.3	▨		
								Total Depth = 6.5 feet. Groundwater not encountered during drilling. Backfilled with on-site soils on 7/13/22. Notes: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
10								
20								
30								
40								

FIGURE A- 16

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Geotechnical & Environmental Sciences Consultants

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA
211972001 | 8/22

DATE DRILLED 7/13/222 BORING NO. B-15
GROUND ELEVATION 35' ± (MSL) SHEET 1 OF 1
METHOD OF DRILLING 8" Hollow-Stem Auger (MR Drilling)
DRIVE WEIGHT 140 lbs (Auto. Trip Hammer) DROP 30"
SAMPLED BY CHV LOGGED BY CHV REVIEWED BY JRS

DEPTH (feet)	SAMPLES Bulk	SAMPLES Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0	■					▥	SM	FILL: Brown to dark brown, moist, loose to medium dense, silty SAND with gravel.
		■	10	9.7	90.8	▥	ML	ALLUVIUM: Brown, moist, loose, sandy SILT.
								Total Depth = 6.5 feet. Groundwater not encountered during drilling. Backfilled with on-site soils on 7/13/22.
10								
20								
30								
40								

Notes:
Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.

The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.

FIGURE A- 17

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA
211972001 | 8/22

APPENDIX B

Cone Penetration Test Logs

SUMMARY

OF

CONE PENETRATION TEST DATA

Project:

ELS/South Oxnard Aquatic Center Geo
3250 S. Rose Avenue
Oxnard, CA
July 13, 2022

Prepared for:

Ms. Jennifer Schmidt
Ninyo & Moore
475 Goddard, Ste 200
Irvine, CA 92618-4605
Office (949) 753-7070 / Fax (949) 753-7071

Prepared by:

KEHOE TESTING & ENGINEERING
5415 Industrial Drive
Huntington Beach, CA 92649-1518
Office (714) 901-7270 / Fax (714) 901-7289
www.kehoetesting.com

TABLE OF CONTENTS

SUMMARY

OF

CONE PENETRATION TEST DATA

1. INTRODUCTION

This report presents the results of a Cone Penetration Test (CPT) program carried out for the ELS/South Oxnard Aquatic Center Geo project located at 3250 S. Rose Avenue in Oxnard, California. The work was performed by Kehoe Testing & Engineering (KTE) on July 13, 2022. The scope of work was performed as directed by Ninyo & Moore personnel.

2. SUMMARY OF FIELD WORK

The fieldwork consisted of performing CPT soundings at three locations to determine the soil lithology. A summary is provided in **TABLE 2.1**.

LOCATION	DEPTH OF CPT (ft)	COMMENTS/NOTES:
CPT-1	100	
CPT-2	100	
CPT-3	100	

TABLE 2.1 - Summary of CPT Soundings

3. FIELD EQUIPMENT & PROCEDURES

The CPT soundings were carried out by **KTE** using an integrated electronic cone system manufactured by Vertek. The CPT soundings were performed in accordance with ASTM standards (D5778). The cone penetrometers were pushed using a 30-ton CPT rig. The cone used during the program was a 15 cm^2 cone with a cone net area ratio of 0.83. The following parameters were recorded at approximately 2.5 cm depth intervals:

- Cone Resistance (qc)
- Sleeve Friction (fs)
- Dynamic Pore Pressure (u)
- Inclination
- Penetration Speed

At location CPT-3, shear wave measurements were obtained at approximately various depths. The shear wave is generated using an air-actuated hammer, which is located inside the front jack of the CPT rig. The cone has a triaxial geophone, which recorded the shear wave signal generated by the air hammer.

The above parameters were recorded and viewed in real time using a laptop computer. Data is stored at the KTE office for up to 2 years for future analysis and reference. A complete set of baseline readings was taken prior to each sounding to determine temperature shifts and any zero load offsets. Monitoring base line readings ensures that the cone electronics are operating properly.

4. CONE PENETRATION TEST DATA & INTERPRETATION

The Cone Penetration Test data is presented in graphical form in the attached Appendix. These plots were generated using the CPeT-IT program. Penetration depths are referenced to ground surface. The soil behavior type on the CPT plots is derived from the attached CPT SBT plot (Robertson, “Interpretation of Cone Penetration Test…”, 2009) and presents major soil lithologic changes. The stratigraphic interpretation is based on relationships between cone resistance (qc), sleeve friction (fs), and penetration pore pressure (u). The friction ratio (Rf), which is sleeve friction divided by cone resistance, is a calculated parameter that is used along with cone resistance to infer soil behavior type. Generally, cohesive soils (clays) have high friction ratios, low cone resistance and generate excess pore water pressures. Cohesionless soils (sands) have lower friction ratios, high cone bearing and generate little (or negative) excess pore water pressures.

The CPT data files have also been provided. These files can be imported in CPeT-IT (software by GeoLogismiki) and other programs to calculate various geotechnical parameters.

It should be noted that it is not always possible to clearly identify a soil type based on qc, fs and u. In these situations, experience, judgement and an assessment of the pore pressure data should be used to infer the soil behavior type.

If you have any questions regarding this information, please do not hesitate to call our office at (714) 901-7270.

Sincerely,

KEHOE TESTING & ENGINEERING

Steven P. Kehoe
President

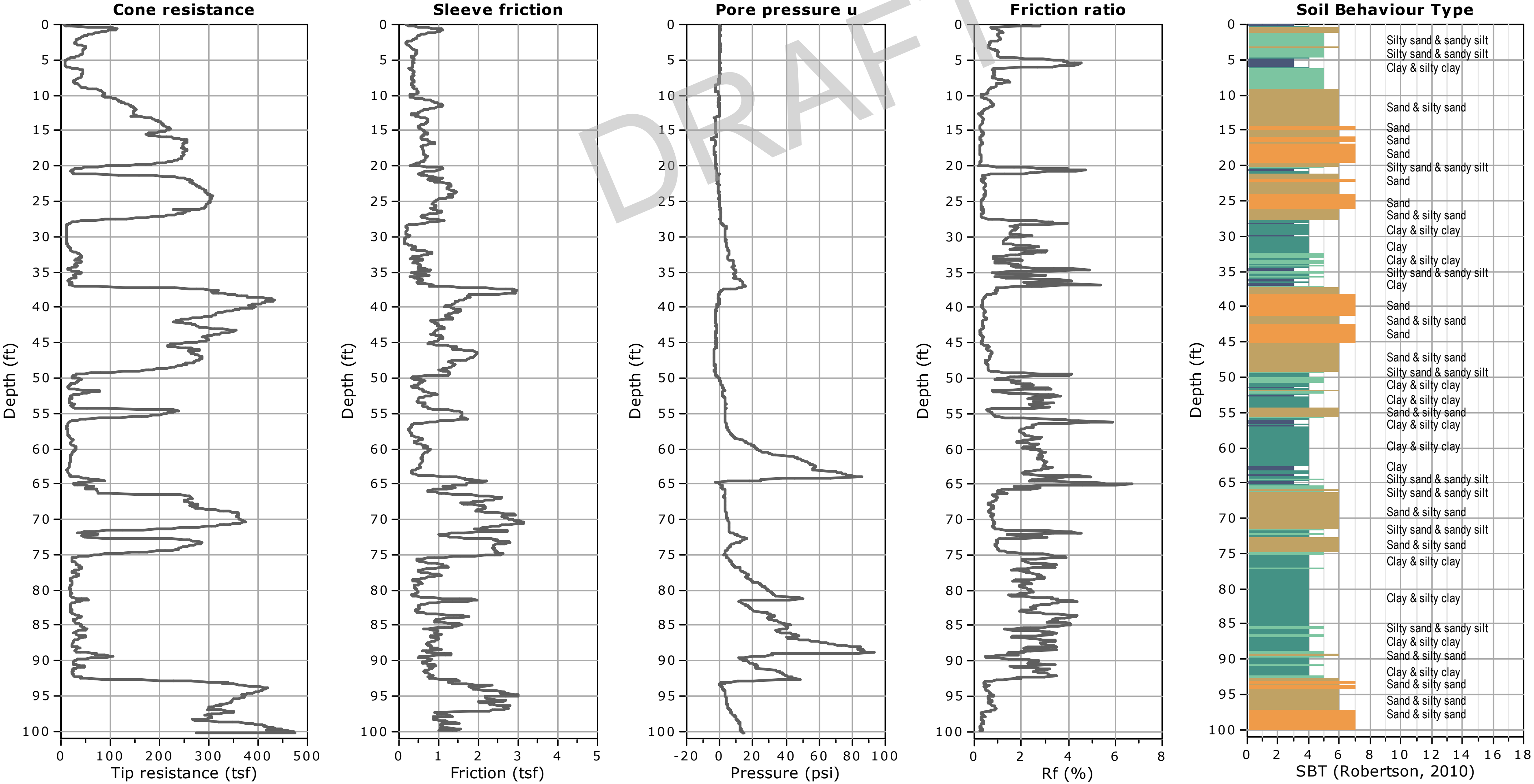
07/18/22-sw-4199

APPENDIX

Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Ninyo & Moore - ELS/South Oxnard Aquatic Center**
Location: **3250 S. Rose Ave, Oxnard, CA**

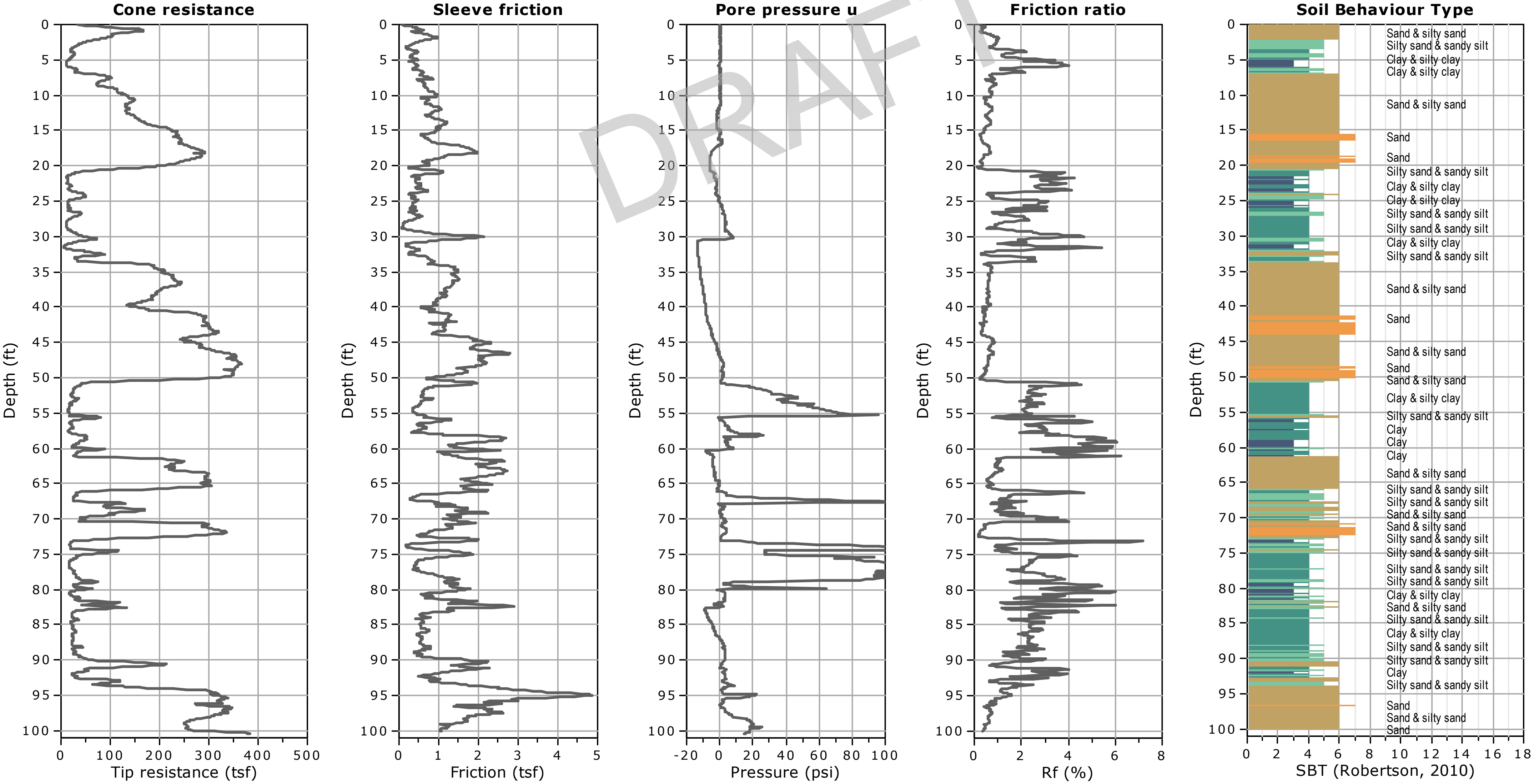
CPT-1
Total depth: 100.27 ft, Date: 7/13/2022



Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

Project: **Ninyo & Moore - ELS/South Oxnard Aquatic Center**
Location: **3250 S. Rose Ave, Oxnard, CA**

CPT-2
Total depth: 100.40 ft, Date: 7/13/2022



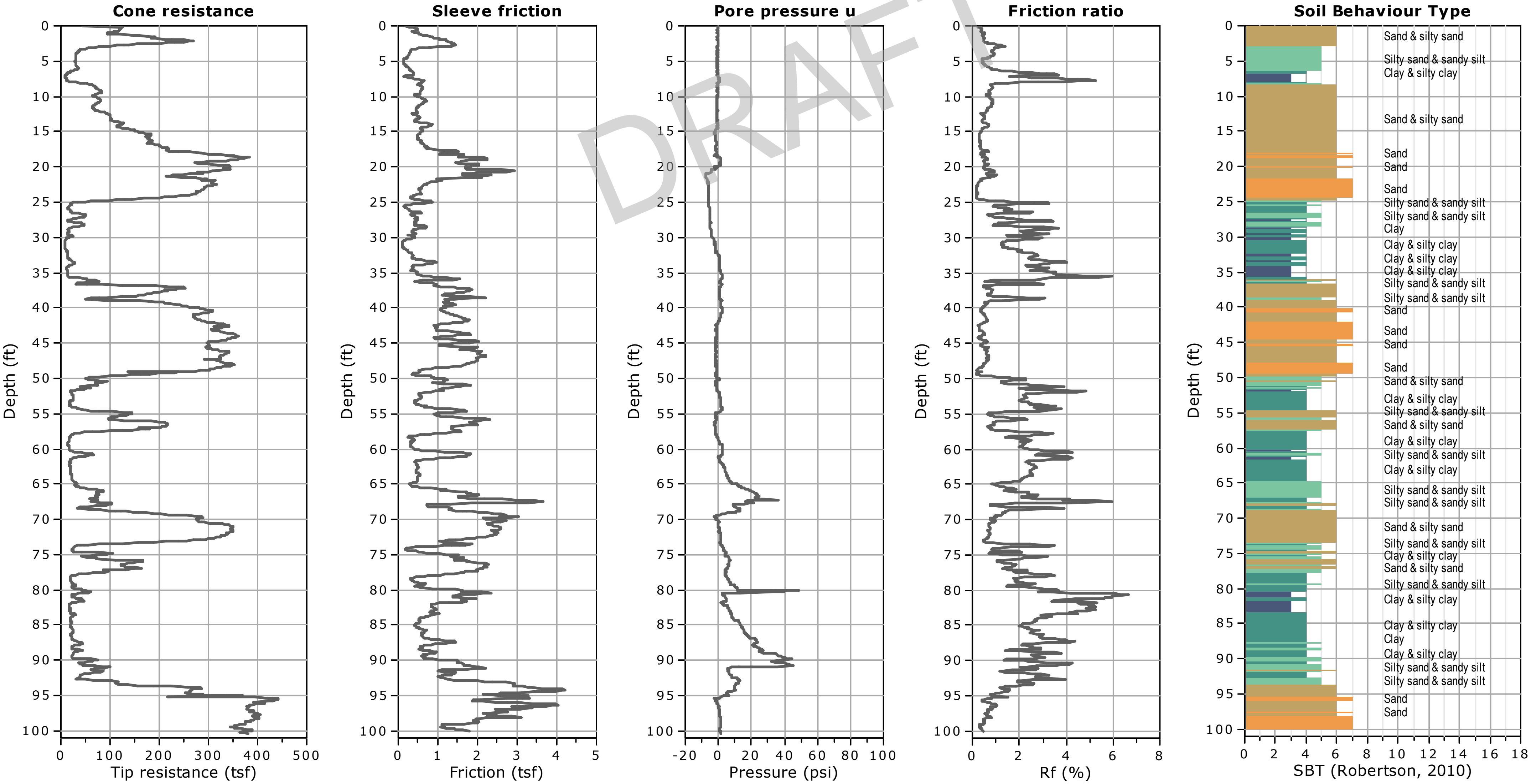
Kehoe Testing and Engineering
714-901-7270
steve@kehoetesting.com
www.kehoetesting.com

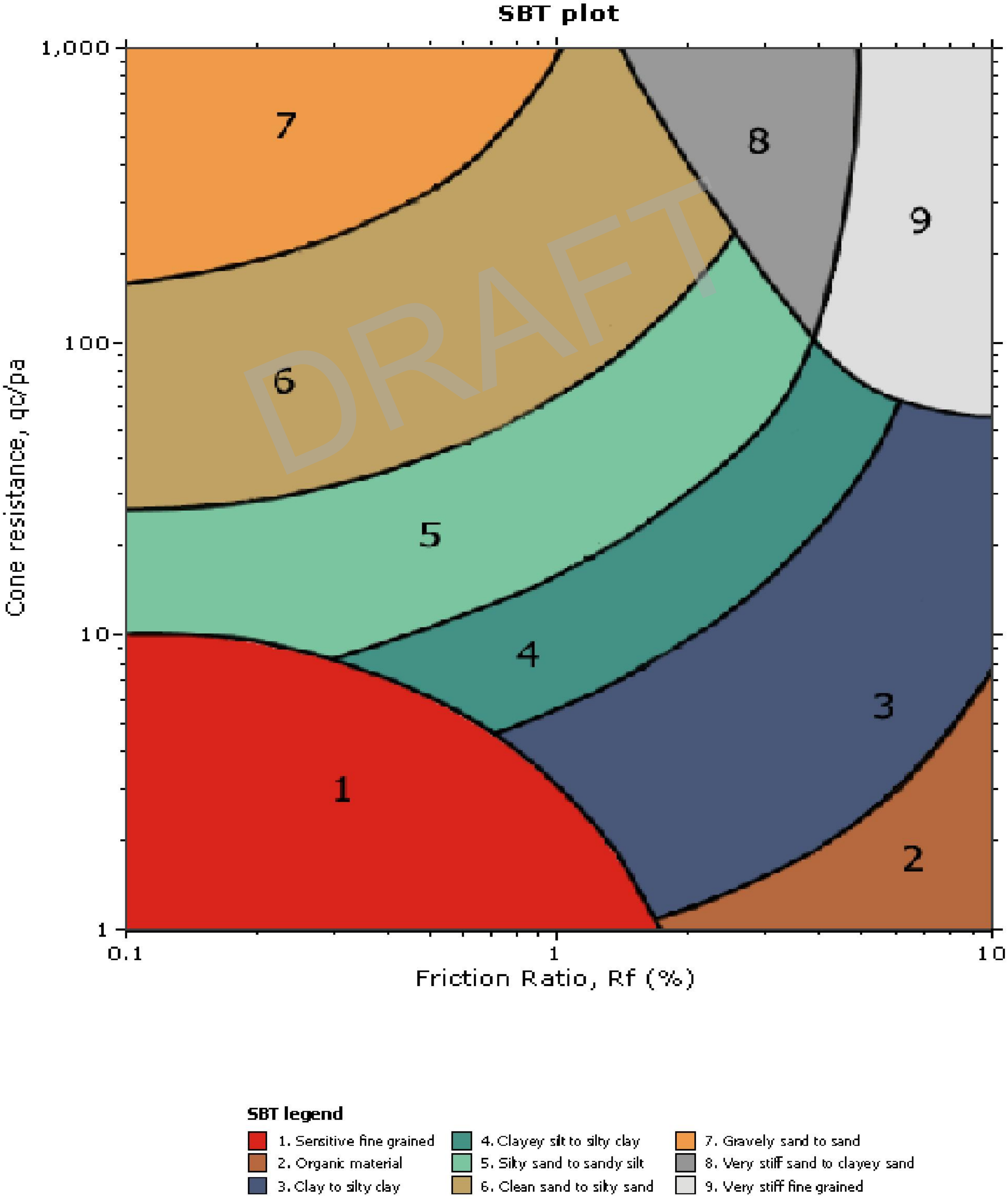
Project: **Ninyo & Moore - ELS/South Oxnard Aquatic Center**

Location: **3250 S. Rose Ave, Oxnard, CA**

CPT-3

Total depth: 100.33 ft, Date: 7/13/2022




SBT plot
1,000
100
10
1
Cone resistance, qc/pa
0.1
1
10
Friction Ratio, Rf (%)
7
8
9
6
5
4
3
1
2
DRAFT
SBT legend
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Ninyo & Moore
ELS/South Oxnard Aquatic Center
Oxnard, CA

CPT Shear Wave Measurements

Location	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
CPT-3	5.02	4.02	4.49	5.44	825	
	10.01	9.01	9.23	13.60	679	581
	20.05	19.05	19.15	26.12	733	793
	30.02	29.02	29.09	45.48	640	513
	40.03	39.03	39.08	62.40	626	591
	50.07	49.07	49.11	74.28	661	844
	60.01	59.01	59.04	87.66	674	742
	70.01	69.01	69.04	97.20	710	1048
	80.02	79.02	79.05	114.36	691	583
	90.03	89.03	89.05	128.04	696	732
	100.00	99.00	99.02	136.60	725	1164

Shear Wave Source Offset - 2 ft

S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)

APPENDIX C

Laboratory Testing

APPENDIX C

LABORATORY TESTING

Classification

Soils were visually and texturally classified in accordance with the Unified Soil Classification System (USCS) in general accordance with ASTM D 2488. Soil classifications are indicated on the logs of the exploratory borings in Appendix A.

In-Place Moisture and Density Tests

The moisture content and dry density of relatively undisturbed samples obtained from the exploratory borings were evaluated in general accordance with ASTM D 2937. The test results are presented on the logs of the exploratory borings in Appendix A.

200 Wash

An evaluation of the percentage of particles finer than the No. 200 sieve in selected soil samples was performed in general accordance with ASTM D 1140. The results of the tests are presented on Figures C-1 and C-2.

Atterberg Limits

Tests were performed on selected representative fine-grained soil samples to evaluate the liquid limit, plastic limit, and plasticity index in general accordance with ASTM D 4318. The test results were utilized to evaluate the soil classification in accordance with the USCS. The test results and classifications are shown on Figure C-3.

Consolidation Tests

Consolidation test was performed on selected relatively undisturbed soil samples in general accordance with ASTM D 2435. The samples were inundated during testing to represent adverse field conditions. The percent of consolidation for each load cycle was recorded as a ratio of the amount of vertical compression to the original height of the sample. The results of the tests are summarized on Figures C-4 and C-5.

Direct Shear Tests

Direct shear tests were performed on relatively undisturbed samples in general accordance with ASTM D 3080 to evaluate the shear strength characteristics of the selected materials. The samples were inundated during shearing to represent adverse field conditions. The results are shown on Figures C-6 and C-7.

Soil Corrosivity Tests

Soil pH, and minimum resistivity testing was performed on representative samples in general accordance with CT 643. The chloride content of the selected samples was evaluated in general accordance with CT 422. The sulfate content of the selected samples was evaluated in general accordance with CT 417. The test results are presented on Figure C-8.

R-Value

The resistance value, or R-value, for site soils was evaluated in general accordance with California Test (CT) 301. Samples were prepared and evaluated for exudation pressure and expansion pressure. The equilibrium R-value is reported as the lesser or more conservative of the two calculated results. The test results are shown on Figure C-9.

SAMPLE LOCATION	SAMPLE DEPTH (ft)	DESCRIPTION	PERCENT PASSING NO. 4	PERCENT PASSING NO. 200	USCS (TOTAL SAMPLE)
B-1	0.0-5.0	SANDY SILT	94	60	ML
B-4	0.0-5.0	SILTY SAND WITH GRAVEL	84	32	SM
B-5	5.0-6.5	SILTY SAND	100	16	SM
B-5	10.0-11.5	POORLY GRADED SAND	100	4	SP
B-5	15.0-16.5	POORLY GRADED SAND	100	4	SP
B-6	0.0-5.0	SANDY SILT	98	58	ML
B-6	10.0-11.5	SILTY SAND	96	15	SM
B-7	5.0-6.5	SANDY SILT	100	55	ML
B-8	10.0-11.5	POORLY GRADED SAND	100	3	SP

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 1140

FIGURE C-1

NO. 200 SIEVE ANALYSIS TEST RESULTS

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OXNARD, CALIFORNIA

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Geotechnical & Environmental Sciences Consultants

SAMPLE LOCATION	SAMPLE DEPTH (ft)	DESCRIPTION	PERCENT PASSING NO. 4	PERCENT PASSING NO. 200	USCS (TOTAL SAMPLE)
B-9	10.0-11.5	SILTY SAND	100	13	SM
B-10	15.0-16.5	POORLY GRADED SAND	100	4	SP
B-11	10.0-11.5	POORLY GRADED SAND WITH SILT	100	6	SP-SM
B-12	11.0-11.5	SILTY SAND	99	48	SM
B-12	20.0-21.5	POORLY GRADED SAND WITH SILT	100	5	SP-SM
B-13	10.0-11.5	POORLY GRADED SAND	99	3	SP
B-14	5.0-6.5	SILTY SAND	100	28	SM

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 1140

FIGURE C-2

NO. 200 SIEVE ANALYSIS TEST RESULTS

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

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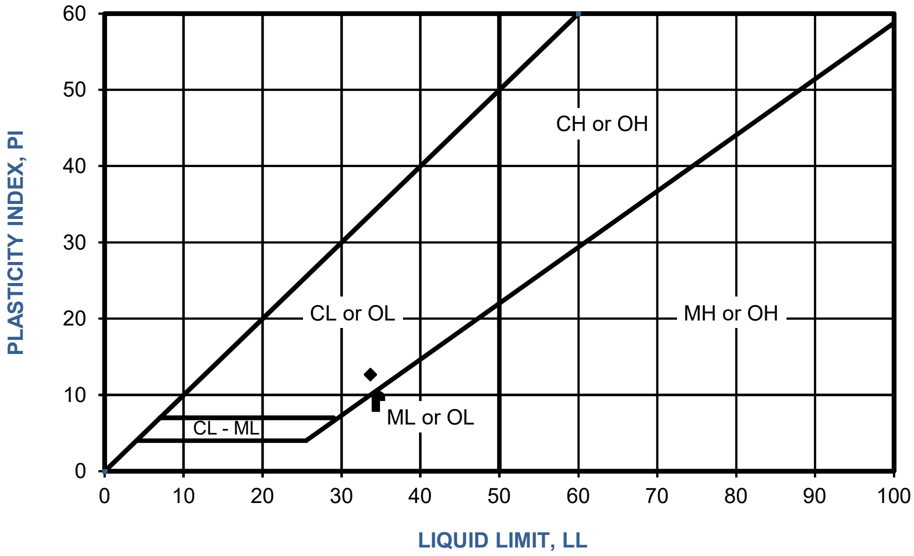
SYMBOL	LOCATION	DEPTH (ft)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	USCS CLASSIFICATION (Fraction Finer Than No. 40 Sieve)	USCS
●	B-1	5.0-6.5	35	25	10	ML	ML
■	B-6	5.0-6.5	35	26	9	ML	ML
◆	B-12	8.0-10.0	34	21	13	CL	CL



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

FIGURE C-3

ATTERBERG LIMITS TEST RESULTS

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

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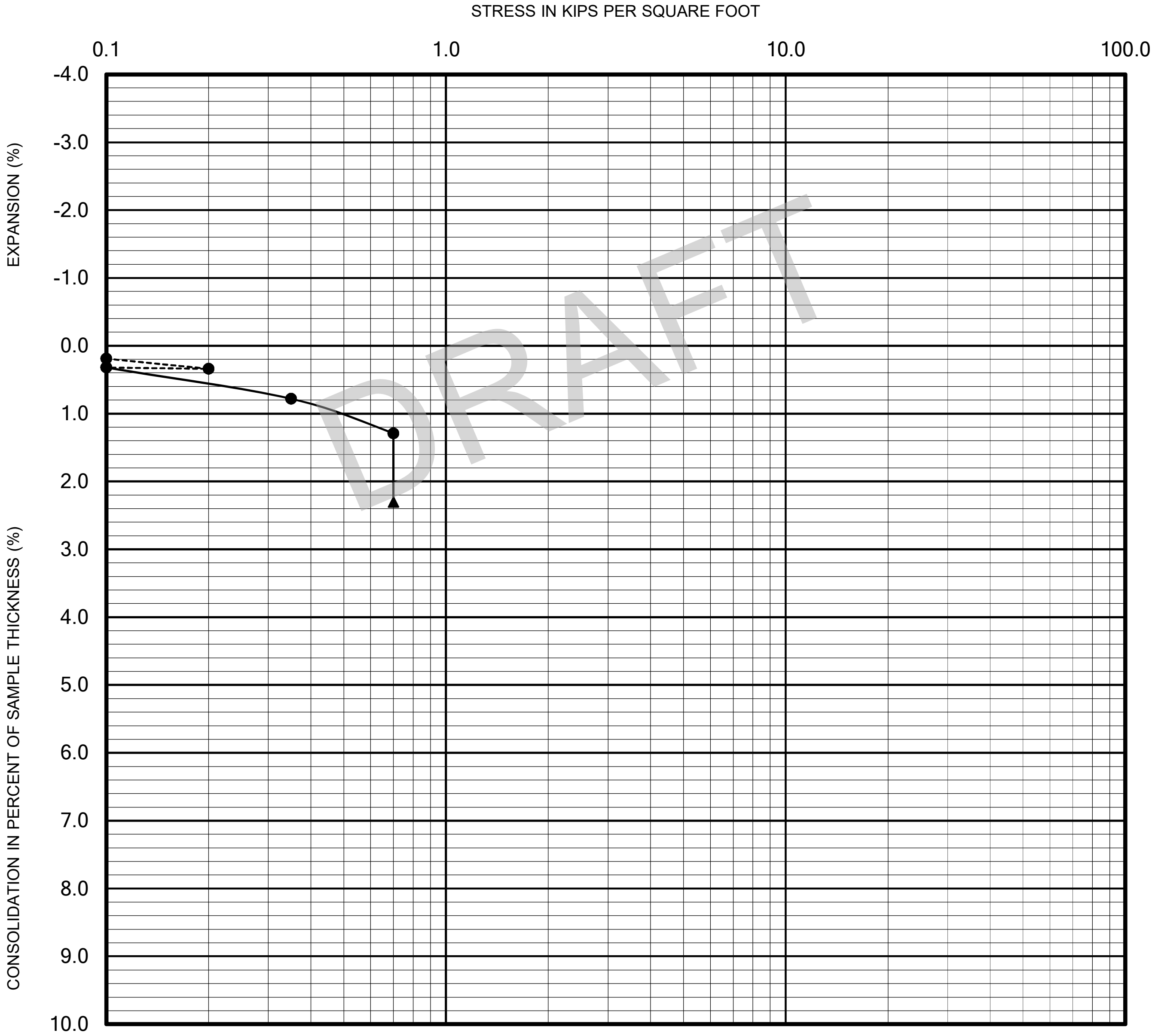

- - -●- - - Seating Cycle
—●— Loading Prior to Inundation
—▲— Loading After Inundation
– -▲- - Rebound Cycle

Sample Location	B-5
Depth (ft)	5.0-6.5
Soil Type	SM

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 2435

FIGURE C-4

CONSOLIDATION TEST RESULTS

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

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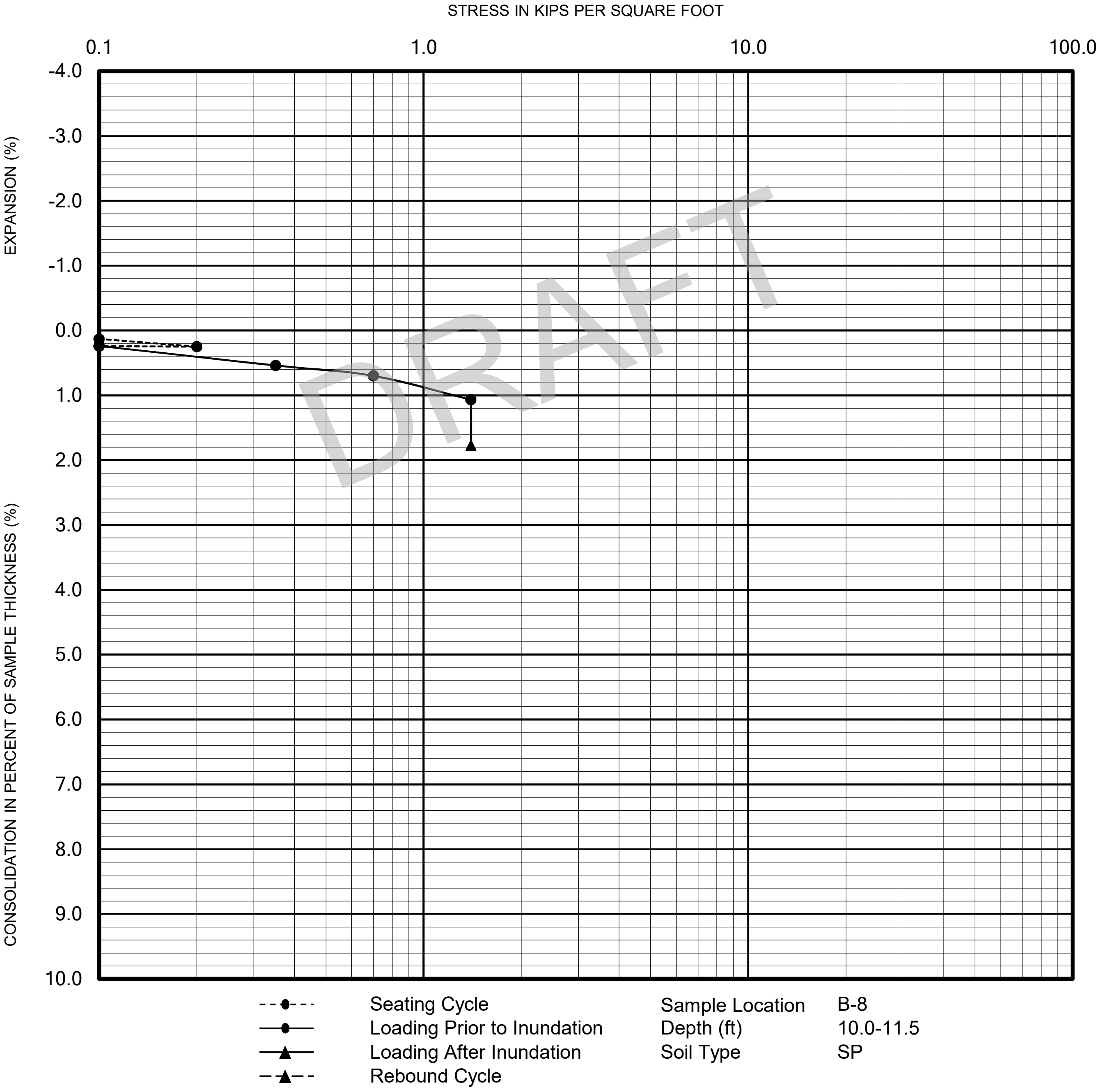

Sample Location B-8
Depth (ft) 10.0-11.5
Soil Type SP

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 2435

FIGURE C-5

CONSOLIDATION TEST RESULTS

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

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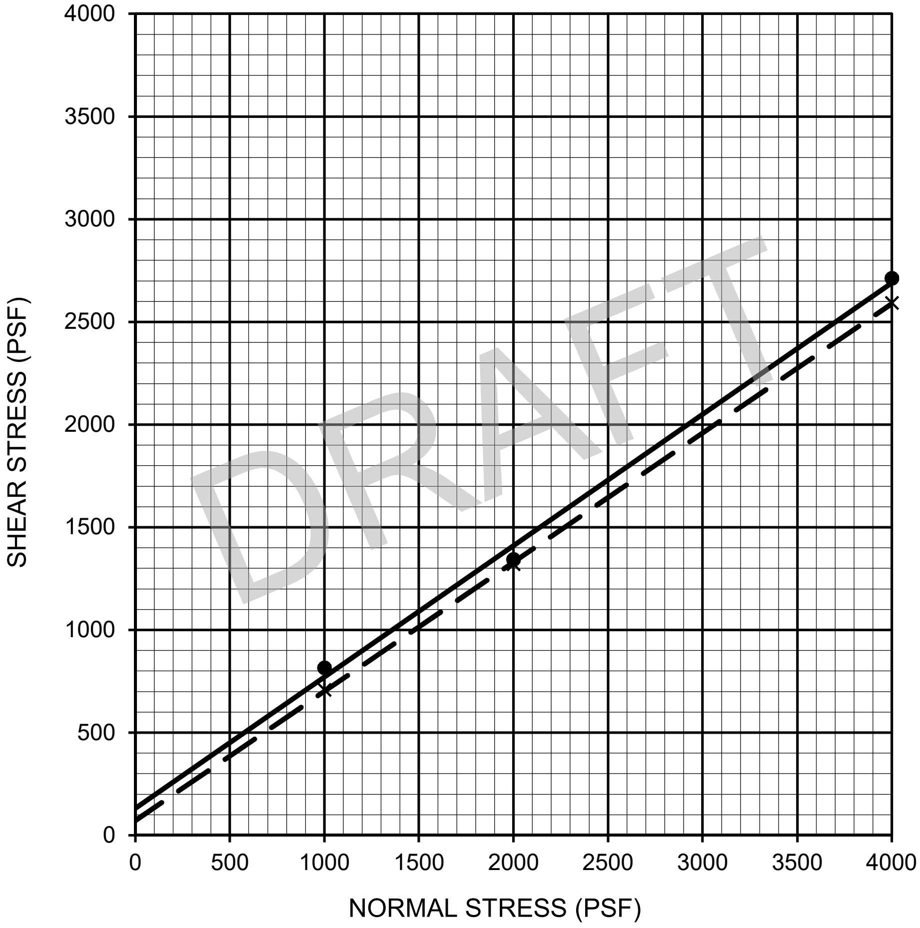

Description	Symbol	Sample Location	Depth (ft)	Shear Strength	Cohesion (psf)	Friction Angle (degrees)	Soil Type
SANDY SILT	—●—	B-7	5.0-6.5	Peak	132	33	ML
SANDY SILT	– – X – –	B-7	5.0-6.5	Ultimate	72	32	ML

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 3080

FIGURE C-6

DIRECT SHEAR TEST RESULTS

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

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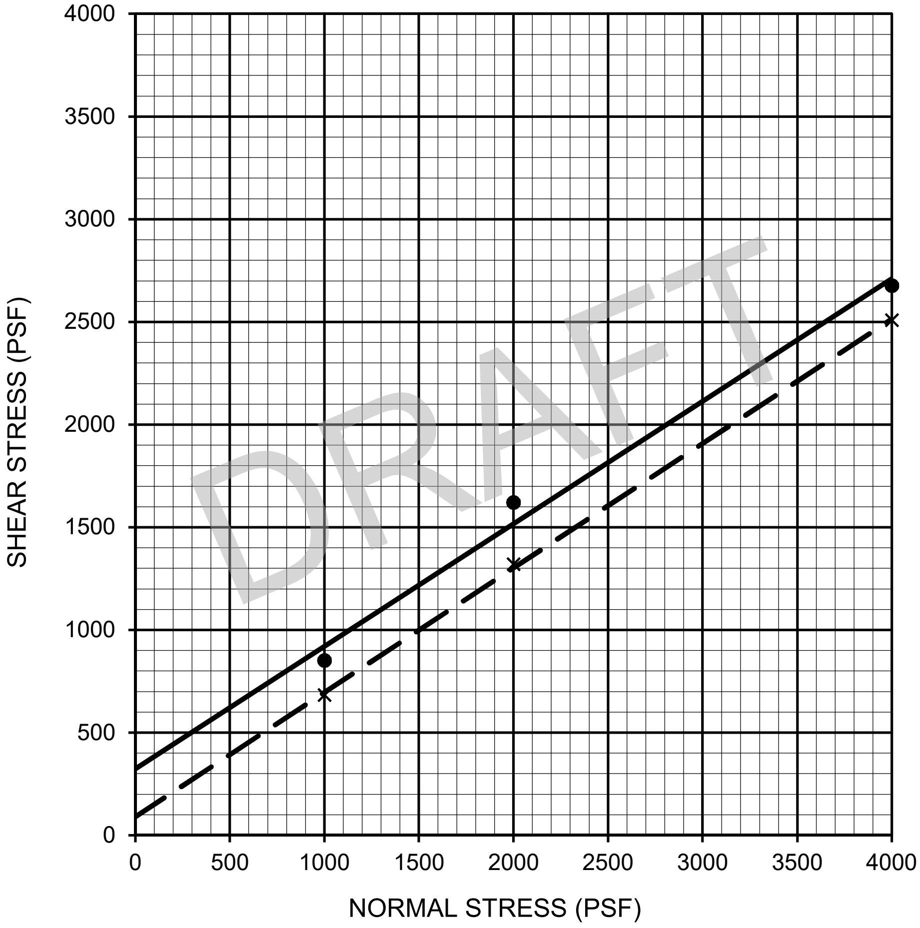

Description	Symbol	Sample Location	Depth (ft)	Shear Strength	Cohesion (psf)	Friction Angle (degrees)	Soil Type
SILTY SAND	—●—	B-12	11.0-11.5	Peak	324	31	SM
SILTY SAND	– – X – –	B-12	11.0-11.5	Ultimate	90	31	SM

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 3080

FIGURE C-7

DIRECT SHEAR TEST RESULTS

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

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Geotechnical & Environmental Sciences Consultants

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SAMPLE LOCATION	SAMPLE DEPTH (ft)	pH [1]	RESISTIVITY [1] (ohm-cm)	SULFATE CONTENT [2]		CHLORIDE CONTENT [3] (ppm)
				(ppm)	(%)	
B-6	0.0-5.0	7.7	2,362	10	0.001	45
B-8	0.0-4.0	7.1	1,219	160	0.016	20
B-12	5.0-6.5	7.5	4,673	170	0.017	25

[1] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 643
[2] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 417
[3] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 422

FIGURE C-8

CORROSIVITY TEST RESULTS

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

211972001 | 8/22

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

SAMPLE LOCATION	SAMPLE DEPTH (ft)	SOIL TYPE	R-VALUE
B-1	0.0-5.0	ML	29
B-4	0.0-5.0	SM	59

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 2844/CT 301

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Geotechnical & Environmental Sciences Consultants

FIGURE C-9

R-VALUE TEST RESULTS

SOUTH OXNARD AQUATIC CENTER
OXNARD, CALIFORNIA

APPENDIX D

Previous Boring Logs, CPT Logs, and Laboratory Testing
(Earth Systems, 2007)

Earth Systems Southern California

1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: 2	DRILLING DATE: June 21, 2007
PROJECT NAME: Oxnard College Park	DRILL RIG: Mobile B-80
PROJECT NUMBER: VT-23965-01	DRILLING METHOD: 6" Hollow Stem Auger
BORING LOCATION: Per Plan	LOGGED BY: Wesley Smith

Vertical Depth	Sample Type Bulk	Sample Type SPT	Sample Type Mod. Calif.	PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	DESCRIPTION OF UNITS
0	☒		■	8/9/10		SM	91.9	10.4	**ALLUVIUM:** Silty fine sand, slightly moist to dry, medium dense, pale brown.
5			◩	6/6/8		ML SP	--	--	Same as above to slightly silty fine sand, slightly moist to dry, medium stiff to loose, pale brown.
	▼		■	13/12/11		SW	100.6	20.4	ALLUVIUM: Slightly silty fine to coarse sand, scattered fine gravel, occasional cobbles, well graded, wet, medium dense, brown to pale brown.
10		◧		10/12/14		SW	--	--	Same as above.
15		◧		7/10/14		SW	--	--	**ALLUVIUM:** Fine to coarse sand, some fine gravel, well graded, wet, light brown to olive brown.
20		◧		3/4/6		ML	--	--	**ALLUVIUM:** Clayey silt, trace sand and calcium carbonate, slightly plastic, wet, stiff, dark olive gray.
25		◧		3/3/4		ML	--	--	**ALLUVIUM:** Fine sandy clayey silt with calcium carbonate nodules up to 1/8" in diameter, some stringers, medium plasticity, wet, medium stiff, dark olive gray.
30									
35		◧		13/42		SM	--	--	**ALLUVIUM:** Silty fine sand, wet, medium dense, light olive gray to olive. Heaving sands.
						SP			

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems Southern California

1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: 2
PROJECT NAME: Oxnard College Park
PROJECT NUMBER: VT-23965-01
BORING LOCATION: Per Plan

DRILLING DATE: June 21, 2007
DRILL RIG: Mobile B-80
DRILLING METHOD: 6" Hollow Stem Auger
LOGGED BY: Wesley Smith

Vertical Depth	Sample Type			PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	**DESCRIPTION OF UNITS**
	Bulk	SPT	Mod. Calif.						
40	☒				▒	SP			**ALLUVIUM:** Fine sand, some silt, poorly graded, flowing sands, wet, olive gray to olive.
45					▒	SP SW			**ALLUVIUM:** Fine sand to fine to coarse sand, scattered gravel, wet, medium dense, olive gray.
		◧		13/18/24	▒	SP	--	--	**ALLUVIUM:** Fine sand, trace silt, poorly graded, wet, dense, olive.
50 55 60 65 70 75									Final Depth: 48.5 feet Groundwater was encountered at about 8.5 feet.

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems Southern California

1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: 8
PROJECT NAME: Oxnard College Park
PROJECT NUMBER: VT-23965-01
BORING LOCATION: Per Plan

DRILLING DATE: June 22, 2007
DRILL RIG: Mobile B-80
DRILLING METHOD: 6" Hollow Stem Auger
LOGGED BY: Wesley Smith

Vertical Depth	Sample Type: Bulk	Sample Type: SPT	Sample Type: Mod. Calif.	PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	**DESCRIPTION OF UNITS**
0	☒		■	5/4/6		SM	99.6	8.4	**ALLUVIUM:** Very silty fine sand, moist, loose, brown to olive brown.
5			■	6/8/13		ML SM	95.9	16.7	**ALLUVIUM:** Layered clayey silt to silty fine sand, trace calcium carbonate, moist, very stiff to medium dense, brown to pale brown to light reddish brown.
	▼		■	7/11/13		SP SW	97.5	6.2	**ALLUVIUM:** Fine sand, some silt, poorly graded to fine to coarse sand, well graded, moist, medium dense, light reddish brown.
10		■		9/11/13		SM	--	--	**ALLUVIUM:** Silty fine to medium sand, wet, medium dense, brown.
15		■		13/19/21		SM	--	--	Same as above, except dense.
20									
25									
30									
35									

Final Depth: 16.5 feet

Groundwater was encountered at about 9.0 feet.

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems Southern California
1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: 9
PROJECT NAME: Oxnard College Park
PROJECT NUMBER: VT-23965-01
BORING LOCATION: Per Plan

DRILLING DATE: June 22, 2007
DRILL RIG: Mobile B-80
DRILLING METHOD: 6" Hollow Stem Auger
LOGGED BY: Wesley Smith

Vertical Depth	Sample Type			PENETRATION RESISTANCE (BLOWS/6"	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	DESCRIPTION OF UNITS
	Bulk	SPT	Mod. Calif.						
0	☒		■	5/6/8	▨	SM	88.2	15.7	**ALLUVIUM:** Clayey silty sand, slightly moist to moist, loose, olive brown to olive gray.
5			■	7/10/14	▨	SM	113.0	8.9	**ALLUVIUM:** Clayey silty fine to coarse sand, some fine to medium gravel, moist, medium dense, reddish brown.
10									Final Depth: 5.5 feet Groundwater was not encountered.
15									
20									
25									
30									
35									

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems Southern California

1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: 10	DRILLING DATE: June 22, 2007
PROJECT NAME: Oxnard College Park	DRILL RIG: Mobile B-80
PROJECT NUMBER: VT-23965-01	DRILLING METHOD: 6" Hollow Stem Auger
BORING LOCATION: Per Plan	LOGGED BY: Wesley Smith

Vertical Depth	Sample Type			PENETRATION RESISTANCE (BLOWS/6"	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	**DESCRIPTION OF UNITS**
	Bulk	SPT	Mod. Calif.						
0					▨	PT			**SURFACE:** Layer of organics and silt.
	☒		■	3/5/6	▥	ML CL	87.2	20.2	**ALLUVIUM:** Fine sandy silt to silty clay with caliche, moist, stiff, olive gray to gray.
			■	4/5/7		ML CL	86.4	35.5	Same as above, except more moisture.
5									Final Depth: 5.5 feet Groundwater was not encountered.
10									
15									
20									
25									
30									
35									

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems Southern California
1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: 12
PROJECT NAME: Oxnard College Park
PROJECT NUMBER: VT-23965-01
BORING LOCATION: Per Plan

DRILLING DATE: June 25, 2007
DRILL RIG: Mobile B-80
DRILLING METHOD: 6" Hollow Stem Auger
LOGGED BY: Wesley Smith

Vertical Depth	Sample Type Bulk	Sample Type SPT	Sample Type Mod. Calif.	PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	DESCRIPTION OF UNITS
0									
			■	6/7/9	▨	SM	89.6	11.5	**ALLUVIUM:** Silty very fine sand, trace rootlets, moist to slightly moist, loose, pale reddish brown.
5			■	4/5/8	▨	SM	92.7	23.5	**ALLUVIUM:** Silty fine sand, trace clay, moist, loose, pale brown to pale reddish brown.
	▼		■	10/11/16	░	SW	97.3	15.8	**ALLUVIUM:** Fine to coarse sand, trace fine gravel, well graded, very moist, medium dense, light reddish brown.
10		■		8/8/9	▨	SM	--	--	**ALLUVIUM:** Silty fine sand, wet, medium dense, brown to olive brown.
15		■		8/11/15	░	SW	--	--	**ALLUVIUM:** Fine to coarse sand, trace silt and fine gravel, well graded, wet, medium dense, olive gray.
20									Final Depth: 16.5 feet Groundwater was encountered at about 9.0 feet.
25									
30									
35									

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems Southern California

1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: 13
PROJECT NAME: Oxnard College Park
PROJECT NUMBER: VT-23965-01
BORING LOCATION: Per Plan

DRILLING DATE: June 25, 2007
DRILL RIG: Mobile B-80
DRILLING METHOD: 6" Hollow Stem Auger
LOGGED BY: Wesley Smith

Vertical Depth	Sample Type Bulk	Sample Type SPT	Sample Type Mod. Calif.	PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	DESCRIPTION OF UNITS
0	☒		■	3/3/4		SM	88.4	22.2	**ALLUVIUM:** Silty fine sand, moist, loose, brown.
5	☒		■	3/5/9		ML CL	91.5	30.7	**ALLUVIUM:** Clayey silt, trace sand, trace caliche, low plasticity, moist, stiff, olive brown to grayish brown.
	▼		■	6/8/9		SM	94.0	21.1	**ALLUVIUM:** Silty fine sand, moist, loose, olive brown to light reddish brown.
10		■		10/9/10		SM	--	--	**ALLUVIUM:** Silty fine sand, wet, medium dense, brown.
15		■		9/11/15		SW	--	--	**ALLUVIM:** Fine to coarse sand, trace silt, well graded, wet, medium dense, olive brown to grayish brown.
20		■		7/7/5		SM	--	--	**ALLUVIUM:** Silty fine to coarse sand with seams of sandy clay about 1/2" thick, wet, medium dense, olive gray to olive.
25									Final Depth: 21.5 feet Groundwater was encountered at about 9.0 feet.
30									
35									

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems Southern California

1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: 14
PROJECT NAME: Oxnard College Park
PROJECT NUMBER: VT-23965-01
BORING LOCATION: Per Plan

DRILLING DATE: June 25, 2007
DRILL RIG: Mobile B-80
DRILLING METHOD: 6" Hollow Stem Auger
LOGGED BY: Wesley Smith

Vertical Depth	Sample Type Bulk	 SPT	 Mod. Calif.	PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	DESCRIPTION OF UNITS
0			■	3/3/5		SM	98.5	9.8	**ALLUVIUM:** Silty fine sand, moist, loose, light reddish brown.
5			■	3/5/6		ML CL	93.8	27.4	**ALLUVIUM:** Clayey silt to silty clay, low plasticity, trace caliche, moist, stiff, reddish brown.
	▼		■	8/11/18		SW	100.3	13.4	**ALLUVIUM:** Fine to coarse sand, some fine gravel, well graded, moist, medium dense, light reddish brown.
10		■		7/5/5		SW	--	--	**ALLUVIUM:** Slightly silty fine to coarse sand, trace fine to coarse gravel, well graded, wet, loose, grayish brown.
15		■		7/9/12		SP	--	--	**ALLUVIUM:** Fine sand, trace silt, poorly graded, wet, medium dense, olive to olive gray.
20		■		3/3/4		SM	--	--	**ALLUVIUM:** Silty fine to coarse sand, some clayey silt seams, wet, loose, olive gray.
25 30 35									Final Depth: 21.5 feet Groundwater was encountered at about 9.0 feet.

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems Southern California
1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: 15
PROJECT NAME: Oxnard College Park
PROJECT NUMBER: VT-23965-01
BORING LOCATION: Per Plan

DRILLING DATE: June 25, 2007
DRILL RIG: Mobile B-80
DRILLING METHOD: 6" Hollow Stem Auger
LOGGED BY: Wesley Smith

Vertical Depth	Sample Type Bulk	Sample Type SPT	Sample Type Mod. Calif.	PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	DESCRIPTION OF UNITS
0				4/7/10		ML SM	92.9	11.0	**ALLUVIUM:** Very silty fine sand, slightly moist, loose, light reddish brown.
5				5/5/6		ML	95.2	24.2	**ALLUVIUM:** Fine sandy clayey silt, moist, stiff, light reddish brown to olive brown.
				7/11/13		SM	91.8	24.1	**ALLUVIUM:** Silty fine to medium sand, very moist, medium dense, reddish brown.
10				7/8/8		SM	--	--	Same as above, except wet.
15				10/11/16		SW	--	--	**ALLUVIUM:** Fine to coarse sand, trace silt, well graded, wet, medium dense, olive brown.
20				10/20		SM SW	--	--	**ALLUVIUM:** Slightly silty fine to coarse sand, trace seams of sandy clay, wet, medium dense, olive gray.
25									Final Depth: 20.0 feet Groundwater was encountered at about 7.5 feet.
30									
35									

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems Southern California
1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: 17
PROJECT NAME: Oxnard College Park
PROJECT NUMBER: VT-23965-01
BORING LOCATION: Per Plan

DRILLING DATE: June 25, 2007
DRILL RIG: Mobile B-80
DRILLING METHOD: 6" Hollow Stem Auger
LOGGED BY: Wesley Smith

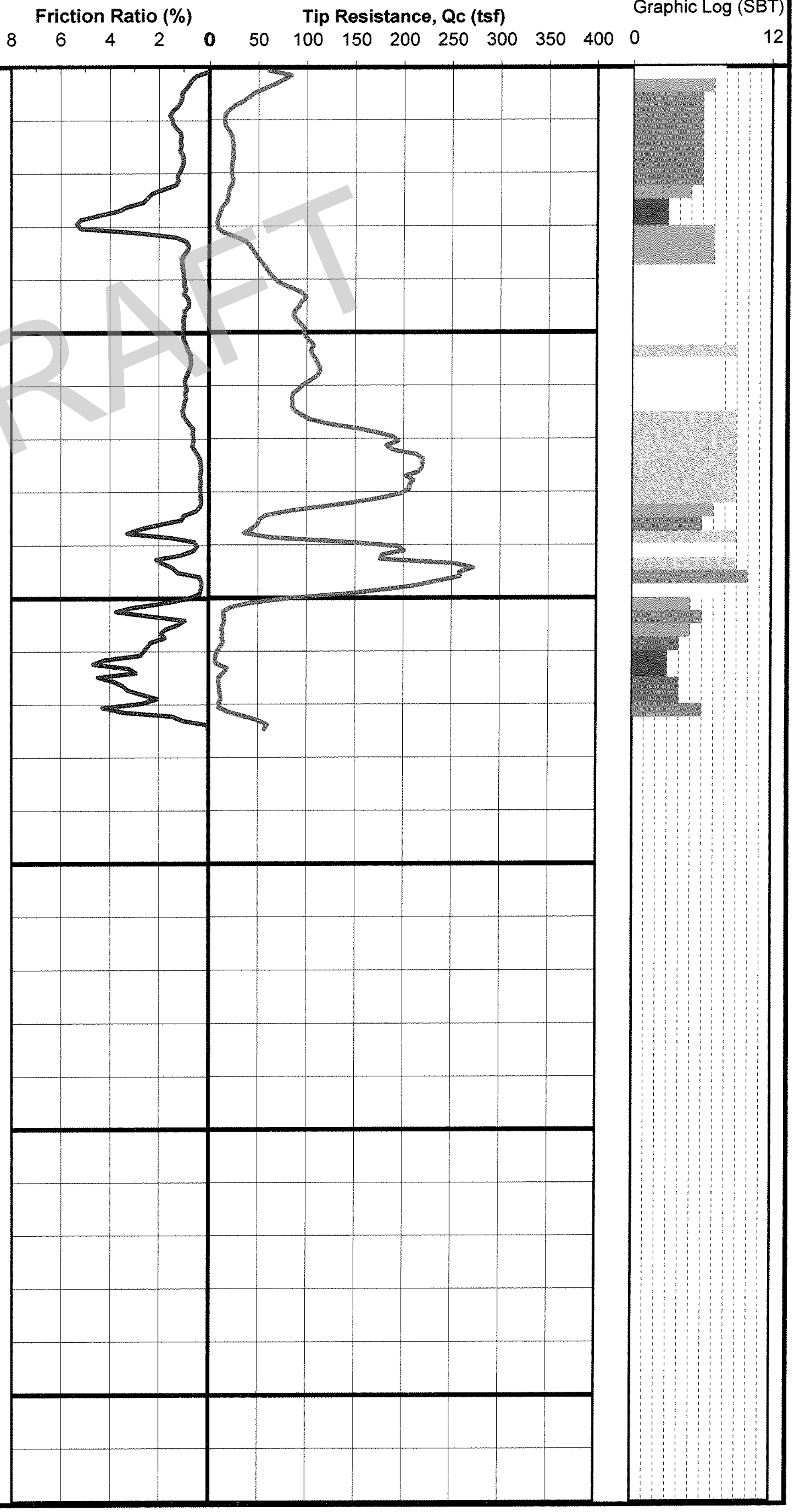
Vertical Depth	Sample Type Bulk	 SPT	 Mod. Calif.	PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	DESCRIPTION OF UNITS
0	☒				▦	GM			**ARTIFICIAL FILL:** Scattered concrete pieces up to 6" in diameter.
	☒		■	4/5/6	▨	SM	103.9	4.8	**ALLUVIUM:** Silty fine sand, moist, loose, brown.
5	☒		■	3/4/5	▥	ML	88.2	9.4	**ALLUVIUM:** Fine sandy silt, moist, medium stiff, reddish brown to pale brown.
	▼		■	3/5/6	▥	ML	85.0	33.4	**ALLUVIUM:** Clayey silt, low plasticity, trace sand, very moist, stiff, olive brown to slightly reddish brown.
10		◧		3/3/4	▨	SM	--	--	**ALLUVIUM:** Silty fine sand, trace seams of sandy silt about 1/2" to 1", wet, loose, olive brown to reddish brown.
15		◧		9/14/18	░	SW	--	--	**ALLUVIUM:** Fine to coarse sand, trace silt and fine gravel, well graded, wet, dense, olive gray.
20									Final Depth: 16.5 feet Groundwater encountered at about 8.5 feet.
25									
30									
35									

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

CPT No: CPT-4
Project Name: Oxnard College Park
Project No.: VT-23965-01
Location: See Site Exploration Plan

CPT Vendor: **Kehoe Testing and Engineering**
Truck Mounted Electric
Cone with 30-ton reaction
Date: 6/18/2007

Interpreted Soil Stratigraphy Robertson & Campanella ('89)	Density/Consistency
Sand to Silty Sand	medium dense
Sandy Silt to Clayey Silt	medium dense
Sandy Silt to Clayey Silt	medium dense
Sandy Silt to Clayey Silt	medium dense
Sandy Silt to Clayey Silt	medium dense
Clay	stiff
Silty Sand to Sandy Silt	medium dense
Sand to Silty Sand	medium dense
Sand to Silty Sand	dense
Sand to Silty Sand	dense
Sand to Silty Sand	dense
Sand to Silty Sand	dense
Sand to Silty Sand	medium dense
Sand	dense
Sand	very dense
Sand	dense
Sand to Silty Sand	medium dense
Sand to Silty Sand	dense
Sand	very dense
Sand	dense
Clayey Silt to Silty Clay	stiff
Clayey Silt to Silty Clay	stiff
Clay	stiff
Silty Clay to Clay	stiff



End of Sounding @ 25.1 feet

Earth Systems
Southern California

CONE PENETROMETER INTERPRETATION

(based on Robertson & Campanella, 1989)

Project: Oxnard College Park

Project No: VT-23965-01

Date: 06/18/07

CPT SOUNDING: CPT-4 Plot: 1 Density: 1 SPT N

Program developed 2003 by Shelton L. Stringer, GE, Earth Systems Southwest

Est. GWT (feet): **8.0** Dr correlation: 0 Baldi Qc/N: 1 Robertson Phi Correlation: 4 SPT N

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %	Soil Classification	USCS	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Total po tsf	p'o tsf	F	n	Cq	Norm. Qc1n	2.6 Ic	Clean Sand Qc1n	$N_{1(60)}$	Clean Sand $N_{1(60)}$	Est. % Fines	Rel. Dens. Dr (%)	Phi (deg.)	Nk: 17 Su (tsf)	OCR
0.15	0.5	75.63	0.66	Sand to Silty Sand	SP/SM	dense	100	4.0	19	0.013	0.013	0.66	0.53	1.70	121.5	1.73	128.9	32	26	15	85	37		
0.30	1.0	47.77	1.03	Silty Sand to Sandy Silt	SM/ML	medium dense	110	3.0	16	0.039	0.039	1.03	0.61	1.70	76.8	2.01	100.6	27	20	30	66	35		
0.46	1.5	25.93	1.28	Sandy Silt to Clayey Silt	ML	medium dense	110	2.5	10	0.066	0.066	1.28	0.69	1.70	41.7	2.28	78.2	18	16	50	41	33		
0.61	2.0	15.10	1.50	Sandy Silt to Clayey Silt	ML	medium dense	110	2.5	6	0.094	0.094	1.51	0.76	1.70	24.3	2.51	68.5	10	14	70	18	30		
0.76	2.5	19.80	1.19	Sandy Silt to Clayey Silt	ML	medium dense	110	2.5	8	0.121	0.121	1.20	0.72	1.70	31.8	2.36	68.2	13	14	55	29	31		
0.91	3.0	23.30	1.13	Sandy Silt to Clayey Silt	ML	medium dense	110	2.5	9	0.149	0.149	1.14	0.69	1.70	37.4	2.29	71.3	16	14	50	36	32		
1.07	3.5	23.30	1.03	Sandy Silt to Clayey Silt	ML	medium dense	110	2.5	9	0.176	0.176	1.04	0.69	1.70	37.4	2.26	68.8	16	14	50	36	32		
1.22	4.0	22.03	1.16	Sandy Silt to Clayey Silt	ML	medium dense	110	2.5	9	0.204	0.204	1.18	0.70	1.70	35.4	2.31	70.6	15	14	50	34	32		
1.37	4.5	22.00	1.46	Sandy Silt to Clayey Silt	ML	medium dense	110	2.5	9	0.231	0.231	1.47	0.72	1.70	35.3	2.37	77.7	15	16	55	34	32		
1.52	5.0	18.03	2.46	Clayey Silt to Silty Clay	ML/CL	medium dense	120	2.0	9	0.260	0.260	2.50	0.78	1.70	29.0	2.58	92.7	15	19	75	25	32		
1.68	5.5	10.33	4.16	Clay	CL/CH	stiff	120	1.0	10	0.290	0.290	4.28	0.88	1.70	16.6	2.91		10		100			0.59	10.4
1.83	6.0	9.63	4.45	Clay	CL/CH	stiff	120	1.0	10	0.320	0.320	4.60	0.90	1.70	15.5	2.96		10		100			0.55	8.7
1.98	6.5	34.47	1.02	Silty Sand to Sandy Silt	SM/ML	medium dense	120	3.0	11	0.350	0.350	1.03	0.65	1.70	55.4	2.12	82.8	19	17	40	52	33		
2.13	7.0	47.13	0.97	Silty Sand to Sandy Silt	SM/ML	medium dense	120	3.0	16	0.380	0.380	0.98	0.61	1.70	75.7	2.00	98.4	25	20	30	65	35		
2.29	7.5	57.33	1.04	Silty Sand to Sandy Silt	SM/ML	medium dense	120	3.0	19	0.410	0.410	1.04	0.59	1.70	92.1	1.95	114.2	30	23	30	73	36		
2.44	8.0	69.07	0.99	Sand to Silty Sand	SP/SM	medium dense	120	4.0	17	0.440	0.440	0.99	0.57	1.65	108.0	1.88	126.6	26	25	25	80	35		
2.59	8.5	93.97	0.92	Sand to Silty Sand	SP/SM	dense	120	4.0	23	0.470	0.454	0.92	0.54	1.58	140.4	1.78	152.9	35	31	20	91	37		
2.74	9.0	91.73	0.85	Sand to Silty Sand	SP/SM	dense	120	4.0	23	0.500	0.469	0.86	0.54	1.55	134.6	1.77	145.9	33	29	20	89	37		
2.90	9.5	89.70	1.00	Sand to Silty Sand	SP/SM	dense	120	4.0	22	0.530	0.483	1.00	0.56	1.55	131.1	1.82	147.2	32	29	20	88	37		
3.05	10.0	97.97	1.02	Sand to Silty Sand	SP/SM	dense	120	4.0	24	0.560	0.498	1.02	0.55	1.52	140.3	1.81	156.0	35	31	20	91	37		
3.20	10.5	104.80	0.89	Sand to Silty Sand	SP/SM	dense	120	4.0	26	0.590	0.512	0.90	0.54	1.48	146.2	1.76	157.2	37	31	20	93	38		
3.35	11.0	108.57	0.72	Sand	SP	medium dense	120	5.0	22	0.620	0.526	0.73	0.52	1.44	147.3	1.69	152.2	30	30	15	93	36		
3.51	11.5	112.40	0.81	Sand to Silty Sand	SP/SM	dense	120	4.0	28	0.650	0.541	0.82	0.52	1.42	151.1	1.72	158.6	38	32	15	94	38		
3.66	12.0	97.57	0.92	Sand to Silty Sand	SP/SM	dense	120	4.0	24	0.680	0.555	0.93	0.55	1.43	131.4	1.80	145.3	33	29	20	88	37		
3.81	12.5	85.50	0.94	Sand to Silty Sand	SP/SM	medium dense	120	4.0	21	0.710	0.570	0.95	0.56	1.42	114.6	1.85	131.3	28	26	20	82	36		
3.96	13.0	89.30	1.02	Sand to Silty Sand	SP/SM	medium dense	120	4.0	22	0.740	0.584	1.02	0.57	1.40	118.3	1.86	136.6	29	27	25	84	36		
4.11	13.5	125.27	0.77	Sand	SP	dense	120	5.0	25	0.770	0.598	0.77	0.51	1.34	158.7	1.68	163.0	32	33	15	96	37		
4.27	14.0	184.97	0.62	Sand	SP	dense	120	5.0	37	0.800	0.613	0.62	0.50	1.31	229.7	1.50	229.7	47	46	10	100	40		
4.42	14.5	194.60	0.54	Sand	SP	dense	120	5.0	39	0.830	0.627	0.54	0.50	1.30	238.9	1.45	238.9	49	48	5	100	40		
4.57	15.0	219.33	0.31	Sand	SP	very dense	120	5.0	44	0.860	0.642	0.32	0.50	1.28	266.2	1.27	266.2	55	53	0	100	41		
4.72	15.5	209.20	0.32	Sand	SP	very dense	120	5.0	42	0.890	0.656	0.32	0.50	1.27	251.1	1.29	251.1	52	50	0	100	41		
4.88	16.0	196.48	0.32	Sand	SP	dense	120	5.0	39	0.920	0.670	0.32	0.50	1.26	233.3	1.32	233.3	48	47	5	100	40		
5.03	16.5	114.07	0.38	Sand	SP	medium dense	120	5.0	23	0.950	0.685	0.38	0.50	1.24	134.0	1.57	134.0	28	27	10	89	35		
5.18	17.0	52.70	1.34	Silty Sand to Sandy Silt	SM/ML	medium dense	120	3.0	18	0.980	0.699	1.36	0.65	1.31	65.2	2.14	99.8	21	20	40	59	34		
5.33	17.5	47.13	2.52	Sandy Silt to Clayey Silt	ML	medium dense	120	2.5	19	1.010	0.714	2.57	0.72	1.33	59.1	2.35	126.1	22	25	55	55	34		
5.49	18.0	176.83	0.54	Sand	SP	dense	120	5.0	35	1.040	0.728	0.54	0.50	1.21	201.5	1.51	201.5	41	40	10	100	39		
5.64	18.5	201.80	1.67	Sand to Silty Sand	SP/SM	very dense	120	4.0	50	1.070	0.742	1.68	0.55	1.22	232.1	1.82	260.1	59	52	20	100	42		
5.79	19.0	262.90	1.01	Sand	SP	very dense	120	5.0	53	1.100	0.757	1.02	0.50	1.18	293.8	1.58	293.8	60	59	10	100	42		
5.94	19.5	208.90	0.29	Gravelly Sand to Sand	SW	dense	120	6.0	35	1.130	0.771	0.29	0.50	1.17	231.3	1.30	231.3	40	46	0	100	38		
6.10	20.0	87.83	1.00	Sand to Silty Sand	SP/SM	medium dense	120	4.0	22	1.160	0.786	1.01	0.58	1.19	98.8	1.92	119.2	25	24	25	76	35		
6.25	20.5	16.77	3.07	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.0	8	1.190	0.800	3.30	0.85	1.27	20.1	2.78		8		95			0.94	5.8
6.40	21.0	13.67	1.29	Sandy Silt to Clayey Silt	ML	stiff	120	2.5	5	1.220	0.814	1.42	0.81	1.24	16.0	2.65		5		80			0.76	4.6
6.55	21.5	13.10	2.00	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.0	7	1.250	0.829	2.21	0.85	1.23	15.2	2.77		7		95			0.72	4.3
6.71	22.0	8.30	2.60	Silty Clay to Clay	CL	firm	120	1.5	6	1.280	0.843	3.07	0.92	1.23	9.7	3.01		6		100			0.44	2.5
6.86	22.5	10.23	4.02	Clay	CL/CH	stiff	120	1.0	10	1.310	0.858	4.61	0.93	1.22	11.8	3.05		10		100			0.55	3.1
7.01	23.0	11.00	3.75	Clay	CL/CH	stiff	120	1.0	11	1.340	0.872	4.27	0.92	1.19	12.4	3.01		11		100			0.60	3.3
7.16	23.5	10.13	3.14	Silty Clay to Clay	CL	stiff	120	1.5	7	1.370	0.886	3.63	0.92	1.18	11.3	3.00		7		100			0.54	3.0
7.32	24.0	10.23	3.01	Silty Clay to Clay	CL	stiff	120	1.5	7	1.400	0.901	3.48	0.92	1.16	11.2	2.99		7		100			0.55	2.9
7.47	24.5	34.80	2.00	Sandy Silt to Clayey Silt	ML	medium dense	120	2.5	14	1.430	0.915	2.09	0.75	1.11	36.6	2.45	92.6	15	19	65	35	32		

CPT No: **CPT-5**
Project Name: Oxnard College Park
Project No.: VT-23965-01
Location: See Site Exploration Plan

CPT Vendor: **Kehoe Testing and Engineering**
Truck Mounted Electric
Cone with 30-ton reaction
Date: 6/18/2007

Interpreted Soil Stratigraphy Robertson & Campanella ('89)	Density/Consistency
Sand to Silty Sand	medium dense
Silty Sand to Sandy Silt	medium dense
Silty Sand to Sandy Silt	medium dense
Sandy Silt to Clayey Silt	medium dense
Sandy Silt to Clayey Silt	medium dense
Silty Sand to Sandy Silt	dense
Sand to Silty Sand	dense
Sand	dense
Sand	dense
Sand	dense
Sand	medium dense
Sand	dense
Sand	medium dense
Sand	dense
Sand	dense
Sand	dense
Sand	dense
Sand	dense
Gravelly Sand to Sand	very dense
Gravelly Sand to Sand	very dense
Silty Sand to Sandy Silt	dense
Clayey Silt to Silty Clay	very stiff
Clayey Silt to Silty Clay	stiff
Clayey Silt to Silty Clay	stiff
Sandy Silt to Clayey Silt	medium dense
Sandy Silt to Clayey Silt	very stiff
Sandy Silt to Clayey Silt	very stiff
Clayey Silt to Silty Clay	stiff
Clayey Silt to Silty Clay	firm
Clayey Silt to Silty Clay	stiff
Clay	stiff
Silty Sand to Sandy Silt	medium dense
Gravelly Sand to Sand	dense
Gravelly Sand to Sand	dense
Sand	dense
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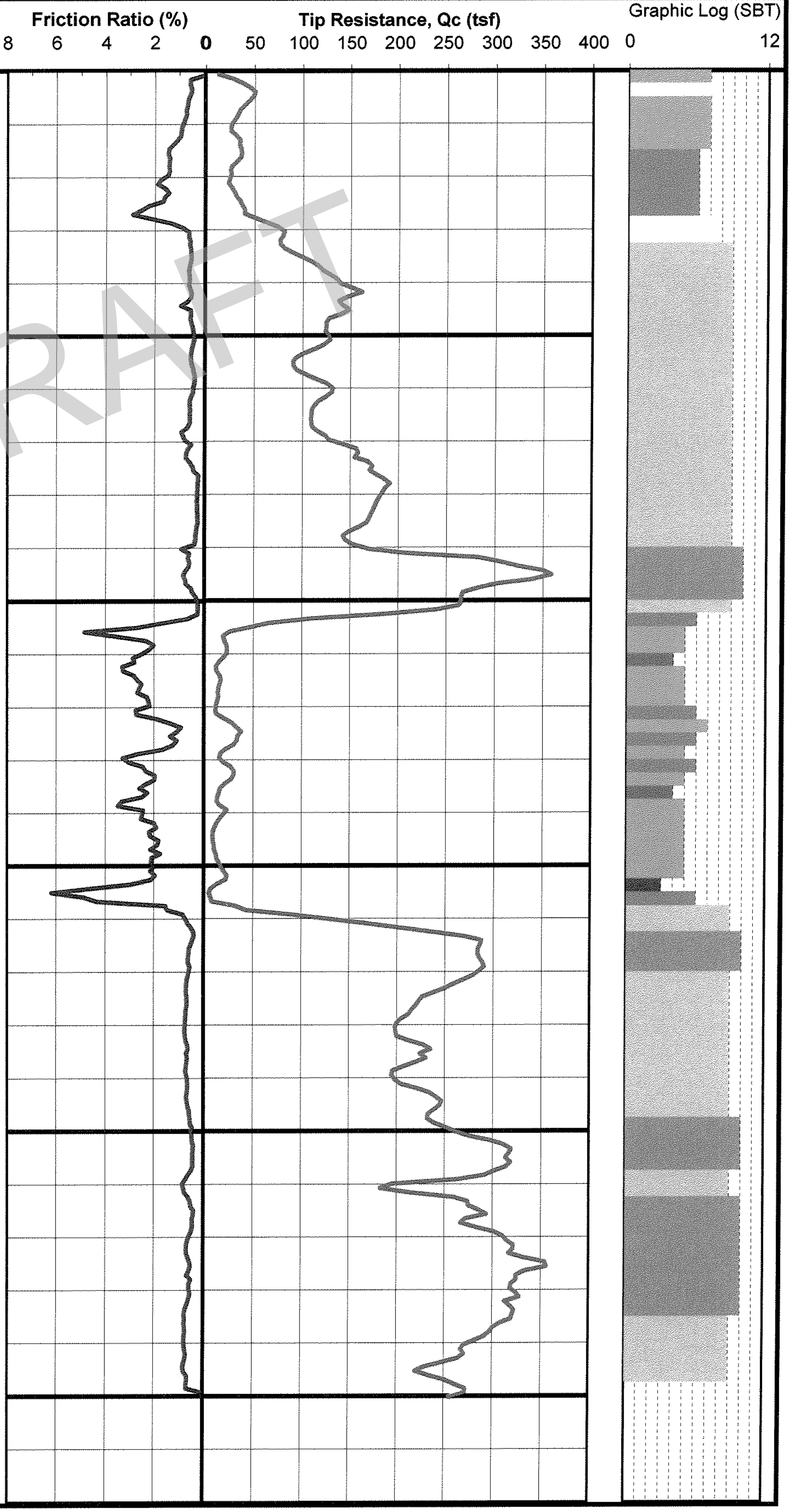
End of Sounding @ 50.2 feet



Earth Systems
Southern California

CONE PENETROMETER INTERPRETATION

(based on Robertson & Campanella, 1989)

Project: Oxnard College Park Project No: VT-23965-01 Date: 06/18/07

CPT SOUNDING: CPT-5 Plot: 1 Density: 1 SPT N Program developed 2003 by Shelton L. Stringer, GE, Earth Systems Southwest

Est. GWT (feet): **8.5** Dr correlation: 0 Baldi Qc/N: 1 Robertson Phi Correlation: 4 SPT N

Base	Base	Avg	Avg				Est.	Qc		Total							Clean		Clean	Est.	Rel.		Nk:	17
Depth	Depth	Tip	Friction	Soil		Density or	Density	to	SPT	po	p'o				Norm.	2.6	Sand		Sand	%	Dens.	Phi	Su	
meters	feet	Qc, tsf	Ratio, %	Classification	USCS	Consistency	(pcf)	N	N(60)	tsf	tsf	F	n	Cq	Qc1n	Ic	Qc1n	$N_{1(60)}$	$N_{1(60)}$	Fines	Dr (%)	(deg.)	(tsf)	OCR
0.15	0.5	36.77	0.57	Silty Sand to Sandy Silt	SM/ML	medium dense	110	3.0	12	0.014	0.014	0.57	0.60	1.70	59.1	1.96	73.7	21	15	30	55	33		
0.30	1.0	47.73	0.61	Sand to Silty Sand	SP/SM	medium dense	100	4.0	12	0.040	0.040	0.61	0.57	1.70	76.7	1.88	89.6	20	18	25	66	33		
0.46	1.5	35.90	0.72	Silty Sand to Sandy Silt	SM/ML	medium dense	110	3.0	12	0.066	0.066	0.72	0.61	1.70	57.7	2.02	76.5	20	15	30	54	33		
0.61	2.0	27.53	0.85	Silty Sand to Sandy Silt	SM/ML	medium dense	110	3.0	9	0.094	0.094	0.85	0.66	1.70	44.2	2.16	69.4	16	14	40	43	32		
0.76	2.5	30.30	1.00	Silty Sand to Sandy Silt	SM/ML	medium dense	110	3.0	10	0.121	0.121	1.01	0.66	1.70	48.7	2.16	76.9	17	15	40	47	32		
0.91	3.0	35.37	1.40	Silty Sand to Sandy Silt	SM/ML	medium dense	110	3.0	12	0.149	0.149	1.41	0.67	1.70	56.8	2.19	94.0	20	19	45	53	33		
1.07	3.5	31.10	1.43	Sandy Silt to Clayey Silt	ML	medium dense	110	2.5	12	0.176	0.176	1.44	0.68	1.70	50.0	2.24	89.0	21	18	45	48	34		
1.22	4.0	24.67	1.56	Sandy Silt to Clayey Silt	ML	medium dense	110	2.5	10	0.204	0.204	1.57	0.71	1.70	39.6	2.35	83.6	17	17	55	38	32		
1.37	4.5	26.13	1.64	Sandy Silt to Clayey Silt	ML	medium dense	110	2.5	10	0.231	0.231	1.65	0.71	1.70	42.0	2.34	87.6	18	18	55	41	33		
1.52	5.0	34.27	1.85	Sandy Silt to Clayey Silt	ML	medium dense	110	2.5	14	0.259	0.259	1.86	0.69	1.70	55.1	2.28	104.3	23	21	50	52	34		
1.68	5.5	47.95	2.23	Sandy Silt to Clayey Silt	ML	dense	120	2.5	19	0.288	0.288	2.24	0.68	1.70	77.0	2.23	134.4	33	27	45	66	37		
1.83	6.0	78.07	0.71	Sand to Silty Sand	SP/SM	dense	120	4.0	20	0.318	0.318	0.72	0.53	1.70	125.4	1.74	133.8	33	27	15	86	37		
1.98	6.5	77.97	0.57	Sand to Silty Sand	SP/SM	dense	120	4.0	19	0.348	0.348	0.58	0.51	1.70	125.3	1.69	128.9	33	26	15	86	37		
2.13	7.0	99.57	0.54	Sand	SP	dense	120	5.0	20	0.378	0.378	0.55	0.50	1.67	157.5	1.59	157.5	32	32	10	96	37		
2.29	7.5	122.03	0.61	Sand	SP	dense	120	5.0	24	0.408	0.408	0.61	0.50	1.61	185.9	1.57	185.9	38	37	10	100	38		
2.44	8.0	141.97	0.60	Sand	SP	dense	120	5.0	28	0.438	0.438	0.60	0.50	1.56	208.7	1.52	208.7	43	42	10	100	39		
2.59	8.5	149.00	0.57	Sand	SP	dense	120	5.0	30	0.468	0.468	0.57	0.50	1.50	211.9	1.51	211.9	44	42	10	100	39		
2.74	9.0	143.33	0.68	Sand	SP	dense	120	5.0	29	0.498	0.482	0.68	0.50	1.48	200.7	1.57	200.7	41	40	10	100	39		
2.90	9.5	125.33	0.52	Sand	SP	dense	120	5.0	25	0.528	0.496	0.52	0.50	1.46	173.0	1.55	173.0	36	35	10	100	37		
3.05	10.0	126.50	0.43	Sand	SP	dense	120	5.0	25	0.558	0.511	0.43	0.50	1.44	172.1	1.50	172.1	35	34	10	99	37		
3.20	10.5	112.70	0.50	Sand	SP	dense	120	5.0	23	0.588	0.525	0.51	0.50	1.42	151.2	1.59	151.2	31	30	10	94	36		
3.35	11.0	91.23	0.51	Sand	SP	medium dense	120	5.0	18	0.618	0.540	0.52	0.51	1.41	121.6	1.67	123.8	25	25	15	85	35		
3.51	11.5	104.00	0.41	Sand	SP	medium dense	120	5.0	21	0.648	0.554	0.41	0.50	1.38	135.9	1.58	135.9	28	27	10	90	35		
3.66	12.0	128.87	0.44	Sand	SP	dense	120	5.0	26	0.678	0.568	0.44	0.50	1.36	166.2	1.52	166.2	34	33	10	98	37		
3.81	12.5	117.90	0.57	Sand	SP	dense	120	5.0	24	0.708	0.583	0.57	0.50	1.35	150.2	1.62	150.2	31	30	10	94	36		
3.96	13.0	109.20	0.58	Sand	SP	medium dense	120	5.0	22	0.738	0.597	0.59	0.51	1.34	137.9	1.66	139.1	28	28	15	90	36		
4.11	13.5	111.60	0.72	Sand	SP	medium dense	120	5.0	22	0.768	0.612	0.73	0.52	1.33	140.5	1.71	146.6	29	29	15	91	36		
4.27	14.0	131.37	0.71	Sand	SP	dense	120	5.0	26	0.798	0.626	0.71	0.51	1.30	161.9	1.66	163.1	33	33	15	97	37		
4.42	14.5	156.17	0.70	Sand	SP	dense	120	5.0	31	0.828	0.640	0.70	0.50	1.29	189.7	1.60	189.7	39	38	10	100	38		
4.57	15.0	170.60	0.48	Sand	SP	dense	120	5.0	34	0.858	0.655	0.49	0.50	1.27	205.0	1.47	205.0	42	41	5	100	39		
4.72	15.5	184.57	0.25	Sand	SP	dense	120	5.0	37	0.888	0.669	0.25	0.50	1.26	219.4	1.28	219.4	45	44	0	100	40		
4.88	16.0	181.93	0.28	Sand	SP	dense	120	5.0	36	0.918	0.684	0.28	0.50	1.24	213.9	1.32	213.9	44	43	5	100	39		
5.03	16.5	173.63	0.28	Sand	SP	dense	120	5.0	35	0.948	0.698	0.28	0.50	1.23	202.1	1.34	202.1	42	40	5	100	39		
5.18	17.0	165.10	0.28	Sand	SP	dense	120	5.0	33	0.978	0.712	0.28	0.50	1.22	190.2	1.36	190.2	39	38	5	100	38		
5.33	17.5	145.40	0.34	Sand	SP	dense	120	5.0	29	1.008	0.727	0.35	0.50	1.21	165.8	1.46	165.8	34	33	5	98	37		
5.49	18.0	176.73	0.63	Sand	SP	dense	120	5.0	35	1.038	0.741	0.63	0.50	1.19	199.6	1.55	199.6	41	40	10	100	39		
5.64	18.5	303.53	0.61	Gravelly Sand to Sand	SW	very dense	120	6.0	51	1.068	0.756	0.62	0.50	1.18	339.5	1.38	339.5	58	68	5	100	42		
5.79	19.0	349.27	0.78	Gravelly Sand to Sand	SW	very dense	120	6.0	58	1.098	0.770	0.78	0.50	1.17	387.0	1.42	387.0	66	77	5	100	43		
5.94	19.5	284.00	0.57	Gravelly Sand to Sand	SW	very dense	120	6.0	47	1.128	0.784	0.57	0.50	1.16	311.8	1.38	311.8	53	62	5	100	41		
6.10	20.0	264.60	0.28	Gravelly Sand to Sand	SW	dense	120	6.0	44	1.158	0.799	0.28	0.50	1.15	287.8	1.21	287.8	49	58	0	100	40		
6.25	20.5	178.43	0.38	Sand	SP	dense	120	5.0	36	1.188	0.813	0.38	0.50	1.14	192.4	1.43	192.4	40	38	5	100	38		
6.40	21.0	45.90	3.09	Sandy Silt to Clayey Silt	ML	medium dense	120	2.5	18	1.218	0.828	3.17	0.75	1.20	52.1	2.46	133.4	20	27	65	50	33		
6.55	21.5	20.00	2.64	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.0	10	1.248	0.842	2.81	0.82	1.21	22.8	2.69		10		85			1.13	6.7
6.71	22.0	21.00	2.51	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.0	11	1.278	0.856	2.68	0.81	1.19	23.6	2.67		11		85			1.18	6.9
6.86	22.5	12.33	3.13	Silty Clay to Clay	CL	stiff	120	1.5	8	1.308	0.871	3.50	0.89	1.19	13.9	2.92		8		100			0.67	3.8
7.01	23.0	15.40	2.68	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.0	8	1.338	0.885	2.94	0.86	1.16	17.0	2.81		8		100			0.85	4.8
7.16	23.5	13.47	2.53	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.0	7	1.368	0.900	2.81	0.87	1.15	14.7	2.85		7		100			0.74	4.0
7.32	24.0	11.37	2.39	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.0	6	1.398	0.914	2.72	0.89	1.14	12.2	2.90		6		100			0.61	3.3
7.47	24.5	19.83	2.01	Sandy Silt to Clayey Silt	ML	very stiff	120	2.5	8	1.428	0.928	2.17	0.81	1.11	20.8	2.65		8		80			1.11	5.9
7.62	25.0	34.33	1.11	Silty Sand to Sandy Silt	SM/ML	medium dense	120	3.0	11	1.458	0.943	1.16	0.70	1.08	35.2	2.31	70.0	12	14	50	34	31		
7.77	25.5	27.80	1.32	Sandy Silt to Clayey Silt	ML	medium dense	120	2.5	11	1.488	0.957	1.39	0.74	1.08	28.3	2.44	69.7	11	14	60	24	30		
7.92	26.0	16.43	2.99	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.0	8	1.518	0.972	3.29	0.87	1.08	16.7	2.84		8		100			0.91	4.6
8.08	26.5	28.08	2.18	Sandy Silt to Clayey Silt	ML	medium dense	120	2.5	11	1.548	0.986	2.31	0.78	1.06	28.0	2.57	88.0	11	18	75	24	30		
8.23	27.0	16.77	2.41	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.0	8	1.578	1.000	2.66	0.85	1.05	16.6	2.79		8		95			0.93	4.6
8.38	27.5	13.63	3.10	Silty Clay to Clay	CL	stiff	120	1.5	9	1.608	1.015	3.52	0.90	1.04	13.4	2.93		9		100			0.74	3.6
8.53	28.0	18.80	2.49	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.0	9	1.638	1.029	2.73	0.84	1.02	18.2	2.76		9		95			1.05	5.0
8.69	28.5	10.07	2.03	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.0	5	1.668	1.044	2.44	0.91	1.01	9.6	2.96		5		100			0.53	2.4
8.84	29.0	8.43	1.94	Clayey Silt to Silty Clay	ML/CL	firm	120	2.0	4	1.698	1.058	2.43	0.93	1.00	8.0	3.03		4		100			0.43	1.9
8.99	29.5	10.90	2.00	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.0	5	1.728	1.072	2.37	0.90	0.99	10.2	2.93		5		100			0.58	2.6
9.14	30.0	16.73	2.09	Clayey Silt to Silty Clay	ML/CL	stiff	120	2.0	8	1.758	1.087	2.34	0.85	0.98	15.5	2.78		8		95			0.92	4.1
9.30	30.5	18.87	2.34	Clayey Silt to Silty Clay	ML/CL	very stiff	120	2.0	9	1.788	1.101	2.59	0.84	0.97	17.2	2.77		9		95			1.05	4.7
9.45	31.0	5.57	5.27	Clay	CL/CH	firm	120	1.0	6	1.818	1.116	7.82	1.00	0.95	5.0	3.49		6		100			0.26	1.0
9.60	31.5	26.47	2.45	Sandy Silt to Clayey Silt	ML	very stiff	120	2.5	11	1.848	1.130	2.64	0.81	0.95	23.7	2.66		11		80			1.49	6.5
9.75	32.0	126.10	0.72	Sand	SP	medium dense	120	5.0	25	1.878	1.144	0.73	0.54	0.96	114.2	1.78	124.8	24	25	20	82	34		
9.91	32.5	233.87	0.43	Sand	SP	dense	120	5.0	47	1.908	1.159	0.43	0.50	0.96	211.2	1.43	211.2	43	42	5	100	39		
10.06	33.0	285.93	0.51	Gravelly Sand to Sand	SW	dense	120	6.0	48	1.938	1.173	0.51	0.50	0.95	256.7	1.41	256.7	44	51	5	100	39		
10.21	33.5	285.87	0.60	Gravelly Sand to Sand	SW	dense	120	6.0	48	1.968	1.188	0.60	0.50	0.94	255.0	1.46	255.0	44	51	5	100	39		
10.36	34.0	284.80	0.57	Gravelly Sand to Sand	SW	dense	120	6.0	47	1.998	1.202	0.58	0.50	0.94	252.6	1.45	252.6	43	51	5	100	39		
10.52	34.5	259.27	0.67	Sand	SP	dense	120	5.0	52	2.028	1.216	0.68	0.50	0.93	228.6	1.53	228.6	47	46	10	100	40		
10.67	35.0	228.63	0.67	Sand	SP	dense	120	5.0	46	2.058	1.231	0.68	0.50	0.93	200.4	1.57	200.4	41	40	10	100	39		
10.82	35.5	215.27	0.69	Sand	SP	dense	120	5.0	43	2.088	1.245	0.70	0.50	0.92	187.6	1.60	187.6	39	38	10	100	38		
10.97	36.0	200.47	0.73	Sand	SP	dense	120	5.0	40	2.118	1.260	0.74	0.50	0.92	173.6	1.64	173.3	36	35	15	100	37		
11.13	36.5	209.05	0.70	Sand	SP	dense	120	5.0	42	2.148	1.274	0.71	0.50	0.91	180.1	1.62	180.1	37	36	10	100	38		
11.28	37.0	229.60	0.64	Sand	SP	dense	120	5.0	46	2.178	1.288	0.65	0.50	0.91	196.7	1.56	196.7	40	39	10	100	39		
11.43	37.5	207.33	0.69	Sand	SP	dense	120	5.0	41	2.208	1.303	0.70	0.50	0.90	176.6	1.62	176.6	36	35	10	100	38		

Earth Systems
Southern California

CONE PENETROMETER INTERPRETATION

(based on Robertson & Campanella, 1989)

Project: Oxnard College Park

Project No: VT-23965-01

Date: 06/18/07

CPT SOUNDING: CPT-5 Plot: 1 Density: 1 SPT N Program developed 2003 by Shelton L. Stringer, GE, Earth Systems Southwest

Est. GWT (feet): **8.5** Dr correlation: 0 Baldi Qc/N: 1 Robertson Phi Correlation: 4 SPT N

Base Depth meters	Base Depth feet	Avg Tip Qc, tsf	Avg Friction Ratio, %	Soil Classification	USCS	Density or Consistency	Est. Density (pcf)	Qc to N	SPT N(60)	Total po tsf	p'o tsf	F	n	Cq	Norm. Qc1n	2.6 Ic	Clean Sand Qc1n	$N_{1(60)}$	Clean Sand $N_{1(60)}$	Est. % Fines	Rel. Dens. Dr (%)	Phi (deg.)	Nk: Su (tsf)	17 OCR
11.58	38.0	198.97	0.64	Sand	SP	dense	120	5.0	40	2.238	1.317	0.65	0.50	0.90	168.5	1.62	168.5	35	34	10	98	37		
11.73	38.5	231.97	0.65	Sand	SP	dense	120	5.0	46	2.268	1.332	0.66	0.50	0.89	195.4	1.57	195.4	40	39	10	100	39		
11.89	39.0	243.00	0.61	Sand	SP	dense	120	5.0	49	2.298	1.346	0.62	0.50	0.89	203.6	1.54	203.6	42	41	10	100	39		
12.04	39.5	234.30	0.53	Sand	SP	dense	120	5.0	47	2.328	1.360	0.54	0.50	0.88	195.3	1.51	195.3	40	39	10	100	39		
12.19	40.0	262.83	0.45	Gravelly Sand to Sand	SW	dense	120	6.0	44	2.358	1.375	0.45	0.50	0.88	217.9	1.43	217.9	37	44	5	100	38		
12.34	40.5	309.20	0.42	Gravelly Sand to Sand	SW	dense	120	6.0	52	2.388	1.389	0.42	0.50	0.87	255.1	1.36	255.1	44	51	5	100	39		
12.50	41.0	316.10	0.42	Gravelly Sand to Sand	SW	dense	120	6.0	53	2.418	1.404	0.42	0.50	0.87	259.4	1.35	259.4	44	52	5	100	39		
12.65	41.5	302.37	0.50	Gravelly Sand to Sand	SW	dense	120	6.0	50	2.448	1.418	0.51	0.50	0.86	246.9	1.42	246.9	42	49	5	100	39		
12.80	42.0	213.83	0.77	Sand	SP	dense	120	5.0	43	2.478	1.432	0.78	0.51	0.86	173.3	1.66	175.2	36	35	15	100	37		
12.95	42.5	248.57	0.62	Sand	SP	dense	120	5.0	50	2.508	1.447	0.62	0.50	0.86	200.9	1.55	200.9	41	40	10	100	39		
13.11	43.0	284.73	0.42	Gravelly Sand to Sand	SW	dense	120	6.0	47	2.538	1.461	0.42	0.50	0.85	229.0	1.40	229.0	39	46	5	100	38		
13.26	43.5	273.80	0.42	Gravelly Sand to Sand	SW	dense	120	6.0	46	2.568	1.476	0.43	0.50	0.85	219.1	1.41	219.1	38	44	5	100	38		
13.41	44.0	308.83	0.55	Gravelly Sand to Sand	SW	dense	120	6.0	51	2.598	1.490	0.56	0.50	0.84	246.0	1.45	246.0	42	49	5	100	39		
13.56	44.5	319.73	0.67	Gravelly Sand to Sand	SW	dense	120	6.0	53	2.628	1.504	0.67	0.50	0.84	253.4	1.50	253.4	43	51	10	100	39		
13.72	45.0	347.50	0.54	Gravelly Sand to Sand	SW	dense	120	6.0	58	2.658	1.519	0.55	0.50	0.83	274.1	1.41	274.1	47	55	5	100	40		
13.87	45.5	327.33	0.57	Gravelly Sand to Sand	SW	dense	120	6.0	55	2.688	1.533	0.57	0.50	0.83	257.0	1.44	257.0	44	51	5	100	39		
14.02	46.0	320.73	0.55	Gravelly Sand to Sand	SW	dense	120	6.0	53	2.718	1.548	0.55	0.50	0.83	250.7	1.44	250.7	43	50	5	100	39		
14.17	46.5	319.70	0.61	Gravelly Sand to Sand	SW	dense	120	6.0	53	2.748	1.562	0.61	0.50	0.82	248.7	1.47	248.7	43	50	5	100	39		
14.33	47.0	317.45	0.75	Gravelly Sand to Sand	SW	dense	120	6.0	53	2.778	1.576	0.75	0.50	0.82	245.8	1.54	245.8	42	49	10	100	39		
14.48	47.5	296.67	0.74	Sand	SP	dense	120	5.0	59	2.808	1.591	0.75	0.50	0.82	228.7	1.56	228.7	47	46	10	100	40		
14.63	48.0	272.87	0.75	Sand	SP	dense	120	5.0	55	2.838	1.605	0.76	0.50	0.81	209.4	1.59	209.4	43	42	10	100	39		
14.78	48.5	261.03	0.72	Sand	SP	dense	120	5.0	52	2.868	1.620	0.73	0.50	0.81	199.4	1.59	199.4	41	40	10	100	39		
14.94	49.0	227.47	0.74	Sand	SP	dense	120	5.0	45	2.898	1.634	0.75	0.50	0.80	172.7	1.65	173.0	36	35	15	100	37		
15.09	49.5	261.27	0.66	Sand	SP	dense	120	5.0	52	2.928	1.648	0.67	0.50	0.80	197.8	1.57	197.8	41	40	10	100	39		

Additionally, hydrometer analyses were performed to assess the distribution of the particles that passed the No. 200 screen. The hydrometer portions of the tests were run using sodium hexametaphosphate as a dispersing agent.

H. Resistance ("R") Value tests were conducted on bulk samples secured during the field study. The tests were performed in accordance with California Method 301. Three specimens at different moisture contents were tested for each sample, and the R-Value at 300 psi exudation pressure was determined from the plotted results.

I. Portions of the bulk samples were sent to another laboratory for analyses of soil pH, resistivity, chloride contents, and sulfate contents. Soluble chloride and sulfate contents were determined on a dry weight basis. Resistivity testing was performed in accordance with California Test Method 424, wherein the ratio of soil to water was 1:3.

TABULATED LABORATORY TEST RESULTS

REMOLDED SAMPLES

BORING AND DEPTH	B-1 @ 0-5'	B-2 @ 0-5'	B-5 @ 0-5'
USCS	SM	SM	ML/CL
MAXIMUM DENSITY (pcf)	116.0	120.0	115.5
OPTIMUM MOISTURE (%)	12.5	9.0	13.0
COHESION (psf)	150* 0**	140* 0**	0* 0**
ANGLE OF INTERNAL FRICTION	28°* 30°**	31°* 32°**	29°* 30°**
EXPANSION INDEX	46	4	78
pH	7.1	7.5	7.3
SOLUBLE CHLORIDES (mg/Kg)	0	0	29
RESISTIVITY (OHMs/cm)	830	5,560	1,670
SOLUBLE SULFATES (mg/Kg)	2,080	69	630
GRAIN SIZE DISTRIBUTION (%)			
GRAVEL	0.4	0.4	0.3
SAND	56.1	50.2	28.1
SILT	28.4	45.2	42.6
CLAY	15.1	4.2	29.0

* = Peak Strength Values; ** = Ultimate Strength Values

BORING AND DEPTH	B-9 @ 0-5'	B-11 @ 0-3'	B-25 @ 0-5'
USCS	SM	ML	ML
RESISTANCE ("R") VALUE	10	21	18

TABULATED LABORATORY TEST RESULTS (Continued)

REMOLDED SAMPLES

BORING AND DEPTH	B-1 @ 9'	B-1 @ 15'	B-1 @21'
USCS	SP/SM	SW	ML
GRAIN SIZE DISTRIBUTION (%)			
GRAVEL	0.0	11.6	0.0
SAND	90.1	86.3	13.2
SILT	8.6	2.1	62.9
CLAY	1.3	0.0	23.9

BORING AND DEPTH	B-1 @ 25'	B-1 @ 30'	B-1 @ 35'
USCS	ML	ML	SP/SM
GRAIN SIZE DISTRIBUTION (%)			
GRAVEL	0.0	0.5	0.0
SAND	27.6	34.6	89.8
SILT	61.1	54.3	10.2
CLAY	11.3	10.6	0.0

BORING AND DEPTH	B-1 @ 40'	B-1 @ 45'	B-1 @ 50'
USCS	SP/SW	SP/SM	ML
GRAIN SIZE DISTRIBUTION (%)			
GRAVEL	0.3	0.2	0.0
SAND	95.3	90.6	43.6
SILT	4.4	8.8	49.9
CLAY	0.0	0.4	6.5

BORING AND DEPTH	B-2 @ 10'	B-2 @ 21'	B-2 @ 26'	B-2 @ 40'
USCS	SW	ML	ML	SP
GRAIN SIZE DISTRIBUTION (%)				
GRAVEL	8.4	0.0	0.0	0.1
SAND	89.8	17.7	18.1	92.4
SILT	1.8	62.7	59.2	7.5
CLAY	0.0	19.6	22.7	0.0

BORING AND DEPTH	B-5 @ 11'	B-5 @ 15'	B-5 @ 21'	B-5 @ 23'
USCS	SW	SW	SW	ML
GRAIN SIZE DISTRIBUTION (%)				
GRAVEL	0.3	11.4	12.4	0.0
SAND	95.3	86.8	80.5	41.4
SILT	4.4	1.8	6.0	45.0
CLAY	0.0	0.0	1.1	13.6

TABULATED LABORATORY TEST RESULTS (Continued)

REMOLDED SAMPLES

BORING AND DEPTH	B-5 @ 25'	B-5 @ 30'	B-5 @ 35'	B-5 @ 40'
USCS	ML	ML	SP	SW
GRAIN SIZE DISTRIBUTION (%)				
GRAVEL	0.0	0.4	0.1	2.1
SAND	47.7	40.3	96.3	94.7
SILT	39.9	50.5	3.6	3.2
CLAY	12.4	8.8	0.0	0.0

RELATIVELY UNDISTURBED SAMPLES

BORING AND DEPTH	B-4 @ 4'	B-4 @ 6'
USCS	SM	SP
IN-PLACE DENSITY (pcf)	95.8	94.4
IN-PLACE MOISTURE (%)	6.6	6.6
COHESION (psf)	0* 0**	0* 120**
ANGLE OF INTERNAL FRICTION	35°* 30°**	34°* 28°**

BORING AND DEPTH	B-12 @ 4'	B-13 @ 6'
USCS	ML	SM
IN-PLACE DENSITY (pcf)	92.7	94.0
IN-PLACE MOISTURE (%)	23.5	21.1
COHESION (psf)	290* 90**	120* 0**
ANGLE OF INTERNAL FRICTION	26°* 28°**	35°* 32°**

BORING AND DEPTH	B-15 @ 4'	B-16 @ 6'
USCS	ML	SM
IN-PLACE DENSITY (pcf)	95.2	110.1
IN-PLACE MOISTURE (%)	24.2	6.6
COHESION (psf)	0* 0**	360* 170**
ANGLE OF INTERNAL FRICTION	30°* 30°**	25°* 26°**

BORING AND DEPTH	B-18 @ 4'	B-23 @ 4'
USCS	SM/SW	SM
IN-PLACE DENSITY (pcf)	113.8	99.7
IN-PLACE MOISTURE (%)	12.8	22.1
COHESION (psf)	240* 90**	300* 0**
ANGLE OF INTERNAL FRICTION	34°* 29°**	30°* 31°**

* = Peak Strength Values; ** = Ultimate Strength Values

TABULATED LABORATORY TEST RESULTS (Continued)

IN-PLACE DENSITIES

BORING & DEPTH		DRY DENSITY	% MOISTURE	RELATIVE COMPACTION
B-1 @	2'	91.0	25.1	78
	5'	88.3	31.1	--
	9'	101.7	23.6	--
B-2 @	2'	91.9	10.4	77
	7'	100.6	20.4	--
B-3 @	2'	92.1	16.8	77
	4'	90.8	30.3	--
	6'	105.1	3.9	--
B-4 @	2'	97.6	8.8	81
	4'	95.8	6.6	80
	6'	94.4	6.6	--
B-5 @	2'	90.6	25.5	78
	5'	101.8	25.3	--
B-6 @	2'	101.8	8.8	85
	4'	103.6	13.4	86
	6'	99.4	9.7	--
B-7 @	2'	95.1	5.4	79
	4'	90.3	13.0	--
	6'	93.4	5.2	--
B-8 @	2'	99.6	8.4	83
	4'	95.9	16.7	80
	6'	97.5	6.2	--
B-9 @	2'	88.2	15.7	74
	4'	113.0	8.9	94
B-10 @	2'	87.2	20.2	75
	4'	86.4	35.5	75
B-11 @	2'	84.9	31.4	74
	4'	90.8	26.4	79

TABULATED LABORATORY TEST RESULTS (Continued)

IN-PLACE DENSITIES

BORING & DEPTH		DRY DENSITY	% MOISTURE	RELATIVE COMPACTION
B-12 @	2'	89.6	11.5	75
	4'	92.7	23.5	77
	6'	97.3	15.8	--
B-13 @	2'	88.4	22.2	76
	4'	91.5	30.7	--
	6'	94.0	21.1	--
B-14 @	2'	98.5	9.8	85
	4'	93.8	27.4	--
	6'	100.3	13.4	--
B-15 @	2'	92.9	11.0	80
	4'	95.2	24.2	--
	6'	91.8	24.1	--
B-16 @	2'	99.8	7.6	83
	4'	92.1	21.2	--
	6'	110.1	6.6	--
B-17 @	2'	103.9	4.8	87
	4'	88.2	9.4	--
	6'	85.0	33.4	--
B-18 @	2'	92.1	22.7	80
	4'	113.8	12.8	--
	6'	110.8	15.5	--
B-19 @	2'	88.7	14.8	77
B-20 @	2'	92.8	21.2	80
	4'	90.5	32.1	78
B-21 @	2'	96.6	23.8	84
	4'	90.9	30.0	79

TABULATED LABORATORY TEST RESULTS (Continued)

IN-PLACE DENSITIES

BORING & DEPTH		DRY DENSITY	% MOISTURE	RELATIVE COMPACTION
B-22 @	2'	96.1	26.4	83
	4'	103.0	18.0	--
B-23 @	2'	97.8	13.5	82
	4'	99.7	22.1	86
	6'	96.2	10.7	80
B-24 @	2'	104.7	9.0	91
	4'	100.7	18.1	87
	6'	95.4	26.1	83
	10'	108.1	19.6	94
B-25 @	2'	94.0	9.9	81
	4'	84.3	36.6	73
B-26 @	2'	100.1	14.0	87
	4'	90.5	28.4	78
	6'	94.8	27.9	82

MAXIMUM DENSITY / OPTIMUM MOISTURE

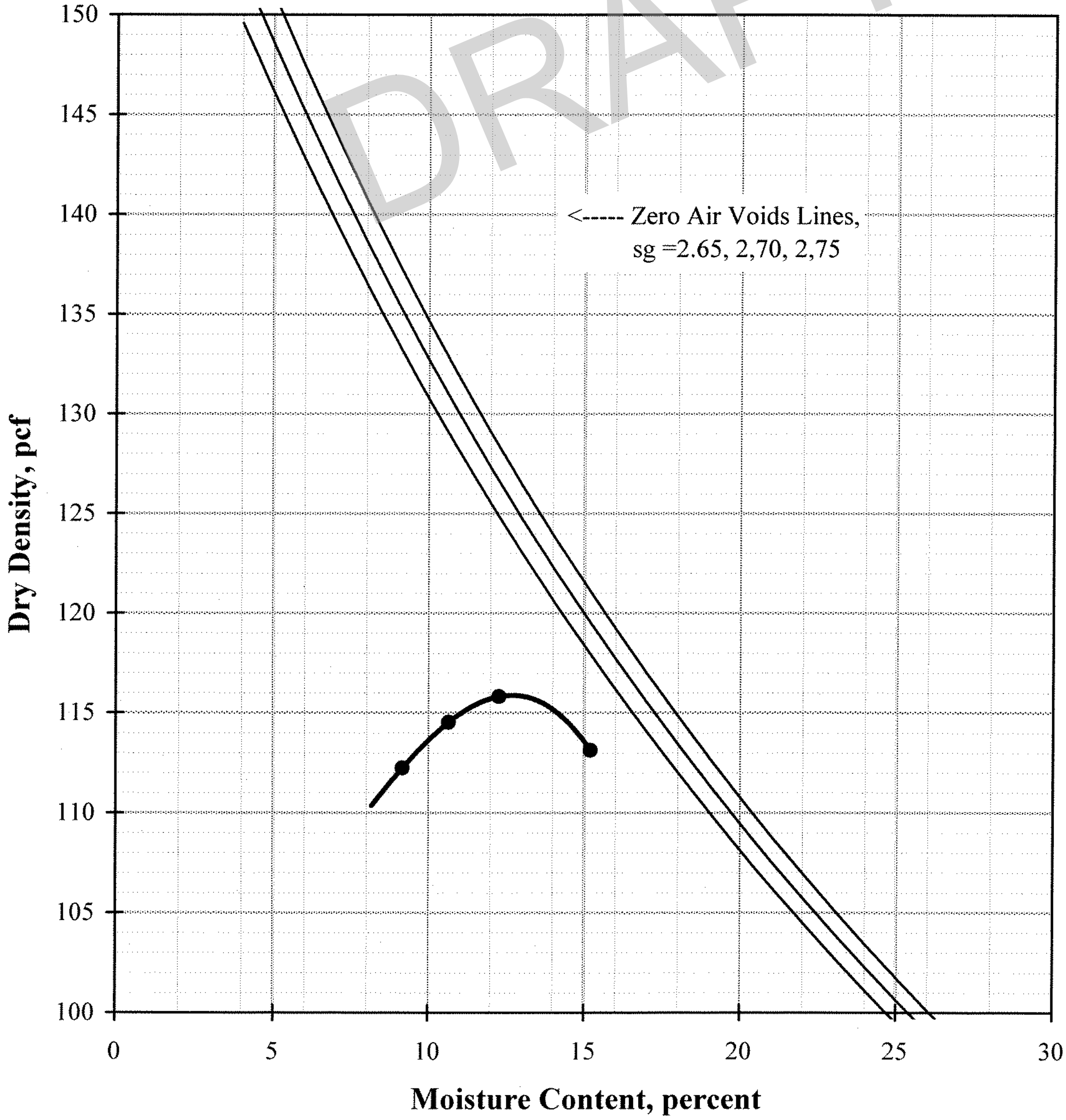
ASTM D 1557-91 (Modified)

Job Name: Oxnard Collele Park
Sample ID: B 1 @ 0-5
Location: 0-5
Description: Yellowish Brown Sandy Silt

Procedure Used: A
Prep. Method: Moist
Rammer Type: Automatic

Maximum Density: 116 pcf
Optimum Moisture: 12.5%

Sieve Size	% Retained
3/4"	0.0
3/8"	0.0
#4	0.1



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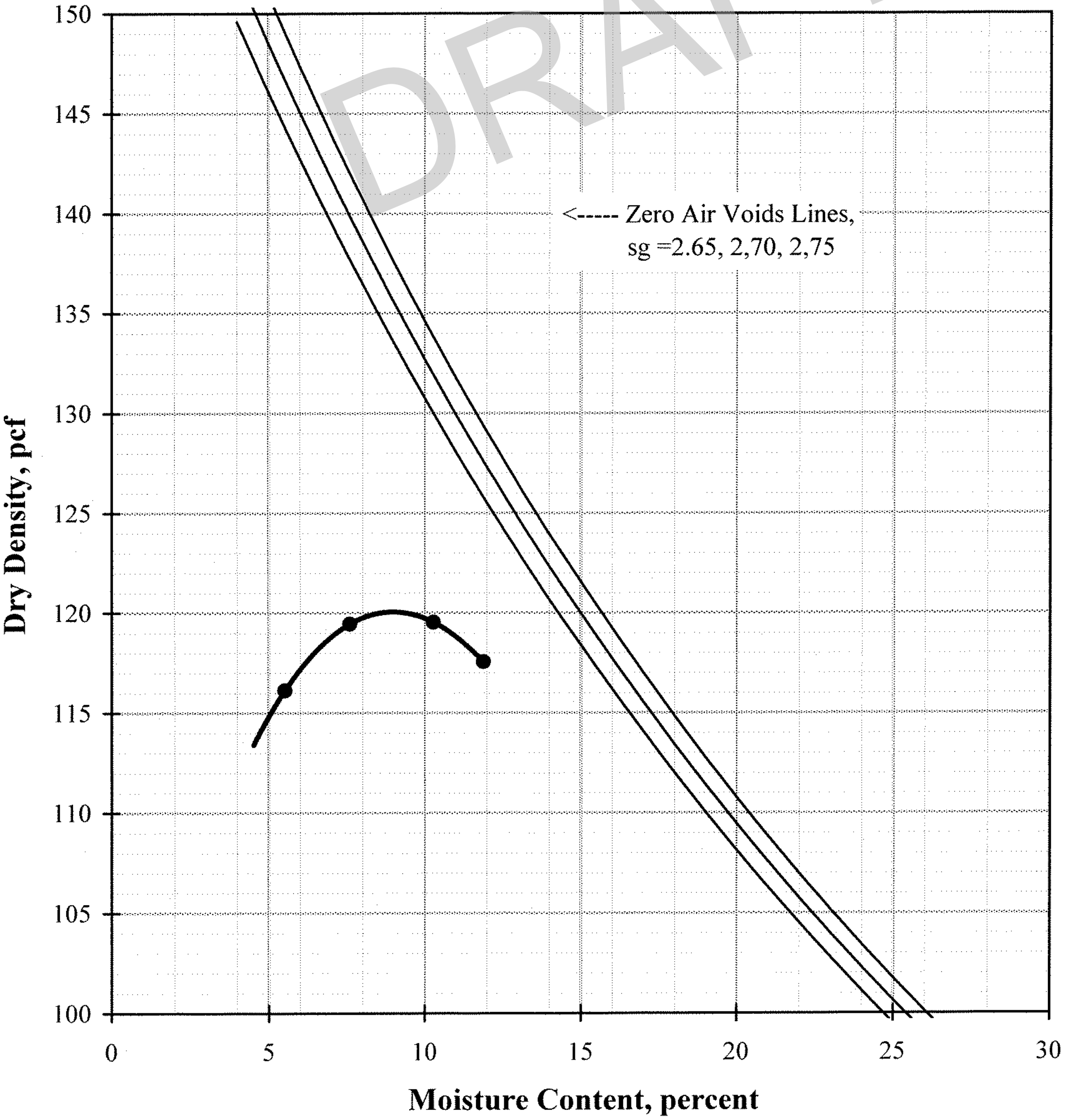
MAXIMUM DENSITY / OPTIMUM MOISTURE

ASTM D 1557-91 (Modified)

Job Name:	Oxnard College Park	Procedure Used: A
Sample ID:	B 2 @ 0-5	Prep. Method: Moist
Location:	0-5.	Rammer Type: Automatic
Description:	Dark Yellowish Brown Silty Sand	

Maximum Density: **120 pcf**
Optimum Moisture: **9%**

Sieve Size	% Retained
3/4"	0.0
3/8"	0.0
#4	0.4



VT-23965-01

MAXIMUM DENSITY / OPTIMUM MOISTURE

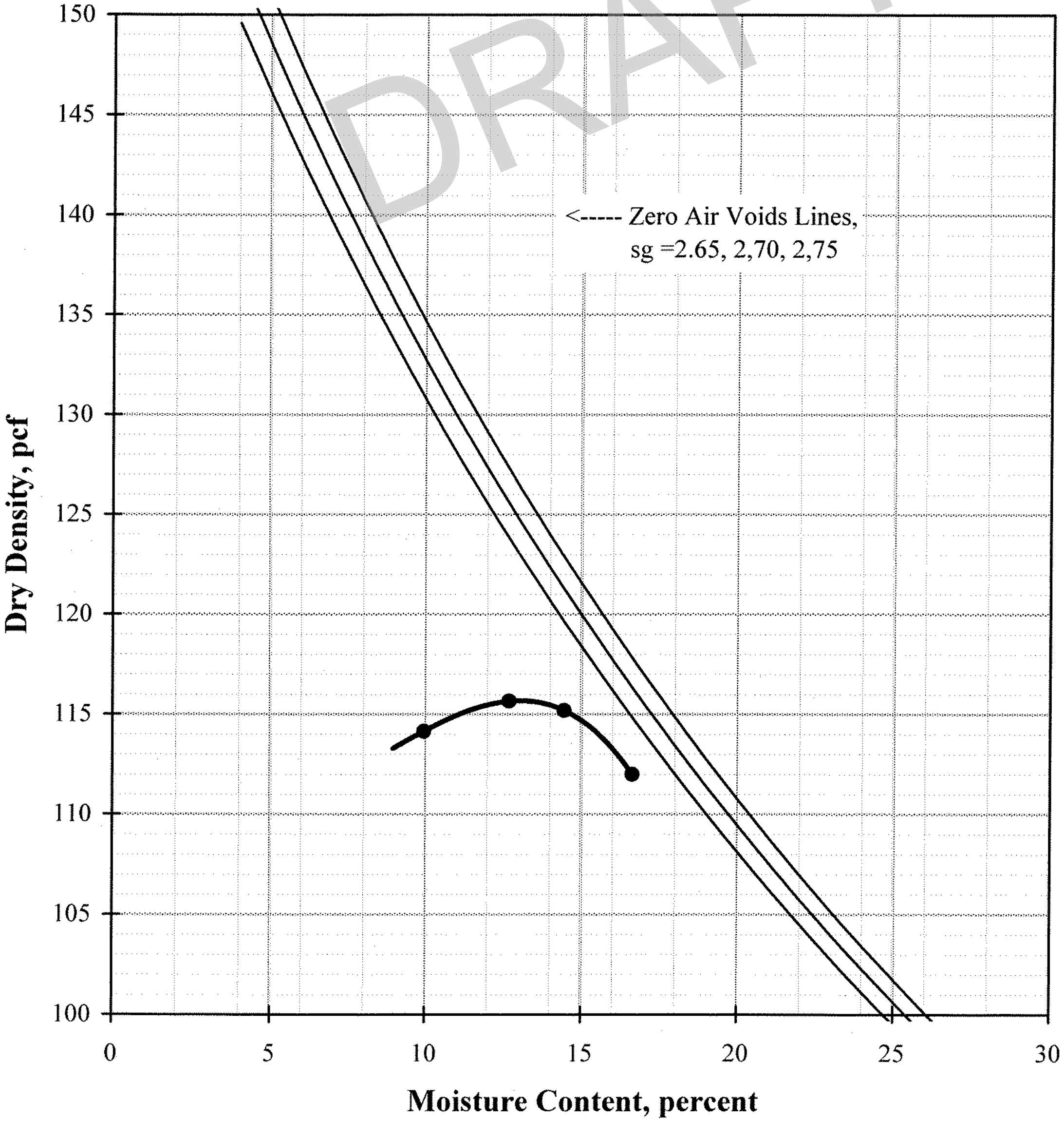
ASTM D 1557-91 (Modified)

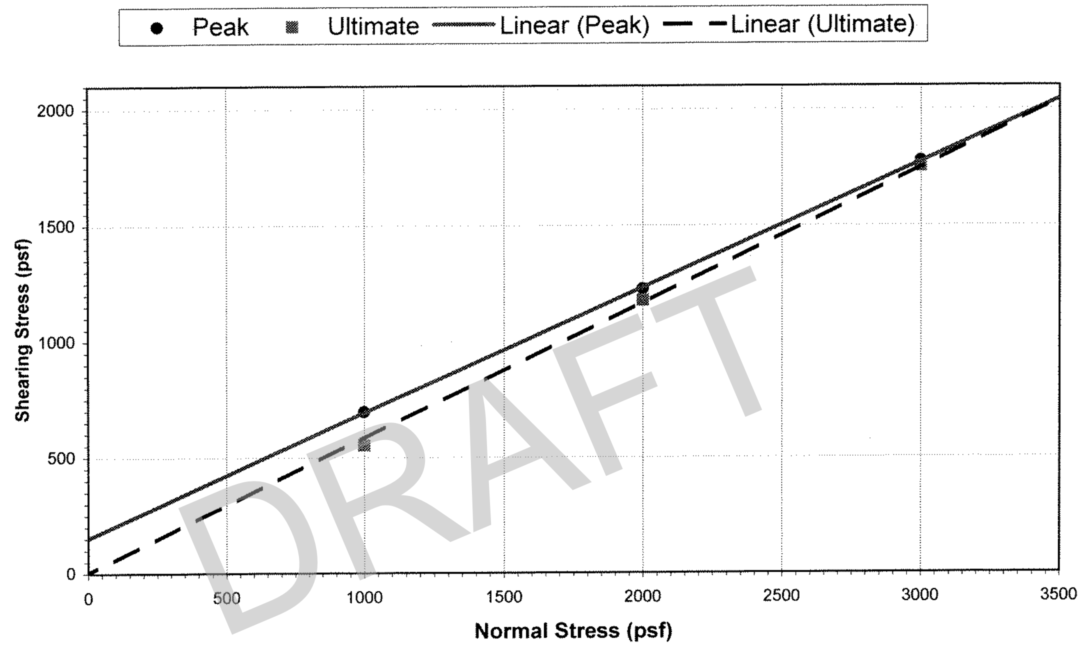
Job Name: Oxnard Collele Park
Sample ID: B 5 @ 0-5
Location: 0-5
Description: Olive Brown Clayey Sandy Silt

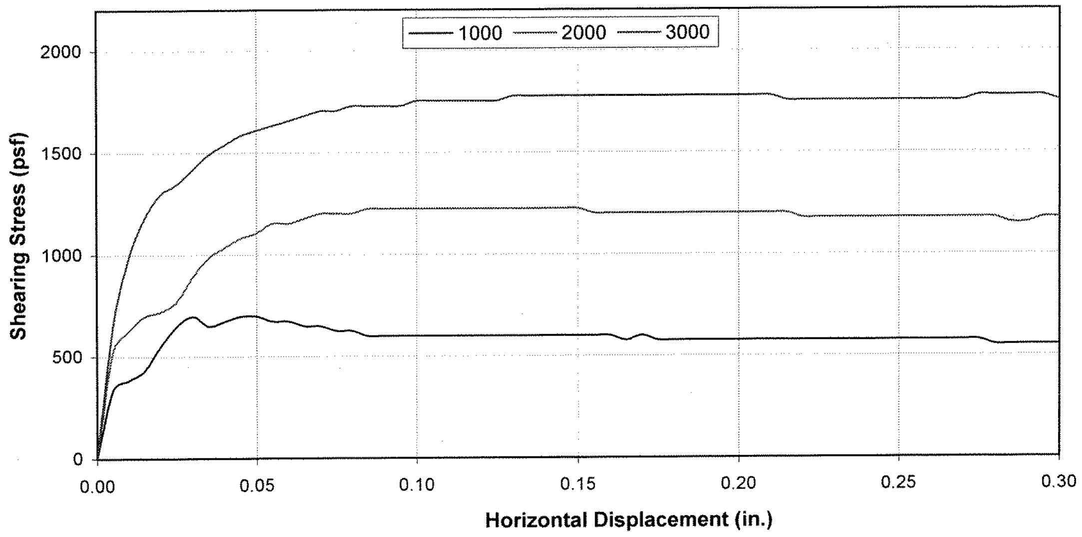
Procedure Used: A
Prep. Method: Moist
Rammer Type: Automatic

Maximum Density: **115.5 pcf**
Optimum Moisture: **13%**

Sieve Size	% Retained
3/4"	0.0
3/8"	0.0
#4	0.3







DIRECT SHEAR DATA*

Sample Location: B 1 @ 0-5
Sample Description: Clayey Silty Sand
Dry Density (pcf): 103.6
Intial % Moisture: 12.5
Average Degree of Saturation: 100.0
Shear Rate (in/min): 0.0277 in/min

Normal stress (psf)	1000	2000	3000
Peak stress (psf)	696	1224	1776
Ultimate stress (psf)	552	1176	1752

	Peak	Ultimate
ϕ Angle of Friction (degrees):	28	30
c Cohesive Strength (psf):	150	0

Test Type: Peak,Ultimate

* Test Method: ASTM D-3080

DIRECT SHEAR TEST

Oxnard College Park

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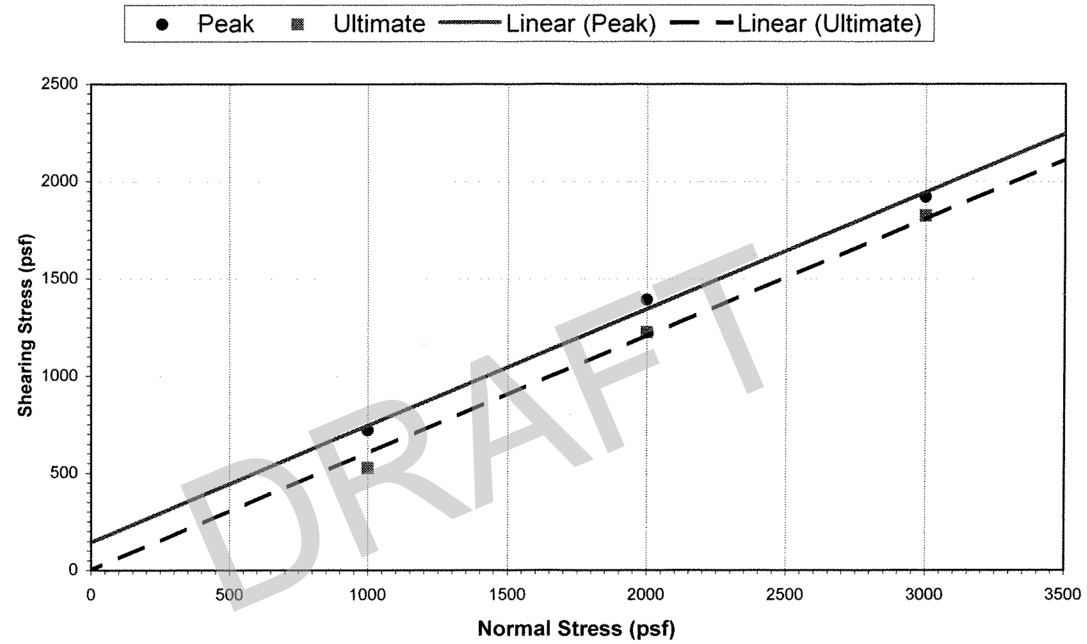

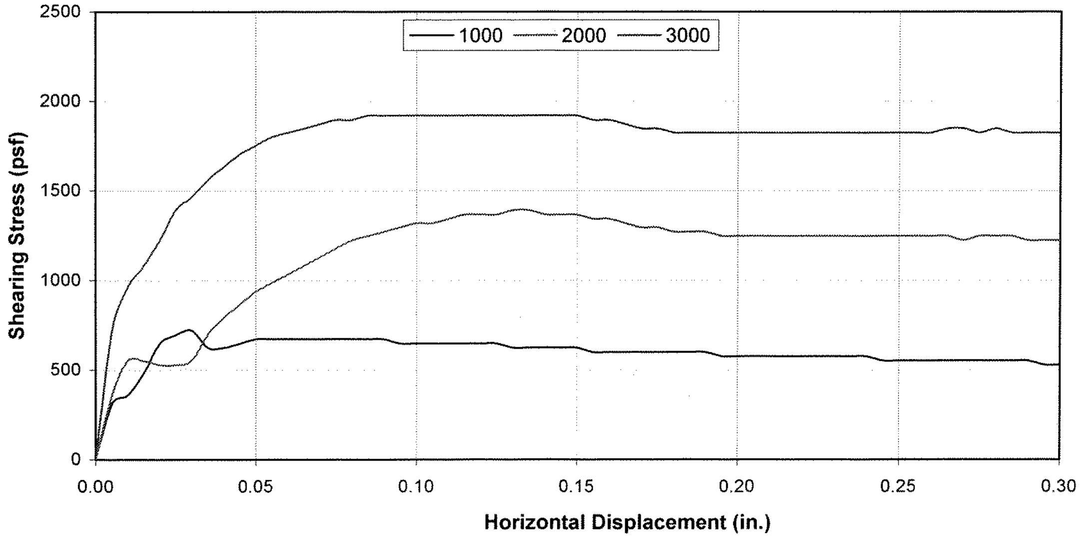

DIRECT SHEAR DATA*

Sample Location:	B 2 @ 0-5
Sample Description:	Silty Sand
Dry Density (pcf):	107.1
Intial % Moisture:	9
Average Degree of Saturation:	87.8
Shear Rate (in/min):	0.0211 in/min

Normal stress (psf)	1000	2000	3000
Peak stress (psf)	720	1392	1920
Ultimate stress (psf)	528	1224	1824

	Peak	Ultimate
ϕ Angle of Friction (degrees):	31	32
c Cohesive Strength (psf):	140	0

Test Type: Peak,Ultimate

* Test Method: ASTM D-3080

DIRECT SHEAR TEST

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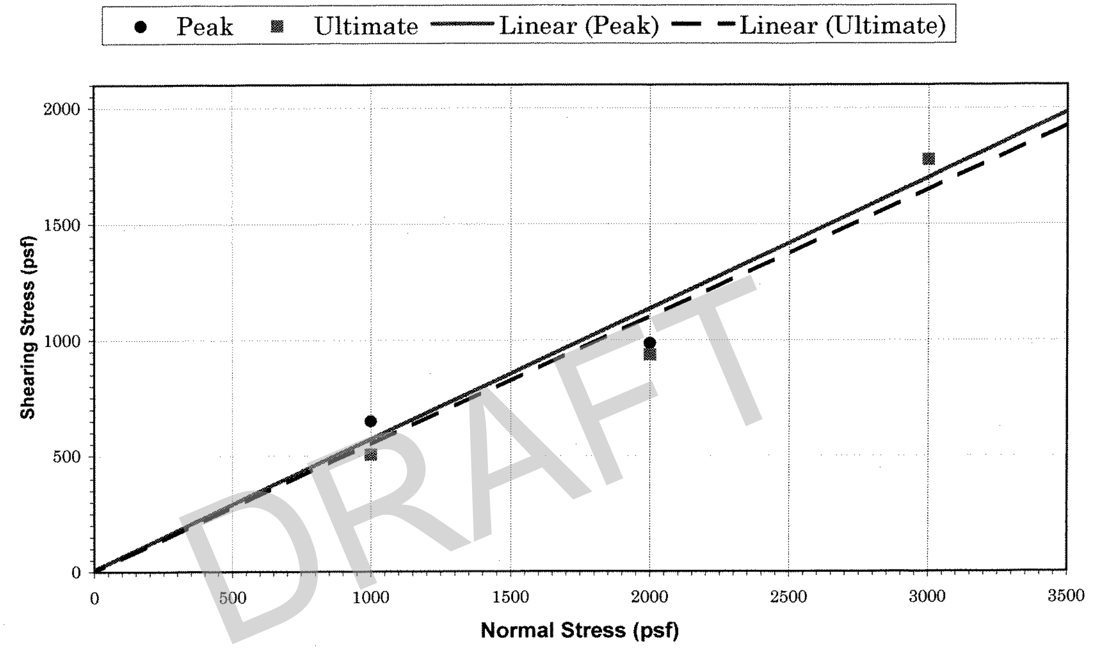

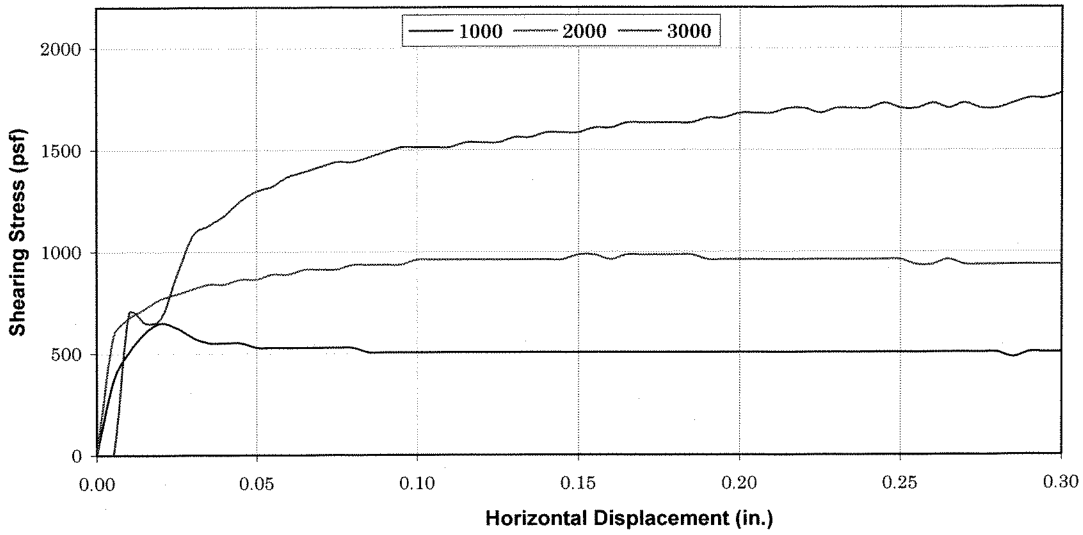

DIRECT SHEAR DATA*

Sample Location: B 5 @ 0-5
Sample Description: Sandy Clayey Silt
Dry Density (pcf): 103.7
Intial % Moisture: 13
Average Degree of Saturation: 100.0
Shear Rate (in/min): 0.02 in/min

Normal stress (psf)	1000	2000	3000
Peak stress (psf)	648	984	1776
Ultimate stress (psf)	504	936	1776

	Peak	Ultimate
ϕ Angle of Friction (degrees):	29	30
c Cohesive Strength (psf):	0	0

Test Type: Peak,Ultimate

* Test Method: ASTM D-3080

DIRECT SHEAR TEST

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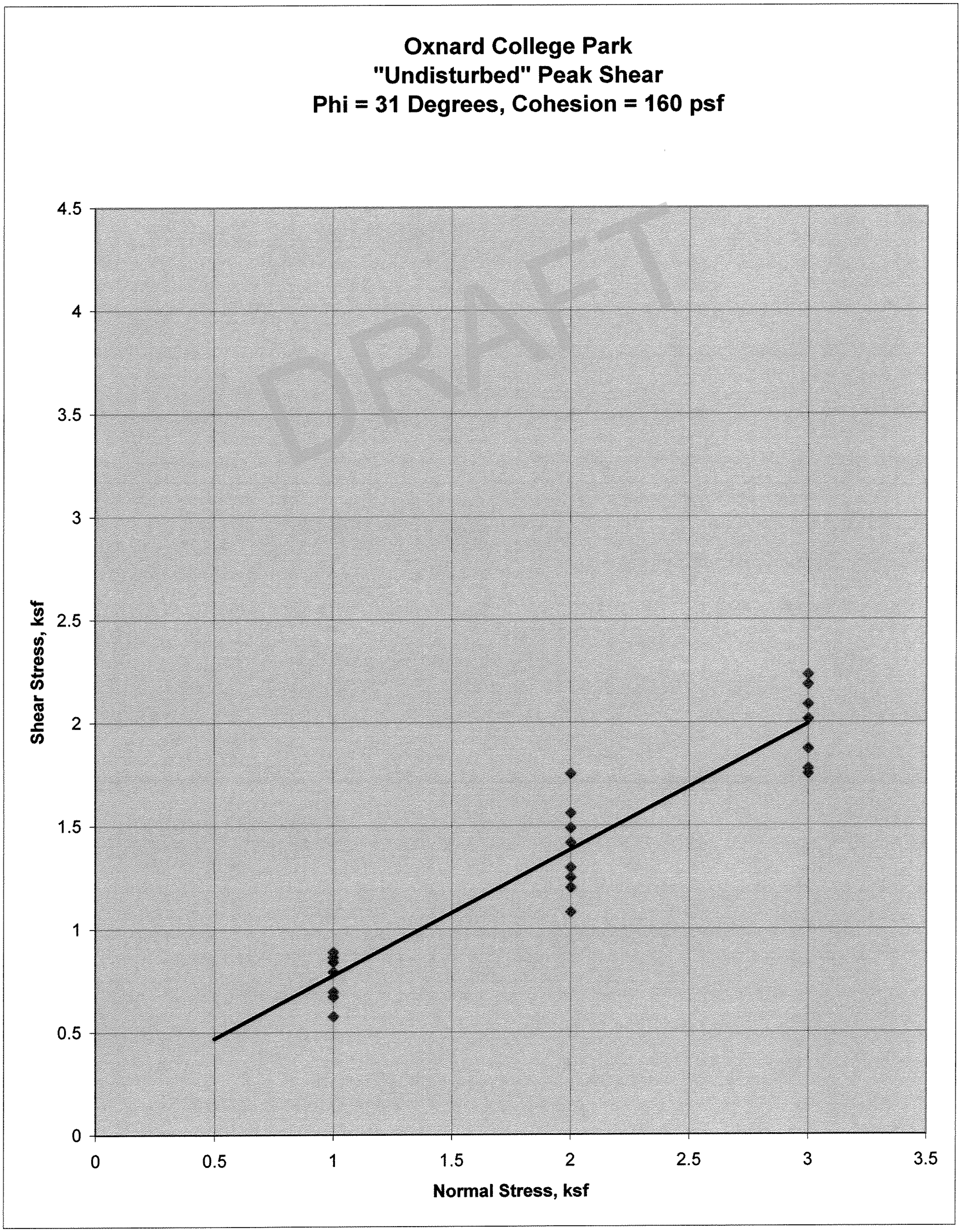
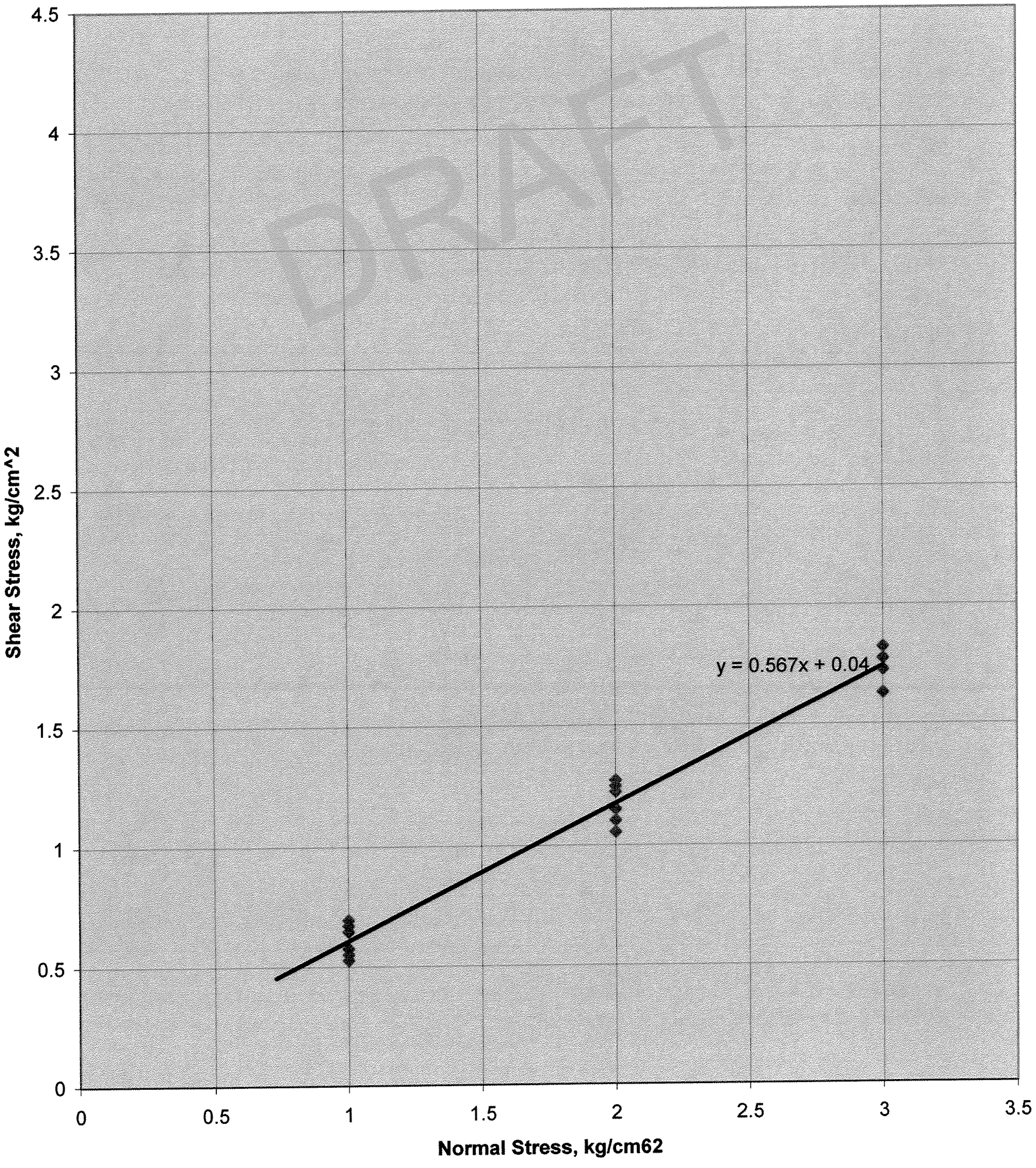
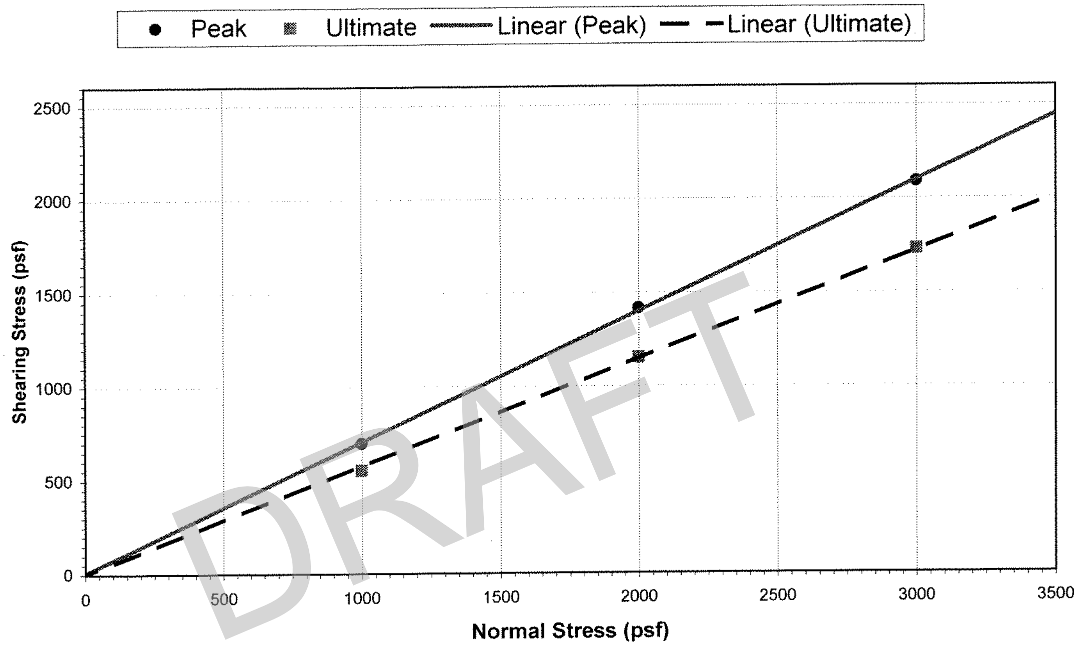
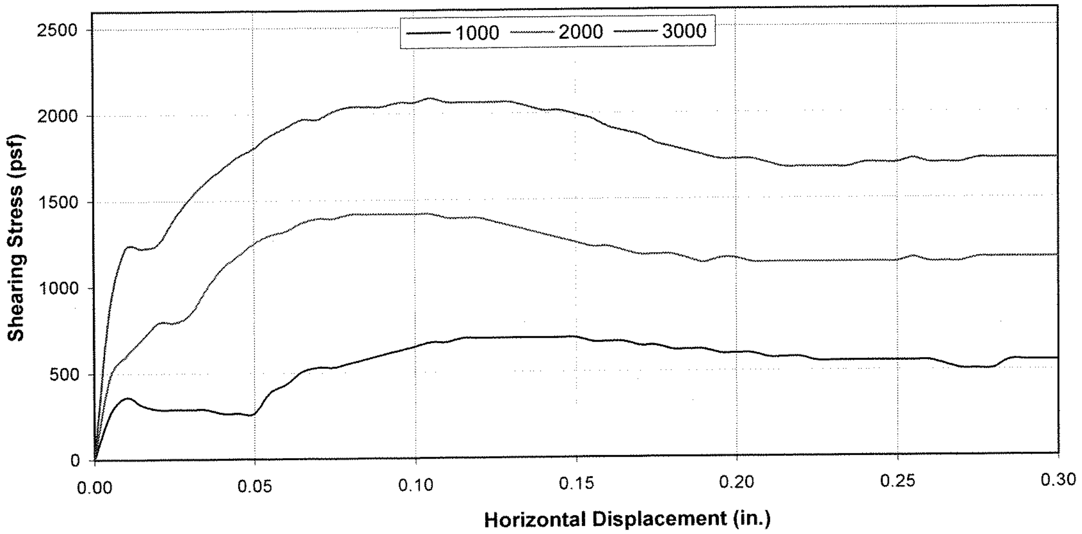


Oxnard College Park
"Undisturbed" Peak Shear
Phi = 31 Degrees, Cohesion = 160 psf

Oxnard College Park
"Undisturbed" Ultimate Shear
Phi = 29 Degrees, Cohesion = 40 psf







DIRECT SHEAR DATA*

Sample Location: B 4 @ 4
Sample Description: Med Sand
Dry Density (pcf): 95.8
Intial % Moisture: 6.6
Average Degree of Saturation: 100.0
Shear Rate (in/min): 0.0144 in/min

Normal stress (psf)	1000	2000	3000
Peak stress (psf)	696	1416	2088
Ultimate stress (psf)	552	1152	1728

	Peak	Ultimate
ϕ Angle of Friction (degrees):	35	30
c Cohesive Strength (psf):	0	0

Test Type: Peak,Ultimate

* Test Method: ASTM D-3080

DIRECT SHEAR TEST

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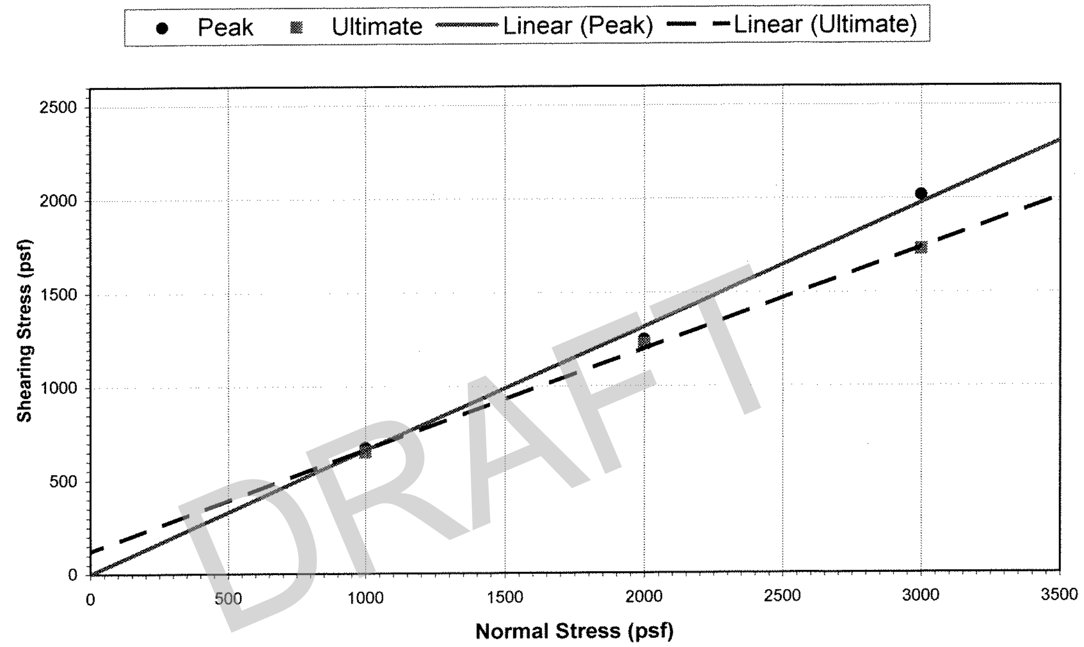

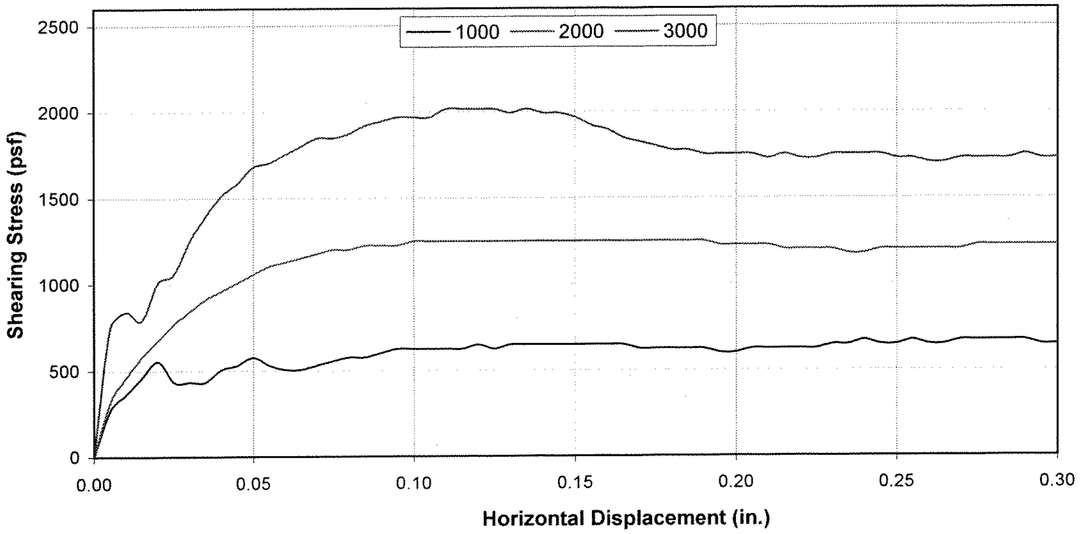

DIRECT SHEAR DATA*

Sample Location: B 4 @ 6
Sample Description: Med to Fine Sand
Dry Density (pcf): 94.4
Intial % Moisture: 6.6
Average Degree of Saturation: 91.7
Shear Rate (in/min): 0.009 in/min

Normal stress (psf)	1000	2000	3000
Peak stress (psf)	672	1248	2016
Ultimate stress (psf)	648	1224	1728

	Peak	Ultimate
ϕ Angle of Friction (degrees):	34	28
c Cohesive Strength (psf):	0	120

Test Type: Peak,Ultimate

* Test Method: ASTM D-3080

DIRECT SHEAR TEST

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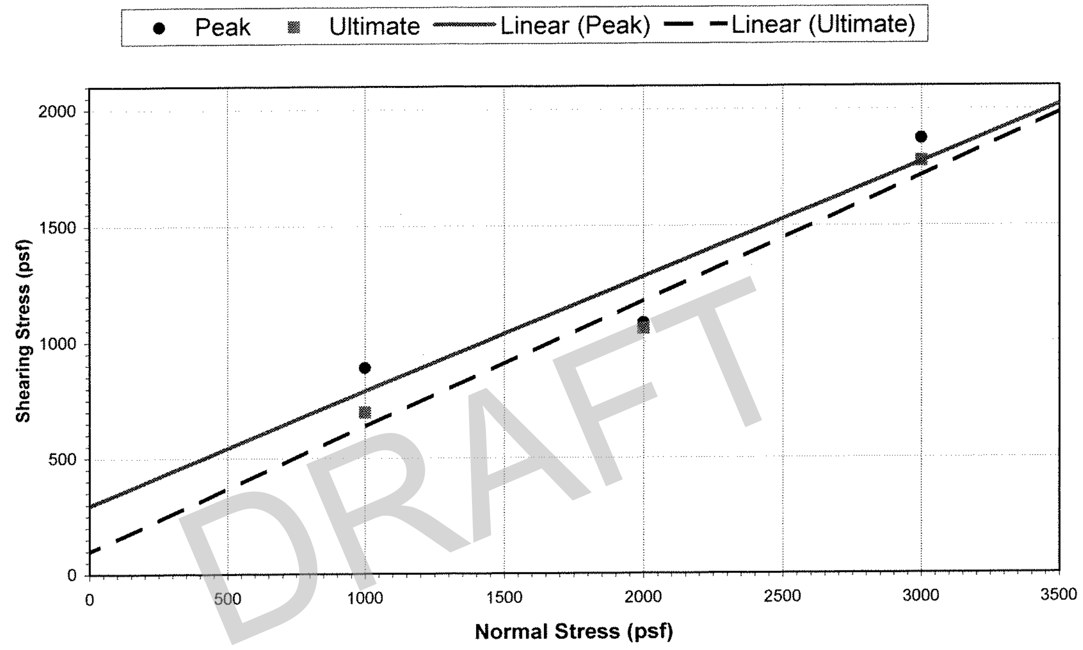

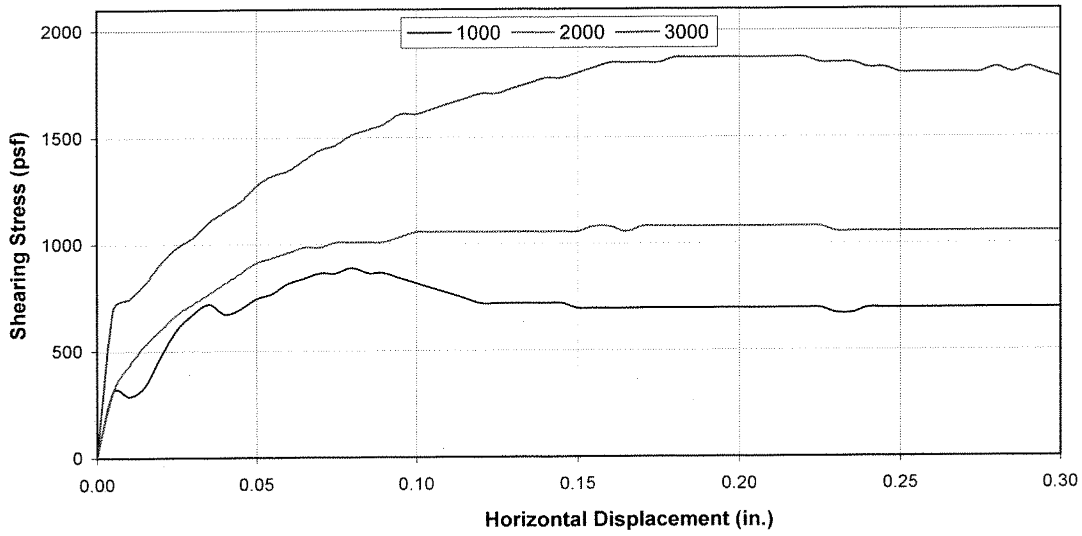

DIRECT SHEAR DATA*

Sample Location: B 12 @ 4
Sample Description: Clayey Silty Sand Sandy Silt
Dry Density (pcf): 92.7
Intial % Moisture: 23.5
Average Degree of Saturation: 100.0
Shear Rate (in/min): 0.0225 in/min

Normal stress (psf)	1000	2000	3000
Peak stress (psf)	888	1080	1872
Ultimate stress (psf)	696	1056	1776

	Peak	Ultimate
ϕ Angle of Friction (degrees):	26	28
c Cohesive Strength (psf):	290	90

Test Type: Peak,Ultimate

DIRECT SHEAR TEST

Oxnard College Park

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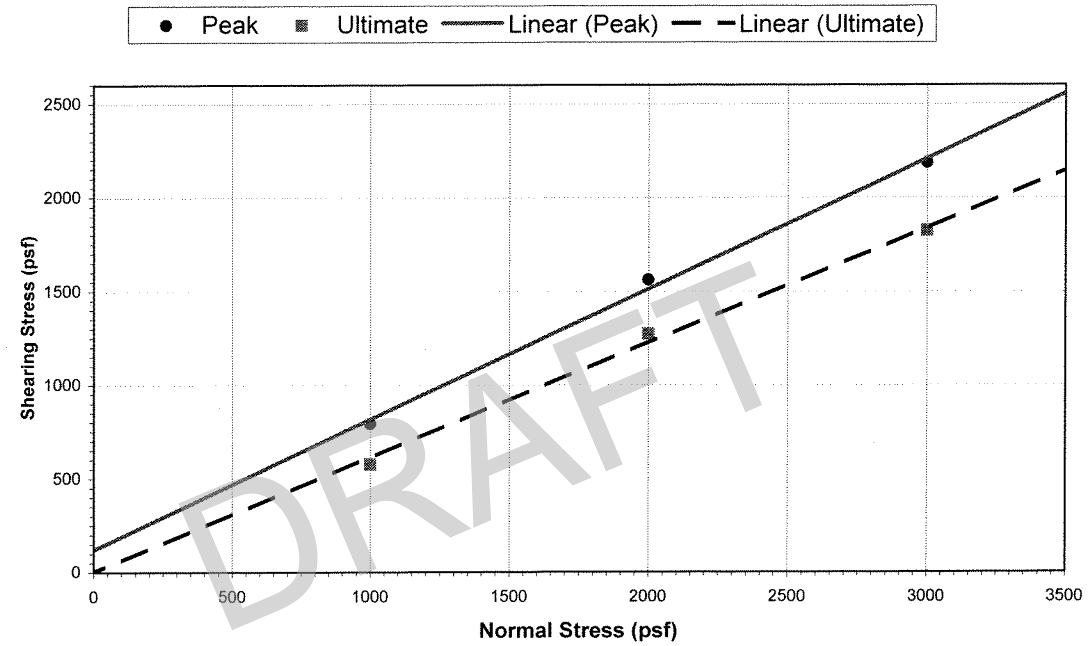
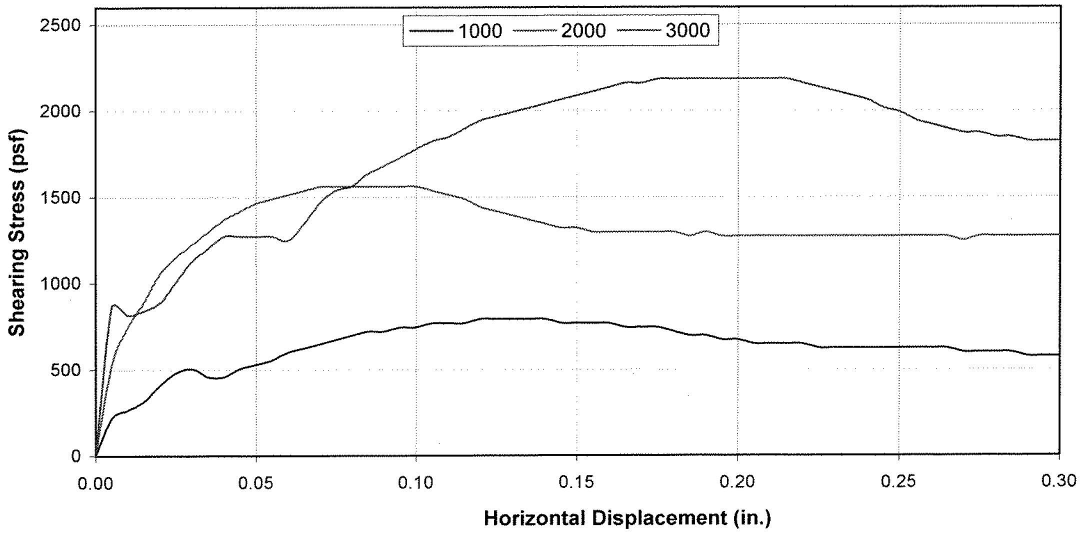
* Test Method: ASTM D-3080





DIRECT SHEAR DATA*

Sample Location: B 13 @ 6
Sample Description: Silty Coarse to Med Sand
Dry Density (pcf): 94.0
Intial % Moisture: 21.1
Average Degree of Saturation: 98.8
Shear Rate (in/min): 0.0255 in/min

Normal stress (psf)	1000	2000	3000
Peak stress (psf)	792	1560	2184
Ultimate stress (psf)	576	1272	1824

	Peak	Ultimate
ϕ Angle of Friction (degrees):	35	32
c Cohesive Strength (psf):	120	0

Test Type: Peak,Ultimate

* Test Method: ASTM D-3080

DIRECT SHEAR TEST

Oxnard College Park

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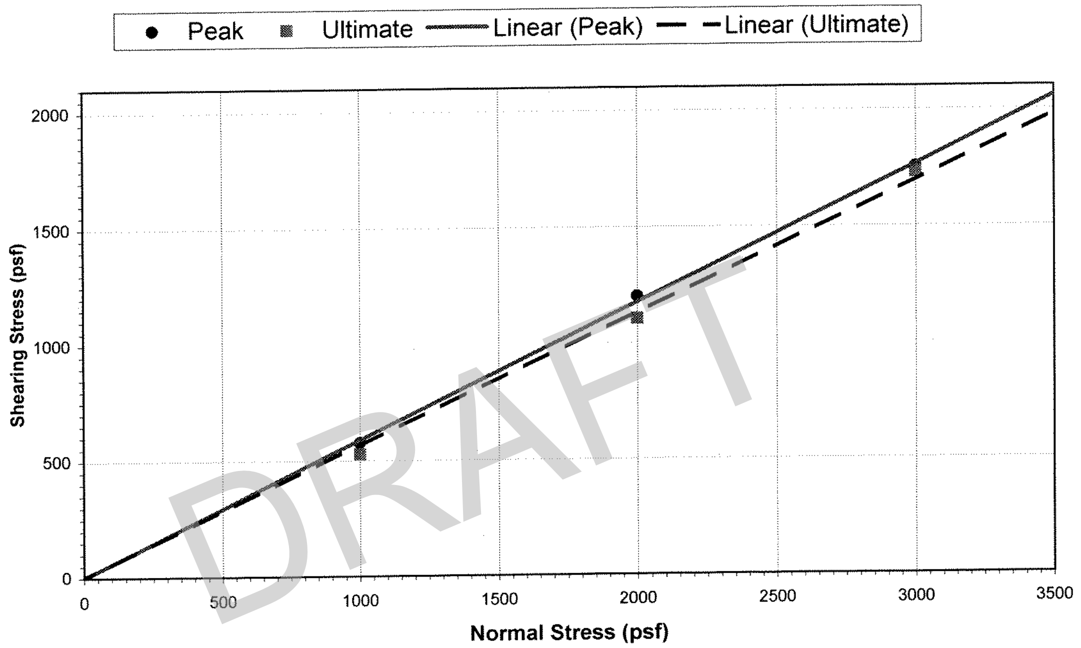
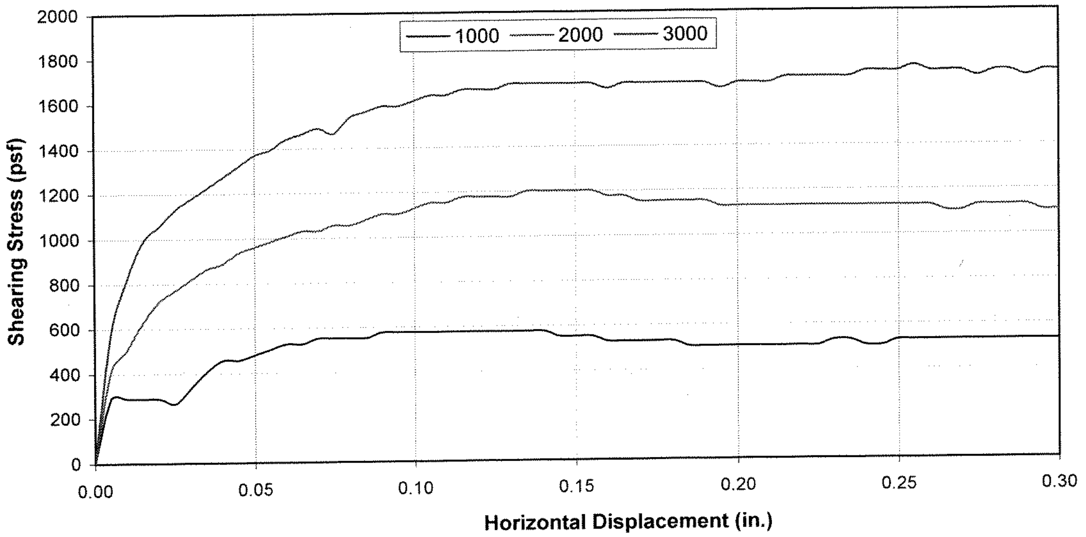
7/23/2007 VT-23965-01





DIRECT SHEAR DATA*

Sample Location: B 15 @ 4
Sample Description: Clayey Silty Sand Sandy Silt
Dry Density (pcf): 95.2
Intial % Moisture: 24.2
Average Degree of Saturation: 100.0
Shear Rate (in/min): 0.005 in/min

Normal stress (psf)	1000	2000	3000
Peak stress (psf)	576	1200	1752
Ultimate stress (psf)	528	1104	1728

	Peak	Ultimate
ϕ Angle of Friction (degrees):	30	30
c Cohesive Strength (psf):	0	0

Test Type: Peak,Ultimate

* Test Method: ASTM D-3080

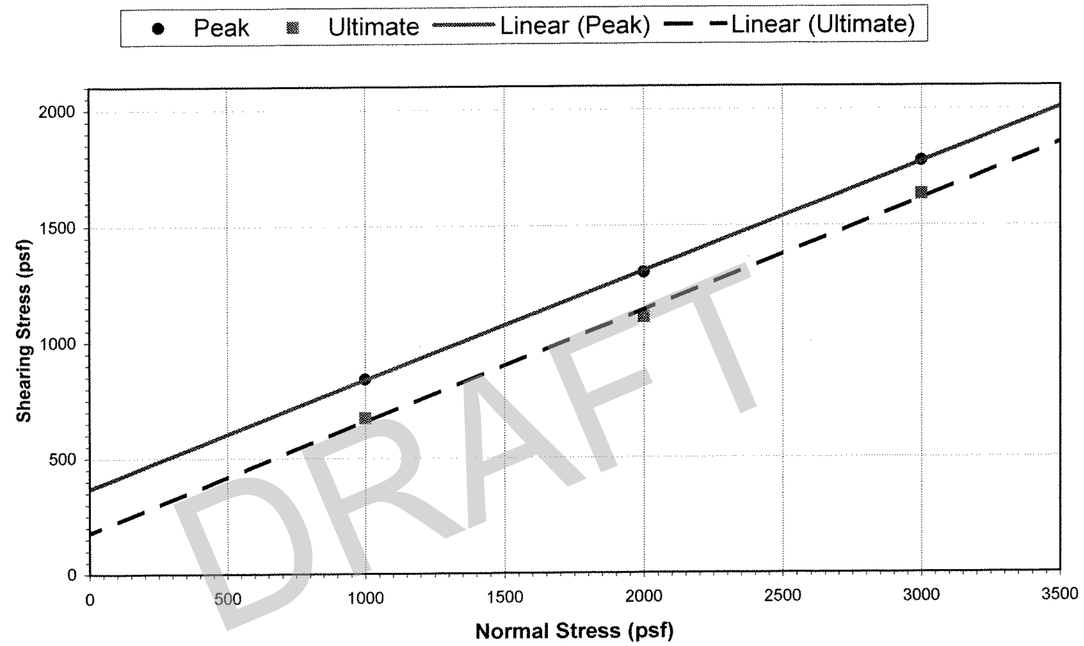
DIRECT SHEAR TEST

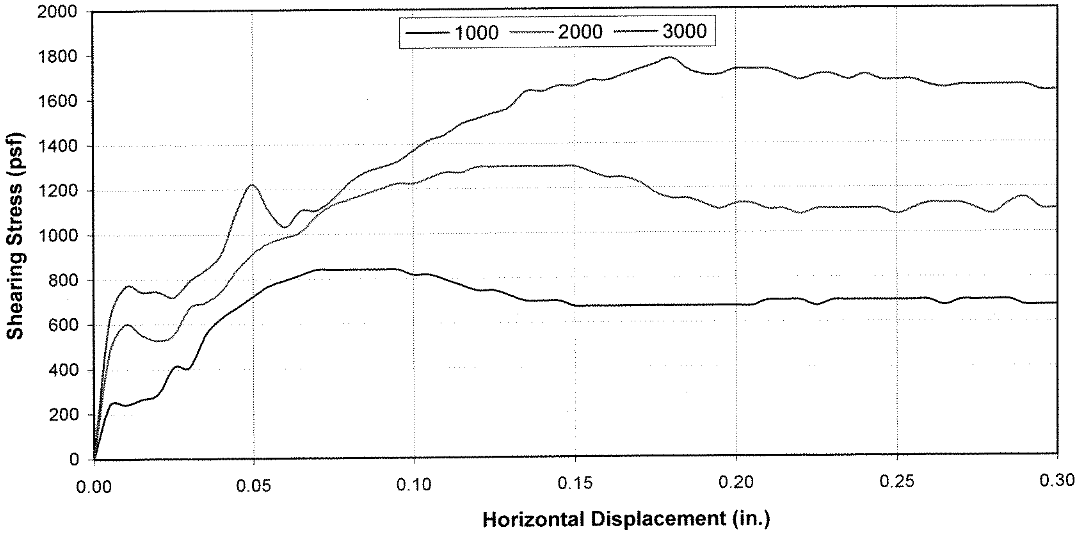
Oxnard College Park

Oxnard

Earth Systems
Southern California

7/23/2007 VT-23965-01





DIRECT SHEAR DATA*

Sample Location:	B 16 @ 6
Sample Description:	Clayey Silty Sand
Dry Density (pcf):	110.1
Intial % Moisture:	6.6
Average Degree of Saturation:	82.2
Shear Rate (in/min):	0.018 in/min

Normal stress (psf)	1000	2000	3000
Peak stress (psf)	840	1296	1776
Ultimate stress (psf)	672	1104	1632

	Peak	Ultimate
ϕ Angle of Friction (degrees):	25	26
c Cohesive Strength (psf):	360	170

Test Type: Peak,Ultimate

* Test Method: ASTM D-3080

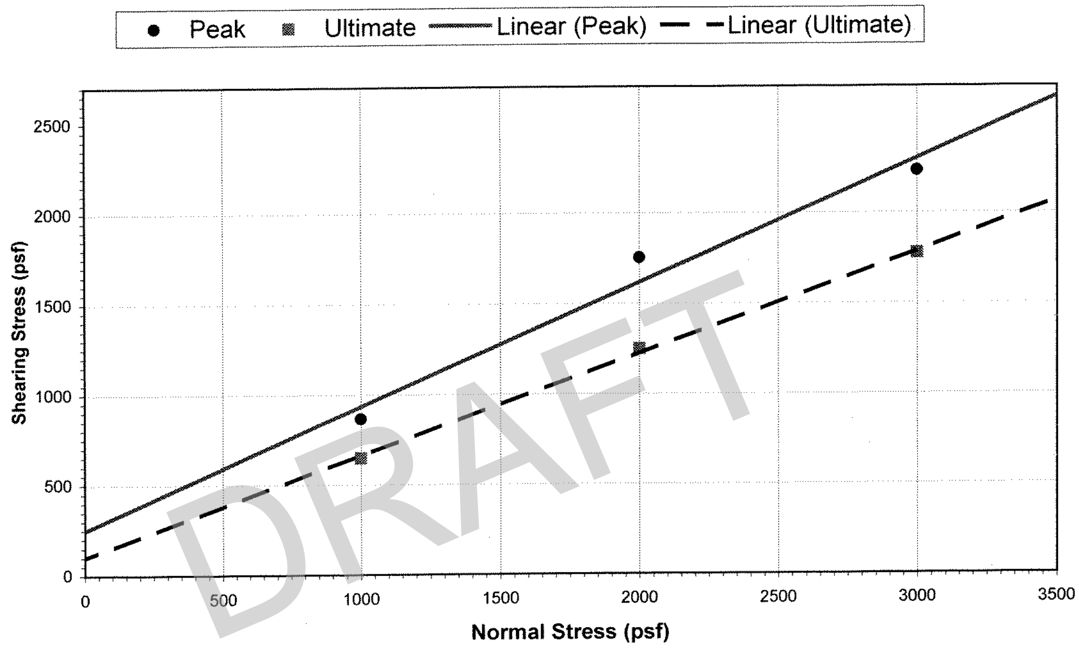
DIRECT SHEAR TEST

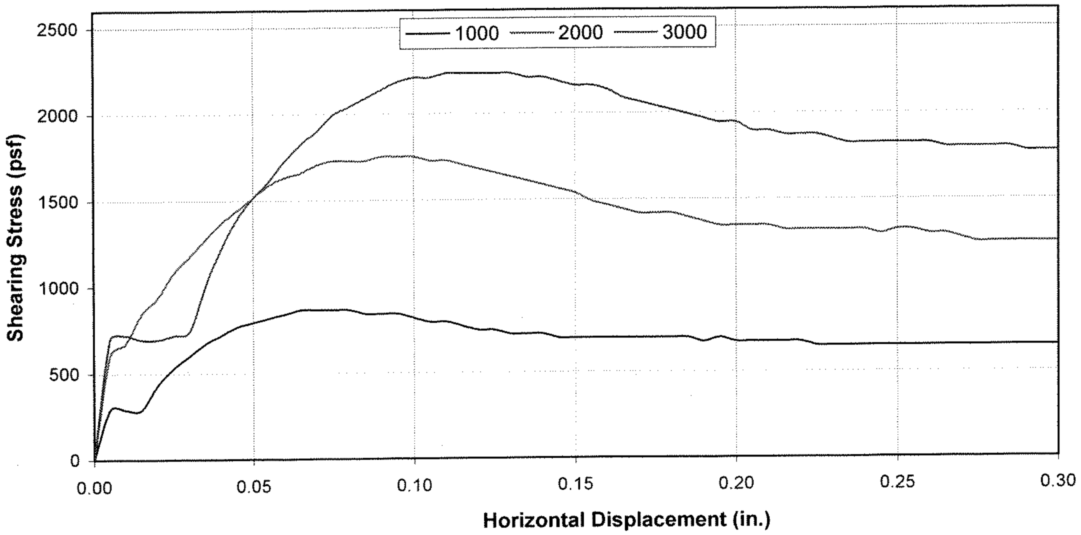
Oxnard College Park

Oxnard

Earth Systems
Southern California

7/23/2007 VT-23965-01





DIRECT SHEAR DATA*

Sample Location: B 18 @ 4
Sample Description: Med to Coarse Sand
Dry Density (pcf): 113.8
Intial % Moisture: 12.8
Average Degree of Saturation: 91.5
Shear Rate (in/min): 0.012 in/min

Normal stress (psf)	1000	2000	3000
Peak stress (psf)	864	1752	2232
Ultimate stress (psf)	648	1248	1776

	Peak	Ultimate
ϕ Angle of Friction (degrees):	34	29
c Cohesive Strength (psf):	240	90

Test Type: Peak,Ultimate

* Test Method: ASTM D-3080

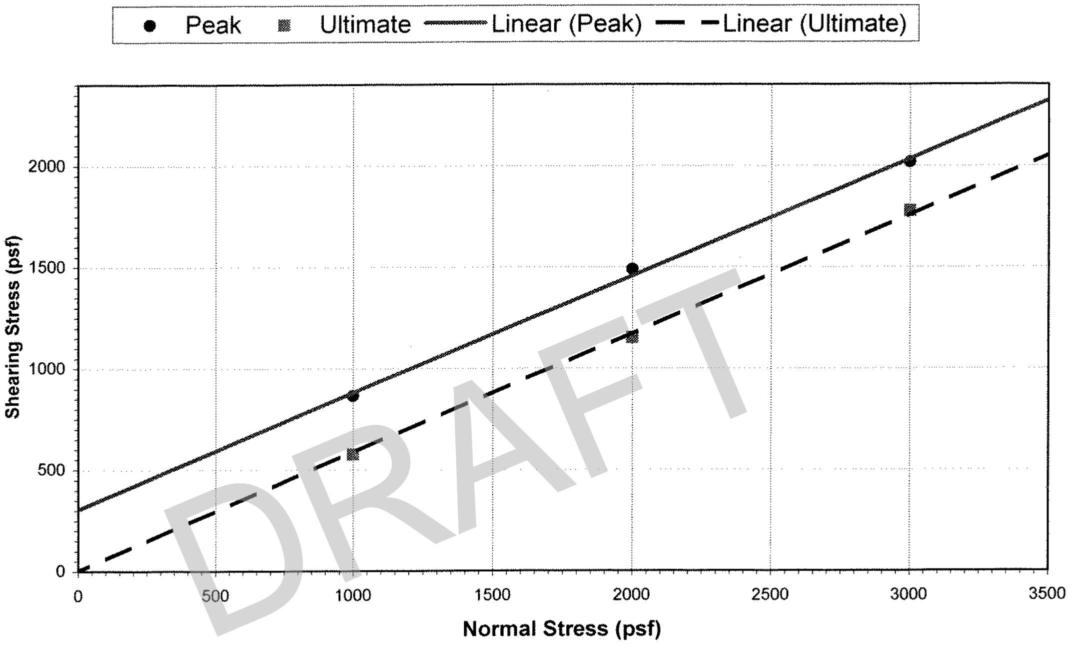
DIRECT SHEAR TEST

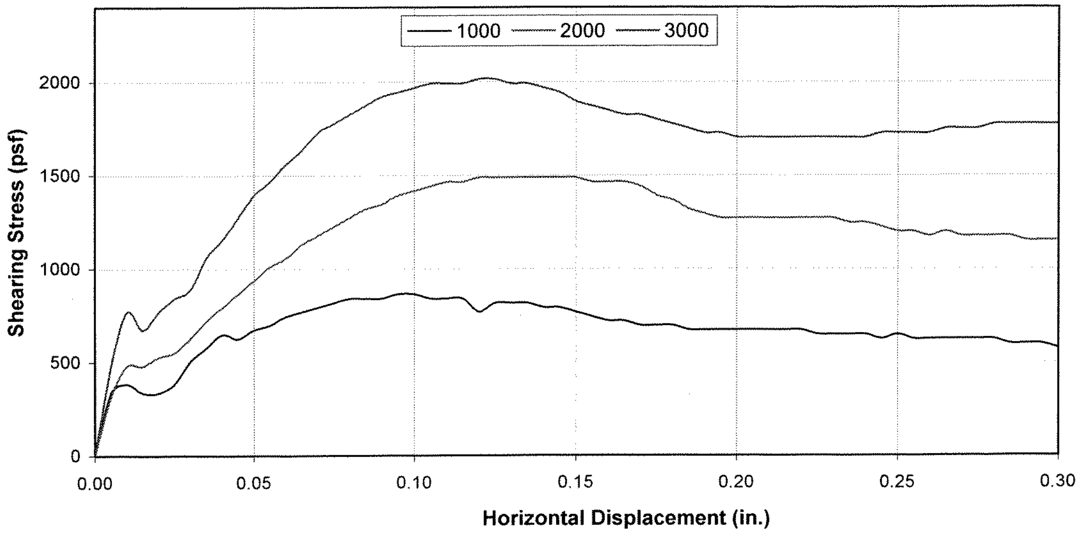
Oxnard College Park

Oxnard

Earth Systems
Southern California

7/23/2007	VT-23965-01





DIRECT SHEAR DATA*

Sample Location: B 23 @ 4
Sample Description: Silty Sand
Dry Density (pcf): 99.7
Intial % Moisture: 22.1
Average Degree of Saturation: 97.9
Shear Rate (in/min): 0.012 in/min

Normal stress (psf)	1000	2000	3000
Peak stress (psf)	864	1488	2016
Ultimate stress (psf)	576	1152	1776

	Peak	Ultimate
ϕ Angle of Friction (degrees):	30	31
c Cohesive Strength (psf):	300	0

Test Type: Peak,Ultimate

* Test Method: ASTM D-3080

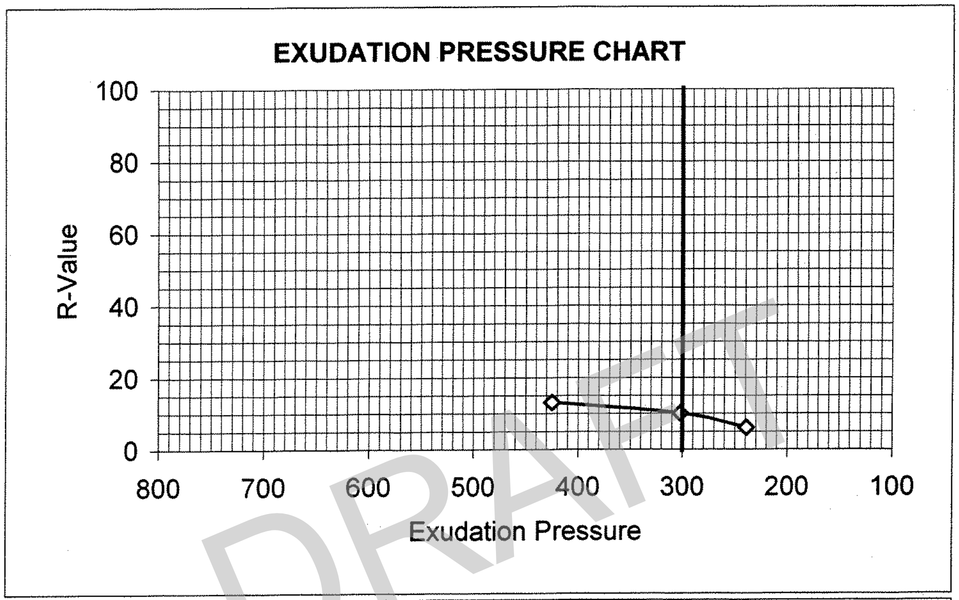
DIRECT SHEAR TEST

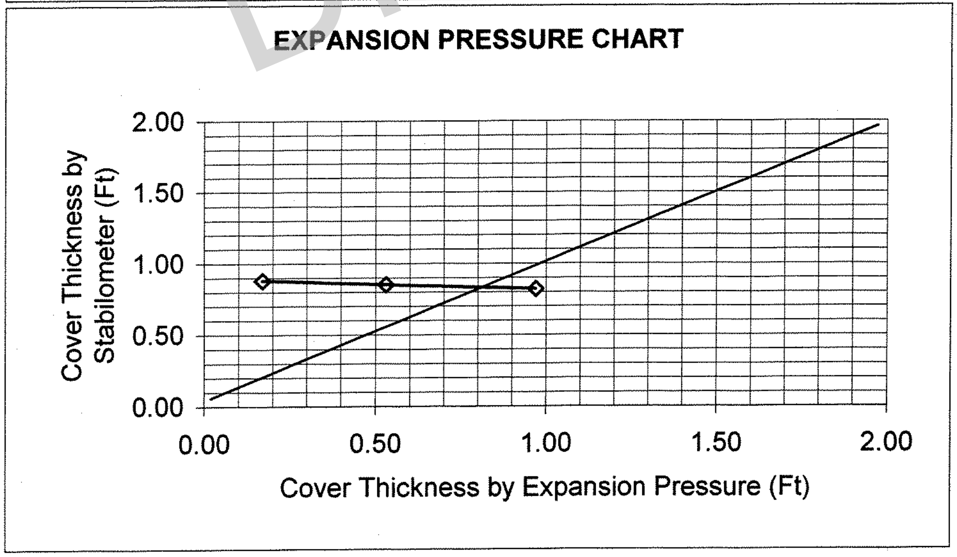
Oxnard College Park

Oxnard

Earth Systems
Southern California

7/23/2007 | VT-23965-01



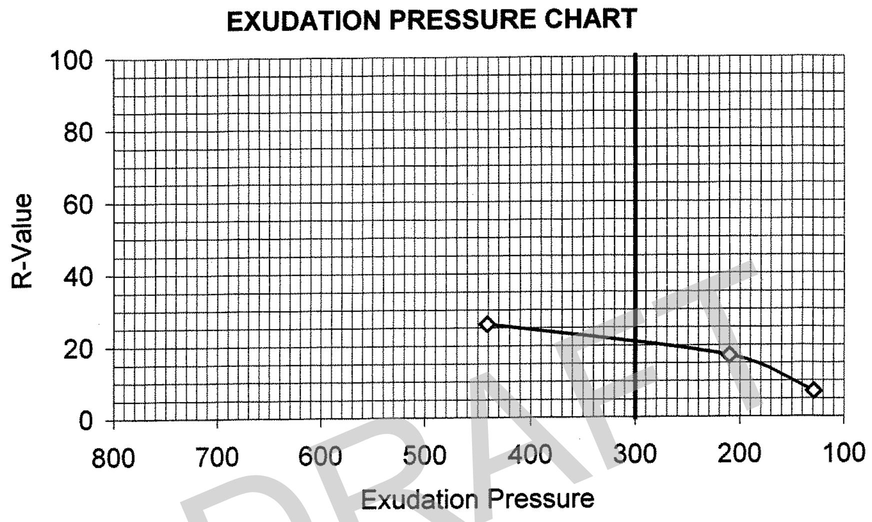


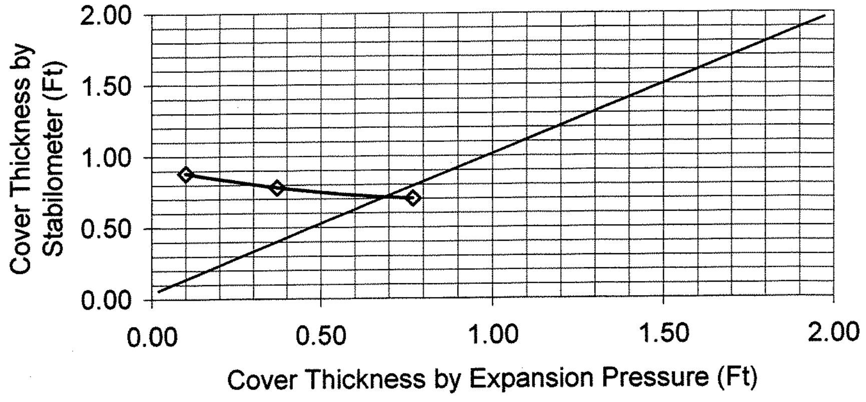
JOB NAME: Oxnard College Park
SAMPLE I. D.: Boring 9@0-5
SOIL DESCRIPTION: Fine to Coarse Sandy Clay with Silt (CL)

SPECIMEN NUMBER	A	B	C
EXUDATION PRESSURE	425	302	239
RESISTANCE VALUE	13	10	6
EXPANSION DIAL(0.0001")	29	16	5
EXPANSION PRESSURE (PSF)	125.6	69.3	21.7
% MOISTURE AT TEST	15.3	16.3	17.4
DRY DENSITY AT TEST	116.8	113.5	111.9

R-VALUE @ 300 PSI EXUDATION	10
R-VALUE by Expansion Pressure*	13

**Based on a Traffic Index of 5.0 and a Gravel Factor of 1.70*


EXUDATION PRESSURE CHART

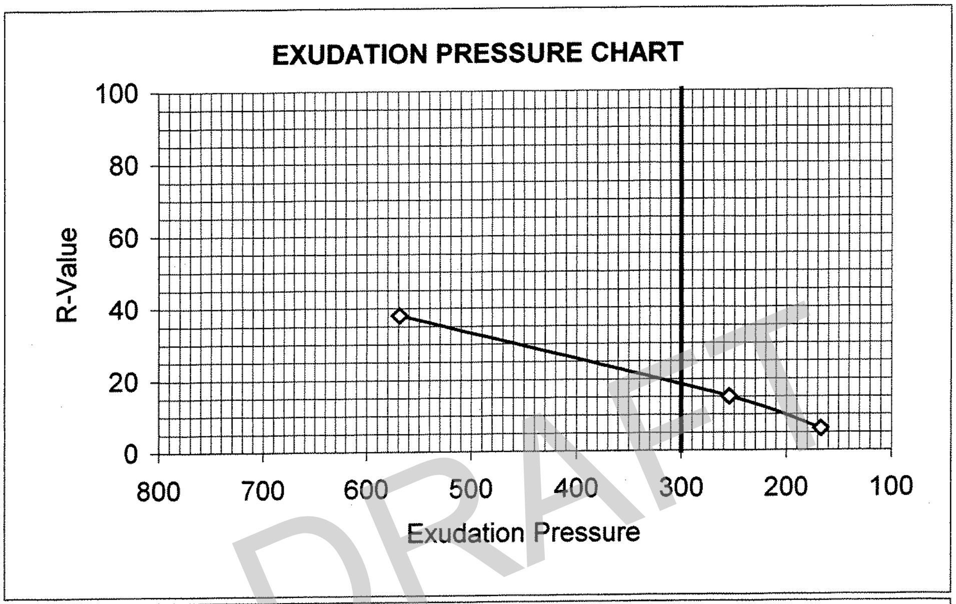

EXPANSION PRESSURE CHART

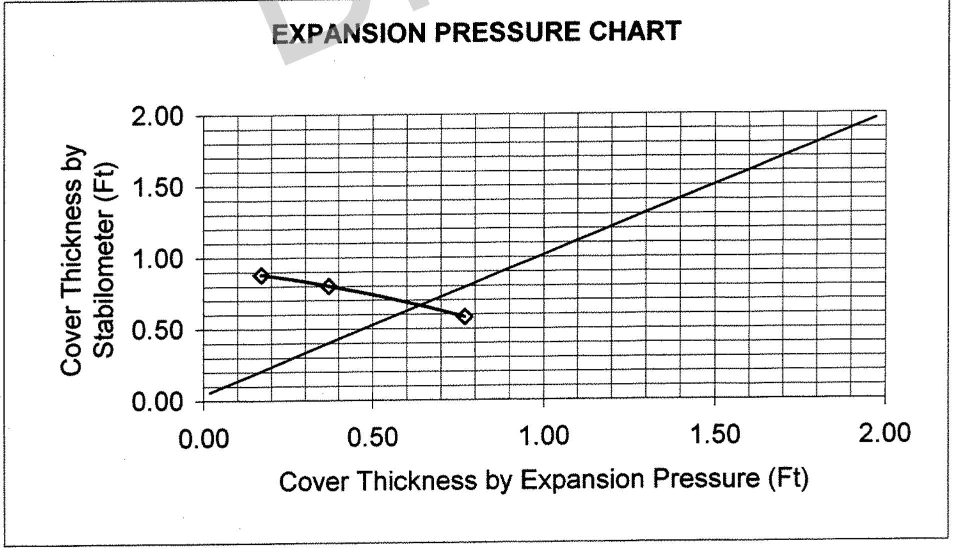
JOB NAME: Oxnard College Park
SAMPLE I. D.: Boring 11@0-3'
SOIL DESCRIPTION: Very Silty Fine to Medium Sand with Clay (SM)

SPECIMEN NUMBER	A	B	C
EXUDATION PRESSURE	441	210	129
RESISTANCE VALUE	26	17	7
EXPANSION DIAL(0.0001")	23	11	3
EXPANSION PRESSURE (PSF)	99.6	47.6	13.0
% MOISTURE AT TEST	13.4	15.8	17.0
DRY DENSITY AT TEST	114.8	110.3	108.9

R-VALUE @ 300 PSI EXUDATION	**21**
R-VALUE by Expansion Pressure*	**26**

**Based on a Traffic Index of 5.0 and a Gravel Factor of 1.70*





JOB NAME: Oxnard College Park
SAMPLE I. D.: Boring 25@0-5
SOIL DESCRIPTION: Very Silty Fine Sand with Clay (SM/ML)

SPECIMEN NUMBER	A	B	C
EXUDATION PRESSURE	569	255	167
RESISTANCE VALUE	38	15	6
EXPANSION DIAL(0.0001")	23	11	5
EXPANSION PRESSURE (PSF)	99.6	47.6	21.7
% MOISTURE AT TEST	12.9	15.4	17.8
DRY DENSITY AT TEST	116.9	111.7	106.5

R-VALUE @ 300 PSI EXUDATION	18
R-VALUE by Expansion Pressure*	33

**Based on a Traffic Index of 5.0 and a Gravel Factor of 1.70*

VT-23965-01

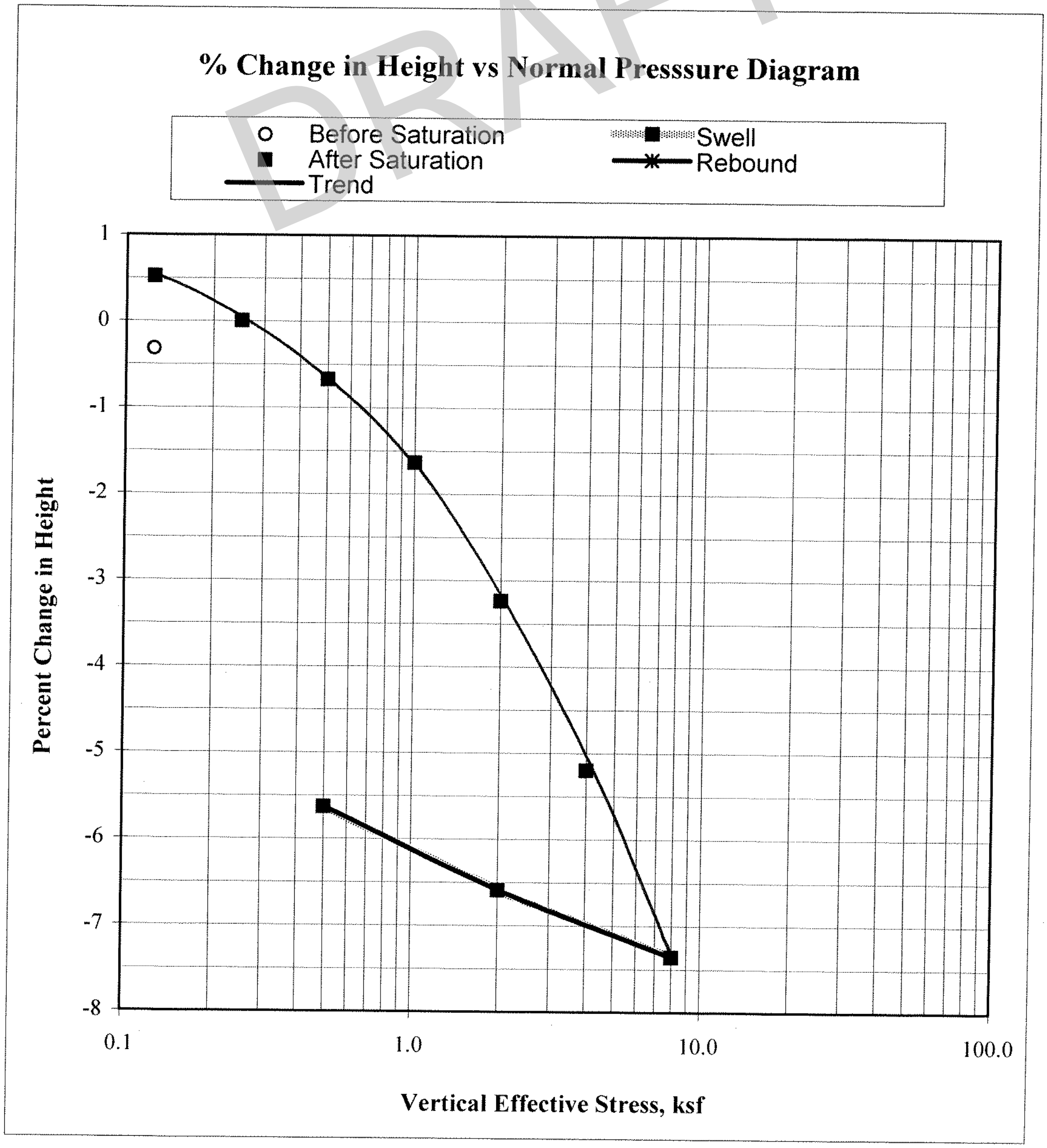
Jul 23, 2007

CONSOLIDATION TEST

ASTM D 2435-90

Oxnard College Park
B 1 @ 2
CL
Ring Sample

Initial Dry Density:	91.0 pcf
Initial Moisture, %:	25.1%
Specific Gravity:	2.67 (assumed
Initial Void Ratio:	0.833



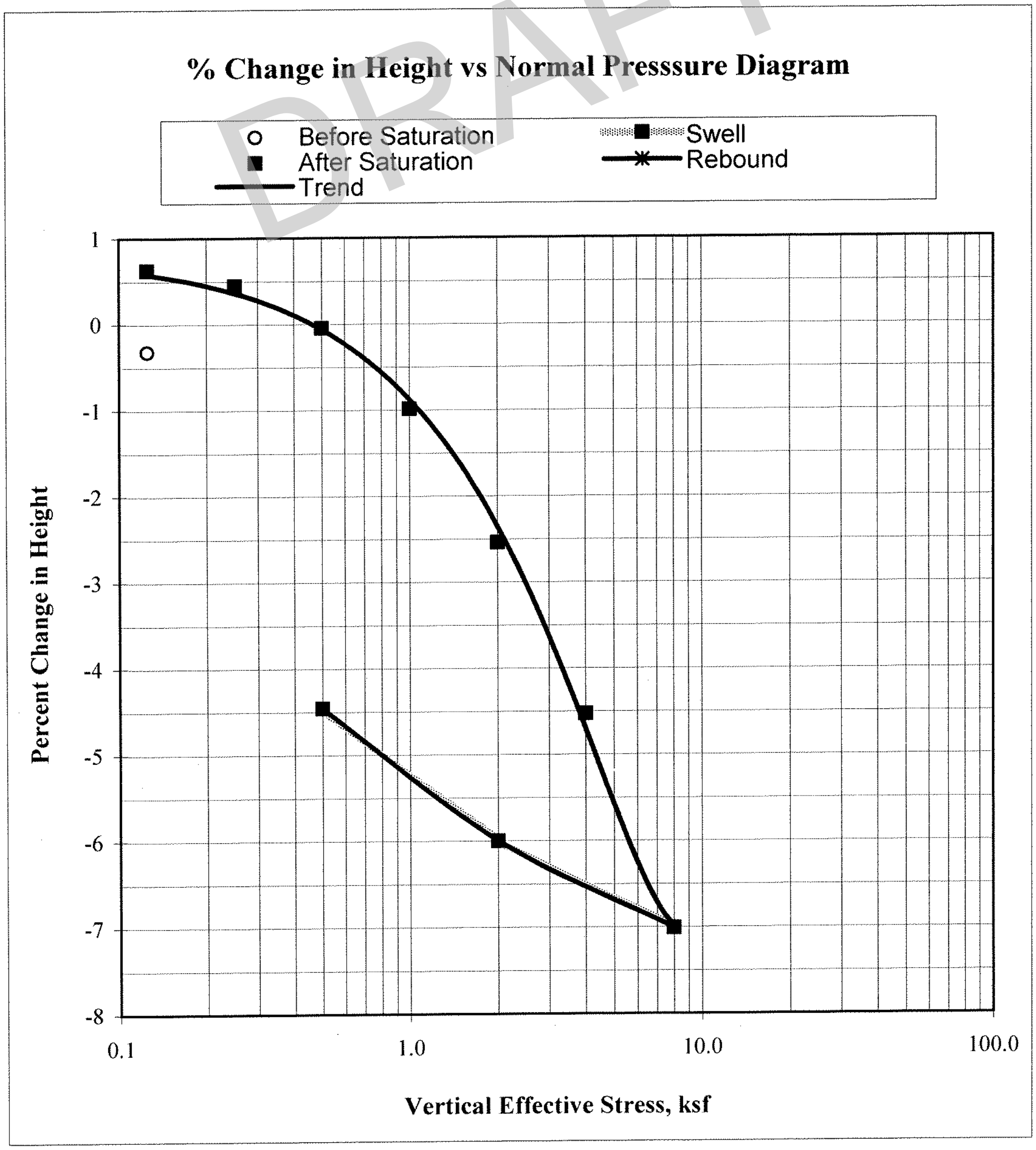
VT-23965-01

Jul 23, 2007

CONSOLIDATION TEST

ASTM D 2435-90

Oxnard College Park	Initial Dry Density: 88.3 pcf
B 1 @ 5	Initial Moisture, %: 31.1%
SC/SM	Specific Gravity: 2.67 (assumed
Ring Sample	Initial Void Ratio: 0.887

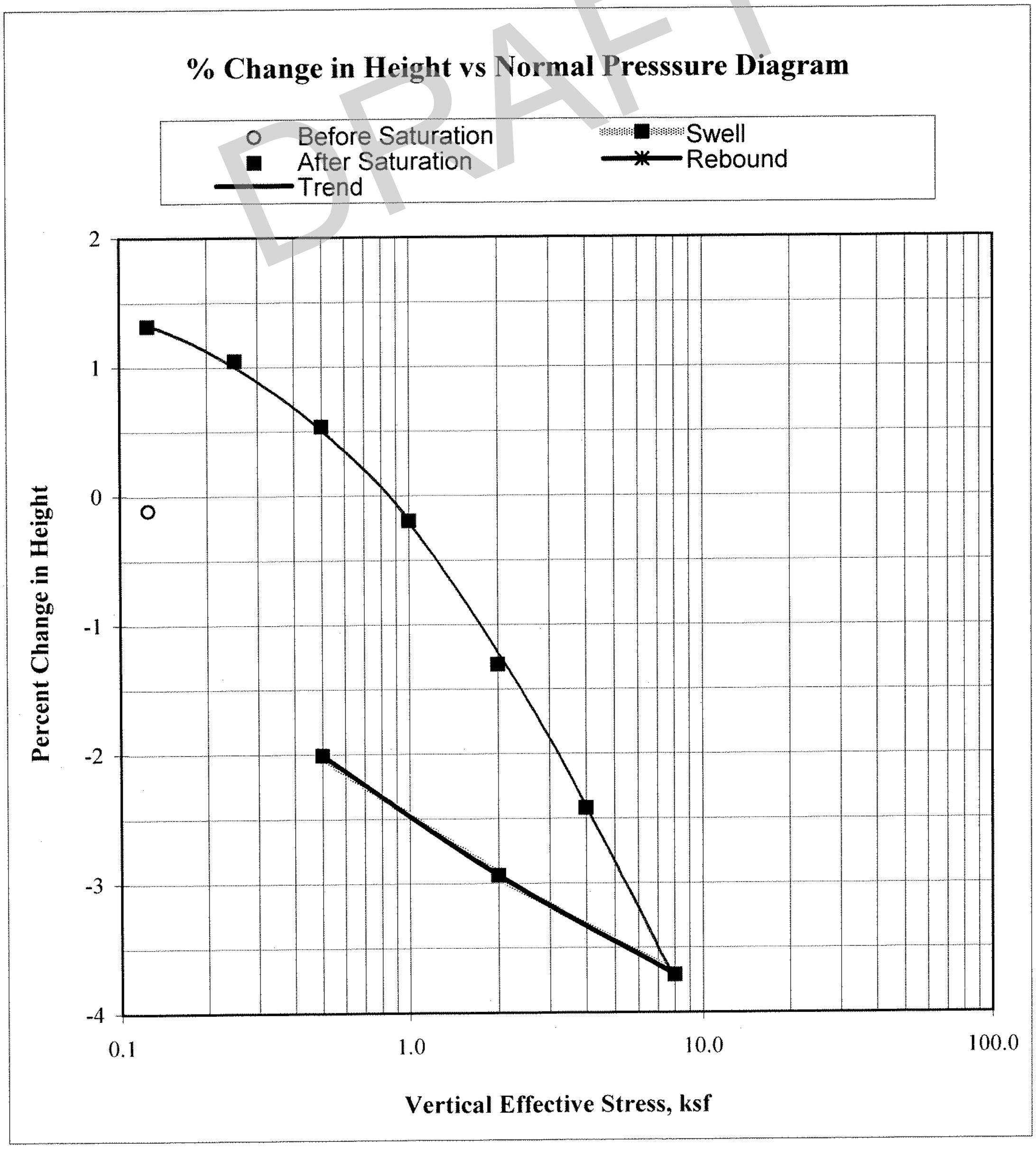


CONSOLIDATION TEST

ASTM D 2435-90

Oxnard College Park
B 2 @ 2
SM
Ring Sample

Initial Dry Density:	91.9 pcf
Initial Moisture, %:	10.4%
Specific Gravity:	2.67 (assumed
Initial Void Ratio:	0.814



VT-23965-01

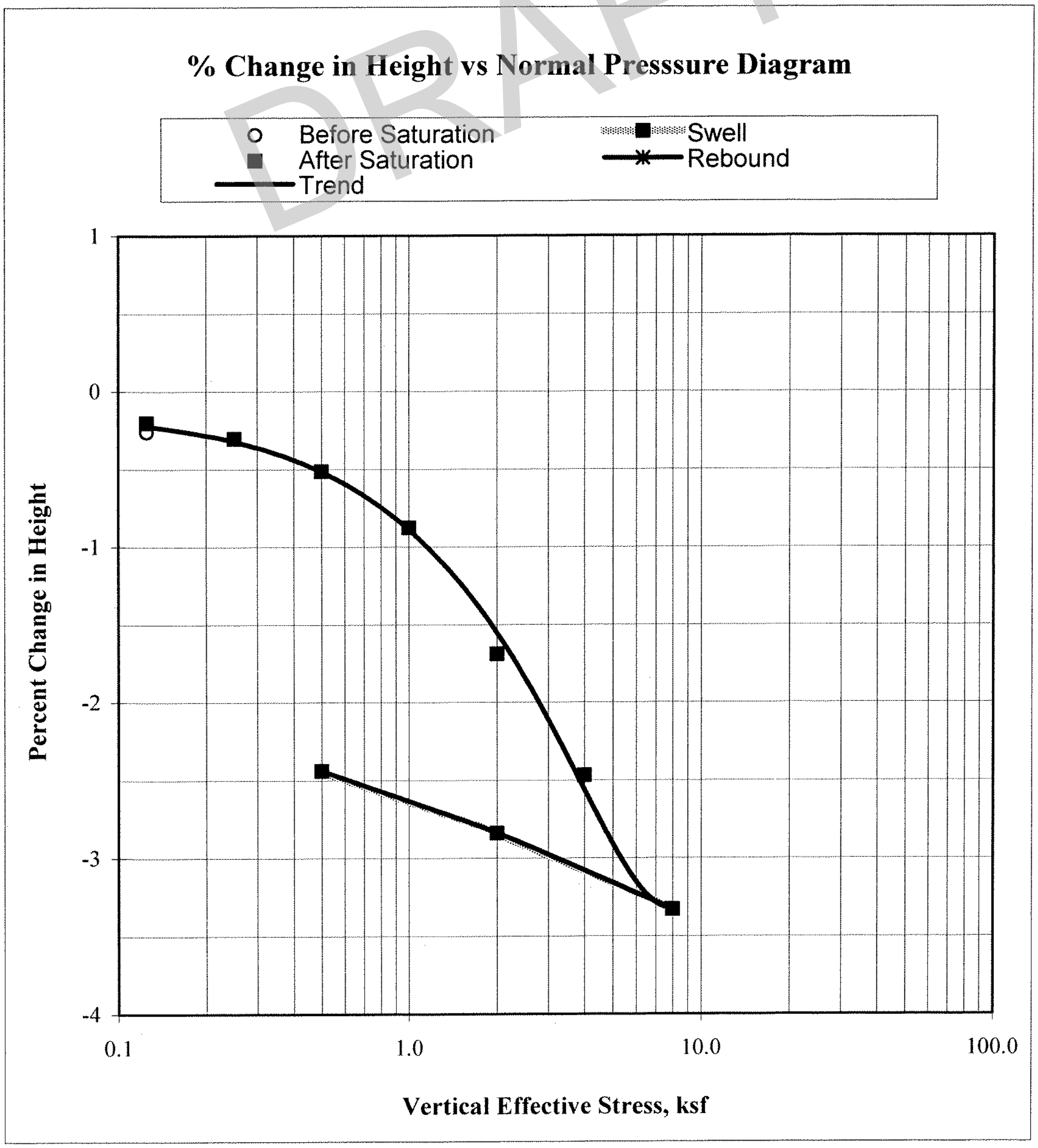
Jul 23, 2007

CONSOLIDATION TEST

ASTM D 2435-90

Oxnard College Park
B 5 @ 5
SM
Ring Sample

Initial Dry Density: 101.8 pcf
Initial Moisture, %: 25.3%
Specific Gravity: 2.67 (assumed
Initial Void Ratio: 0.638



VT-23965-01

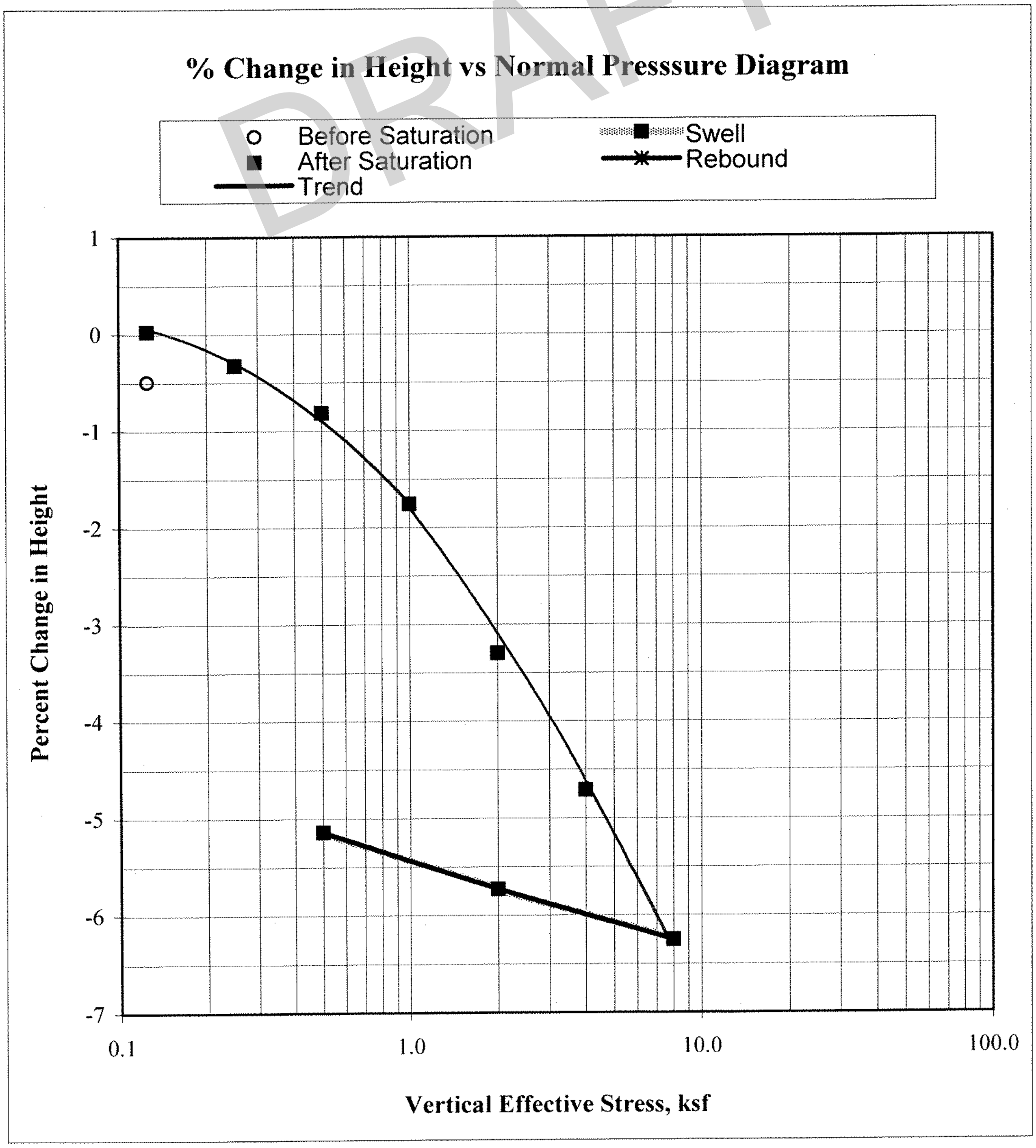
Jul 23, 2007

CONSOLIDATION TEST

ASTM D 2435-90

Oxnard College Park
B 6 @ 2
SM
Ring Sample

Initial Dry Density: 101.8 pcf
Initial Moisture, %: 8.8%
Specific Gravity: 2.67 (assumed
Initial Void Ratio: 0.638



EARTH SYSTEMS
SOUTHERN CALIFORNIA

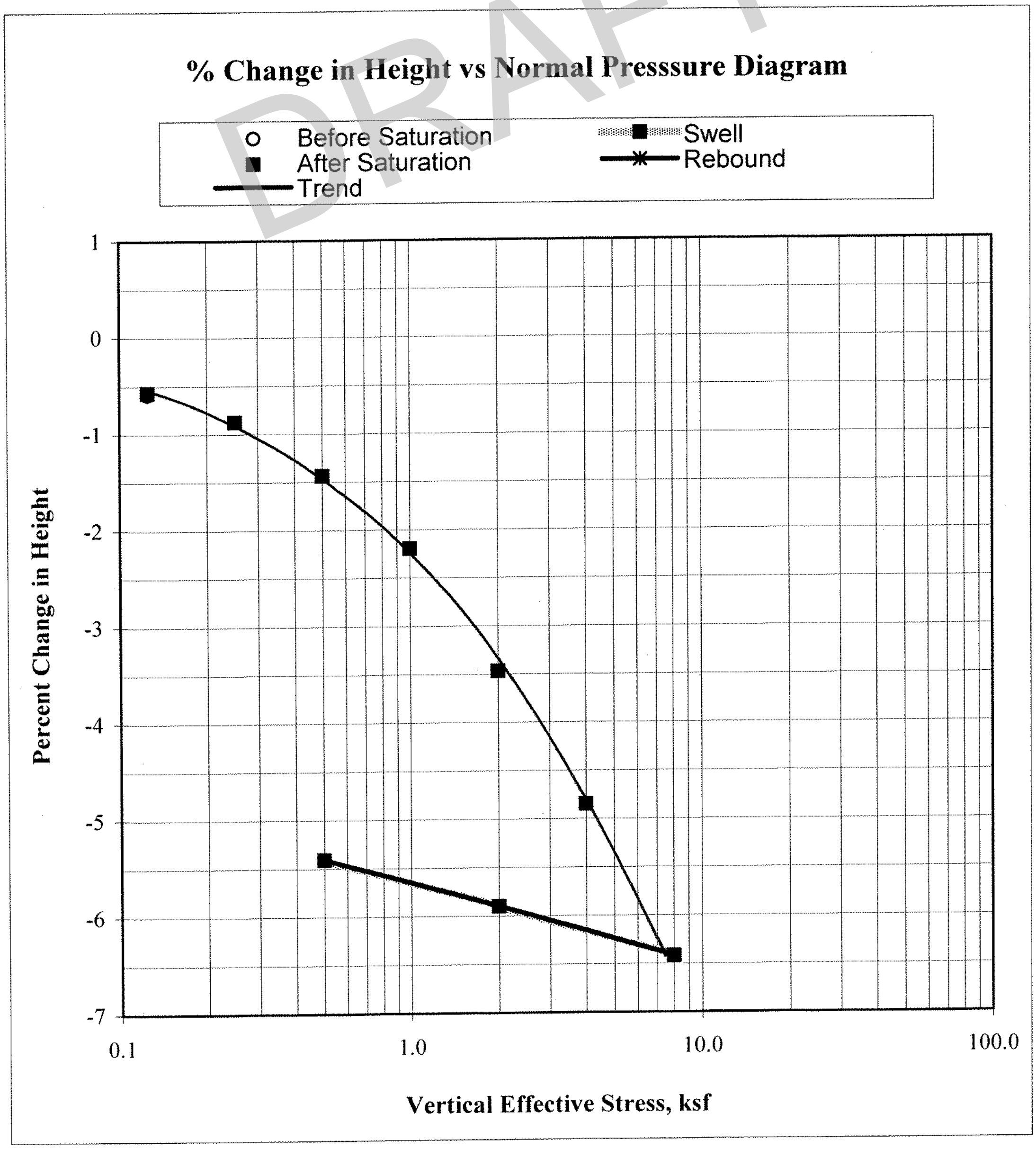
VT-23965-01 Jul 23, 2007

CONSOLIDATION TEST

ASTM D 2435-90

Oxnard College Park
B 8 @ 2
SM
Ring Sample

Initial Dry Density:	99.6 pcf
Initial Moisture, %:	8.4%
Specific Gravity:	2.67 (assumed
Initial Void Ratio:	0.673



APPENDIX E

Liquefaction Analyses

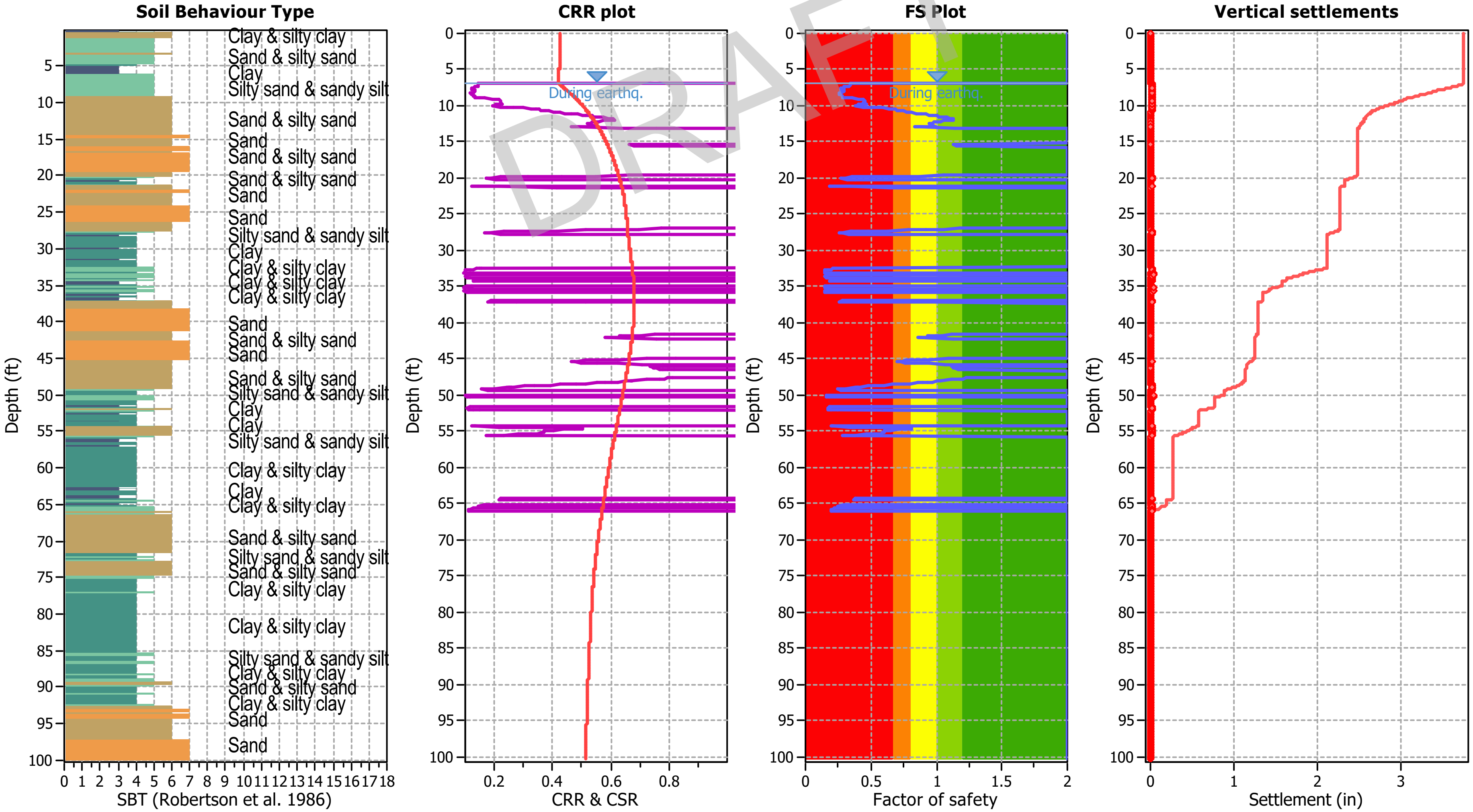
GeoLogismiki
Geotechnical Engineers
Merarhias 56
http://www.geologismiki.gr

Project:

Location:

CPT: CPT-1

Total depth: 100.27 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	13.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	7.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	1	Fill weight:	N/A	Limit depth:	66.00 ft
Earthquake magnitude M_w:	7.40	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.68	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

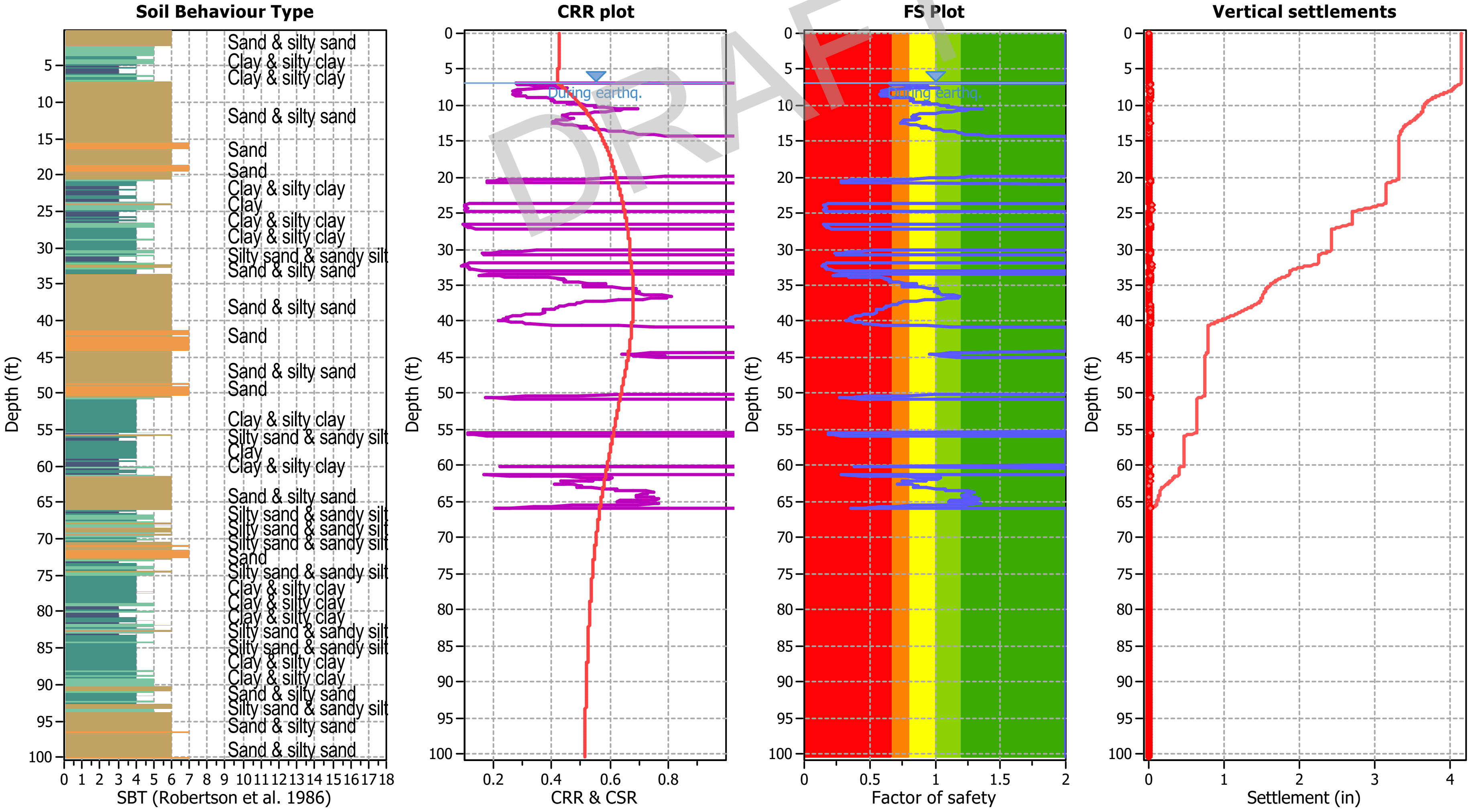
GeoLogismiki
Geotechnical Engineers
Merarhias 56
http://www.geologismiki.gr

Project:

Location:

CPT: CPT-2

Total depth: 100.40 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	13.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	7.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	1	Fill weight:	N/A	Limit depth:	66.00 ft
Earthquake magnitude M_w:	7.40	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.68	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

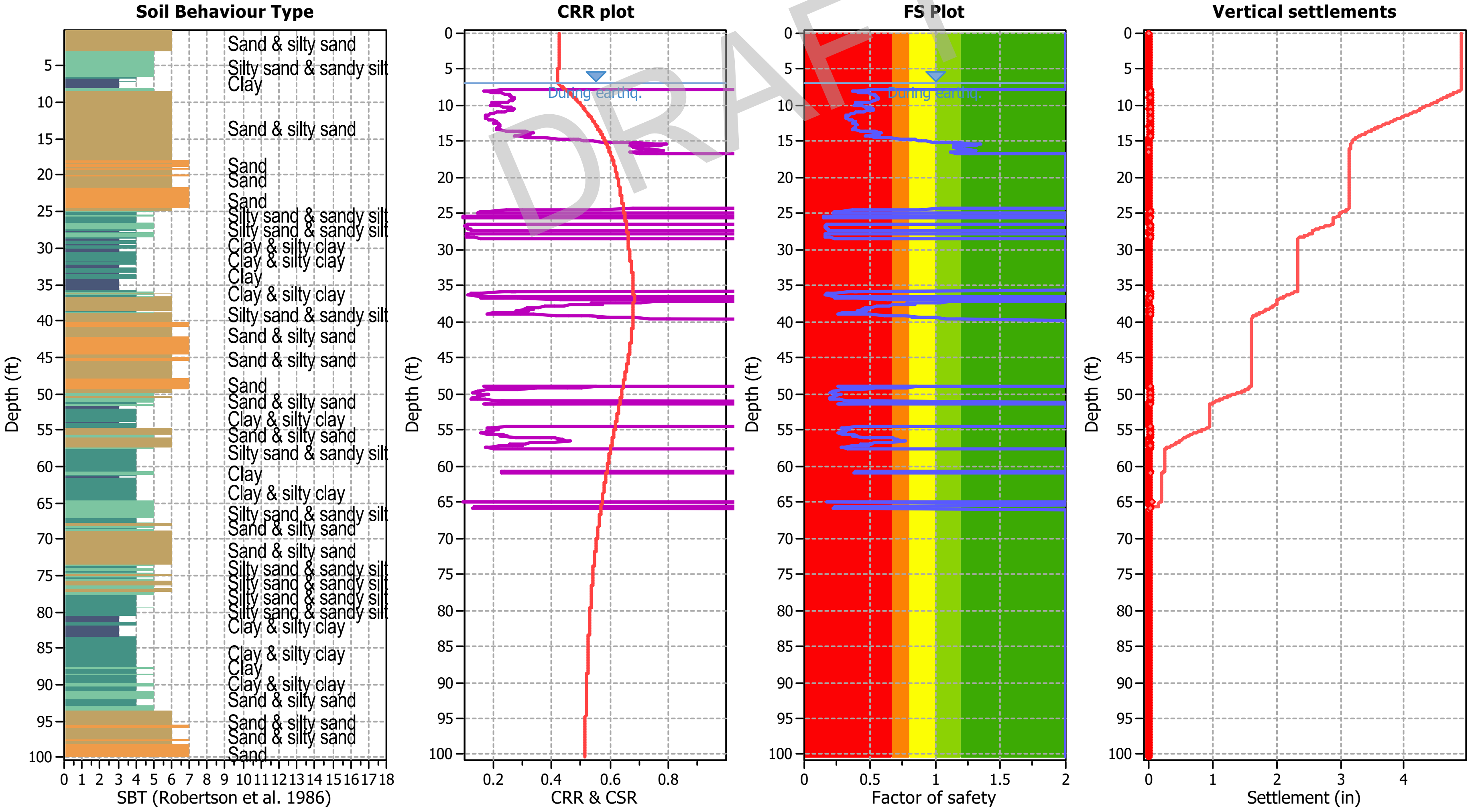
GeoLogismiki
Geotechnical Engineers
Merarhias 56
http://www.geologismiki.gr

Project:

Location:

CPT: CPT-3

Total depth: 100.33 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	13.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	7.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	1	Fill weight:	N/A	Limit depth:	66.00 ft
Earthquake magnitude M_w:	7.40	Ic cut-off value:	2.60	Trans. detect. applied:	No	MSF method:	Method based
Peak ground acceleration:	0.68	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

475 Goddard, Suite 200 | Irvine, California 92618 | p. 949.753.7070

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ninyoandmoore.com

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

Appendix D

Hazardous Materials Evaluation

Hazardous Materials Evaluation

South Oxnard Aquatics Center Project
Oxnard, California

prepared for

City of Oxnard
35 West Third Street
Oxnard, California 93030

prepared by

Rincon Consultants, Inc.
180 North Ashwood Avenue
Ventura, California 93003

December 2022

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Rincon Consultants, Inc.

180 North Ashwood Avenue
Ventura, California 93003

805 644 4455

info@rinconconsultants.com
www.rinconconsultants.com

December 23, 2022
Project No.: 22-12588

Mr. Reza Bagherzadeh, P.E.
Senior Project Manager
City of Oxnard, Public Works Department
305 West Third Street
Oxnard, California 93030
Via email: reza.bagherzadeh@oxnard.org

Subject: Hazardous Materials Evaluation
South Oxnard Aquatics Center Project, Oxnard, California

Dear Mr. Bagherzadeh:

This report presents the findings of a Hazardous Materials Evaluation completed by Rincon Consultants, Inc. (Rincon) for the South Oxnard Aquatics Center Project in Oxnard, California. The Hazardous Materials Evaluation was performed in accordance with our proposal dated February 17, 2022.

Thank you for selecting Rincon for this project. If you have any questions, or if we can be of any future assistance, please contact us.

Sincerely,
Rincon Consultants, Inc.

Julie Lynne Welch
Director of Due Diligence

Torin Snyder, PG, CHG
Principal

Savanna Vrevich

Savanna Vrevich
Environmental Scientist

Table of Contents

Figures

Appendices

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Introduction

This report presents the findings of a Hazardous Materials Evaluation for the South Oxnard Aquatics Center Project (Project) located at the southeastern corner of College Park in Oxnard, California (Project site; Figure 1). This Hazardous Materials Evaluation was performed by Rincon Consultants, Inc. (Rincon).

The purpose of this Hazardous Materials Evaluation is to provide a preliminary evaluation of the potential for environmental effects from hazardous materials and hazardous wastes for the Project as a result of past or current activities in the area. Our report documents areas of potential environmental concern within the Project site, which have or may have been impacted by hazardous materials or wastes and identifies environmental concerns that have the potential to impact the operation or construction of the Project.

Project Description

The City of Oxnard proposes to construct the South Oxnard Aquatics Center. The Project includes construction of outdoor pools with a total surface area of 23,500 square feet, including a 50-meter competition pool, 25-yard instructional pool, and fun water shallow pool, slide, and splash pad. The Project also includes construction of a 21,300-square foot, one-story “L” shaped building which will frame the western and eastern sides of the pool deck. The building will include locker rooms, administrative space, and utility rooms to support the aquatic activities. Up to 7.425 million British thermal units (BTU) of natural gas would be required to heat the pools. This would include construction of a natural gas pipeline that would connect to the southwestern corner of the proposed aquatic center, trend west along the southern portion of College Park’s one-lane ring road, and connect to an existing Southern California Gas Company (SoCalGas) line in South Rose Avenue. The Project includes construction of a dedicated parking lot with 134 parking stalls north of the aquatics center. The parking lot will be supplemented by existing parking along College Park’s ring road as well as existing adjacent parking lots within the park. The aquatic center has been designed to inspire all residents of Oxnard, many of whom do not have basic swimming skills, to gain or increase their confidence and enjoyment of aquatic environments.

Location

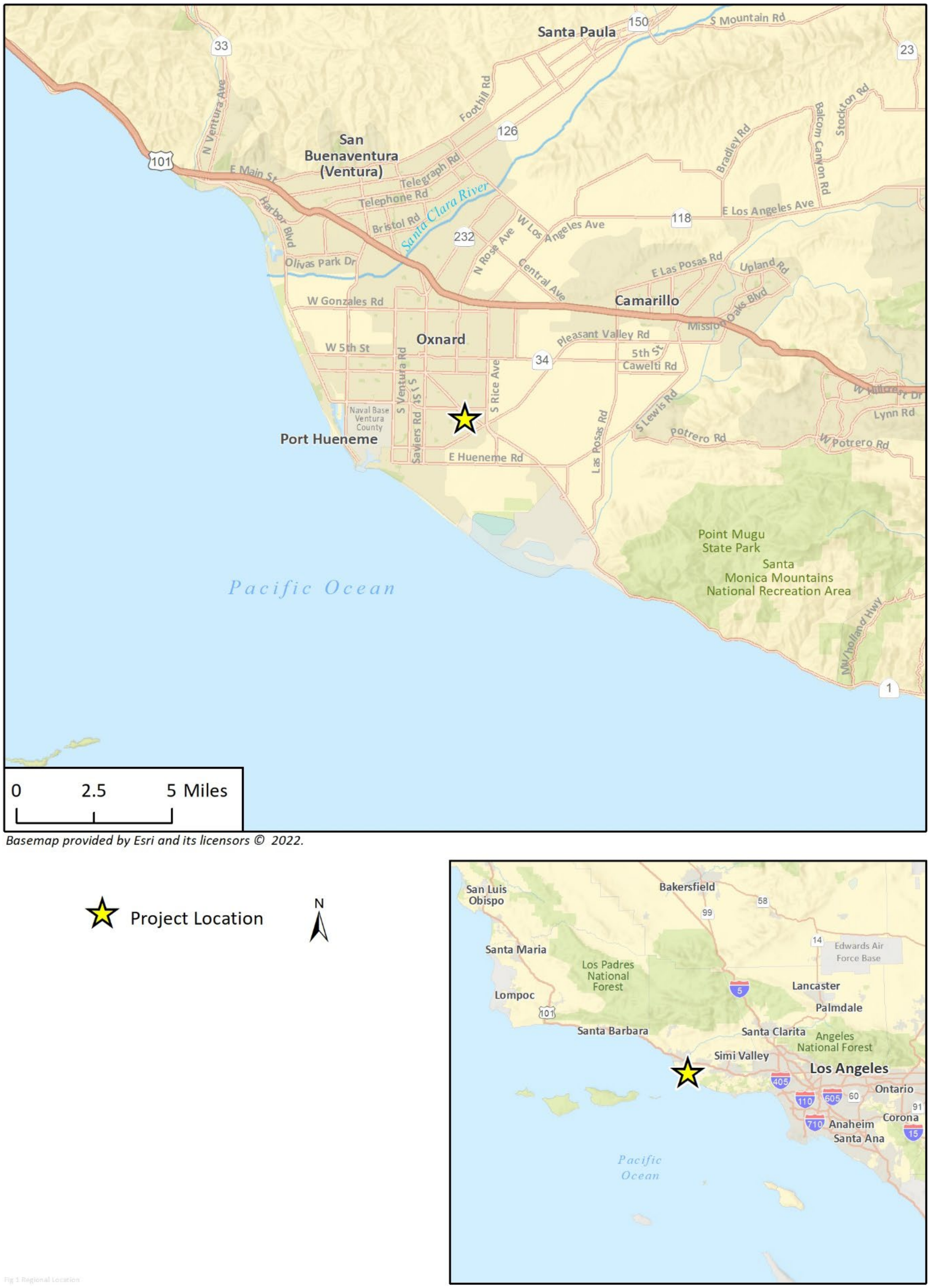
The Project site is located at the southeastern corner of College Park, which is located at 3250 South Rose Avenue in Oxnard, California. The 7.93-acre Project site is identified as a portion of Assessor’s Parcel Number 2240-012-28. Figure 1 shows the location of the Project site in the region, and Figure 2 shows the Project site in its neighborhood context.

Setting and Surrounding Land Uses

The Project site is currently vacant land with a few landscaped areas, and an unnamed College Park ring road. The Project site is bound by College Park to the west, vacant land to the north and east, and recreational sports courts/fields and vacant land to the south. As shown in Figure 1, land uses surrounding the Project site include recreational land uses and vacant land.

Access to the Project site is provided via South Rose Avenue. Regional access to the Project site is provided via State Route 1 and South Oxnard Boulevard.

Figure 1 Regional Location



Basemap provided by Esri and its licensors © 2022.

Figure 2 Project Location and Adjacent Land Use

Imagery provided by Microsoft Bing and its licensors © 2022

Haz Fig3 Adj. Land Use_Landscape

Methodology

The scope of services conducted during the Hazardous Materials Evaluation is outlined below:

- Reviewed City of Oxnard (City)-provided documents relevant to the Project site (Environmental Impact Report [EIR], Phase I Environmental Site Assessment [ESA], and Phase II ESA)
- Reviewed environmental documents available online at the State Water Resources Control Board (SWRCB) GeoTracker website, the California Department of Toxic Substances Control (DTSC) EnviroStor website, the Ventura County Environmental Health Division (VCEHD) website, and the Oxnard City Fire Department website.
- Reviewed solid waste landfills near the Project site using the California Department of Resources, Recycling, and Recovery (CalRecycle) Solid Waste Information System (SWIS) website.
- Reviewed oil and gas wells, and oil fields near the Project site using the California Geologic Energy Management Division (CalGEM) website.
- Reviewed buried hazardous material pipelines near the Project site using the Department of Transportation (USDOT), Pipeline and Hazardous Materials Safety Administration (PHMSA), National Pipeline Mapping System (NPMS) website.
- Reviewed per- and polyfluoroalkyl substances (PFAS) investigations near the Project site using the SWRCB website.
- Reviewed reasonably ascertainable historical resources (e.g., aerial photographs, topographic maps) to assess the historical land use of the Project site and adjacent properties.
- Performed a reconnaissance survey of the Project site to identify obvious indicators of the existence of hazardous materials.
- Observed adjacent or nearby properties from public thoroughfares to see if such properties are likely to use, store, generate, or dispose of hazardous materials.

The results of the records review and reconnaissance survey are discussed in the following sections.

Records Review

Listed Release Sites

A review of the Cortese List online data resources indicates that the Project site and adjacent properties are not associated with Cortese sites or sites that are included on a list of hazardous material release sites compiled pursuant to Government Code Section 65962.5 (California Environmental Protection Agency 2022).

A review of the DTSC EnviroStor database indicates that no hazardous material release cases are associated with the Project site or properties within 0.5 mile of the Project site (DTSC 2022).

A review of the SWCRB GeoTracker database indicates that no hazardous material release cases are associated with the Project site. Four hazardous material release cases are mapped on GeoTracker as located within 0.25 mile of the Project site (SWRCB 2022a). However, based on site maps available on GeoTracker and/or via VCEHD online records, it appears that these release cases have been mis-mapped on GeoTracker and are located over 0.25 mile away from the Project site.

Landfills

According to a review of the CalRecycle online SWIS database, there are no landfills within 2,000 feet of the Project site. Therefore, landfills would have no impact on the operation or construction of the Project.

CalGEM Records

According to a review of CalGEM online oil and gas well and field records, the Project site is not located within an oil/gas field; however, the Oxnard Oil/Gas Field is located north of the Project site. The closest oil well within the Oxnard Oil/Gas Field is a plugged dry hole well located approximately 1,100 feet northwest of the Project site (CalGEM 2022). Based on the distance of the Oxnard Oil/Gas Field and this oil well to the Project site, the oil and gas wells and fields would have no impact on the operation or construction of the Project.

PHMSA Records

According to a review of the PHMSA online NPMS database, there are no high-pressure natural gas transmission or hazardous liquid pipelines within or adjacent to the Project site, or within 1,000 feet of the Project site (USDOT 2022). Therefore, hazardous material pipelines would have no impact on the operation or construction of the Project.

California Statewide PFAS Investigation

Beginning in 2019, the SWRCB issued letters to property owners of sites that may be potential sources of PFAS. These sites currently include select landfills, airports, chrome plating facilities, publicly owned treatment works facilities, Department of Defense sites, and bulk fuel storage terminals and refineries. The letters included a SWRCB Water Code Section 13267 Order

(Investigative Order); an Investigative Order is a directive from the SWRCB to conduct on-site testing of groundwater and/or leachate. This does not mean that PFAS has been produced, used, or discharged at these sites. According to the SWRCB, "PFAS are a large group of human-made substances that do not occur naturally in the environment and are resistant to heat, water, and oil" (SWRCB 2022b).

According to a review of the California Statewide PFAS Investigation online Public Map Viewer, there are no current airport, chrome plating, Department of Defense, landfill, or publicly owned treatment works with PFAS orders at any facilities listed as located within one mile of the Project site (SWRCB 2022b). According to a review of the SWRCB's March 12, 2021, Bulk Fuel Terminal/Refinery Investigative Order, the Project site is not listed on the Bulk Fuel Storage Terminals and Refineries List (Attachment 1 of the Order). Furthermore, none of the Bulk Fuel Storage Terminals or Refineries on the list are located within one mile of the Project site (SWRCB 2021).

According to a review of the California Statewide Drinking Water System Quarterly Testing Results online Public Map Viewer, perfluorooctanoic acid and perfluorooctanesulfonic acid (PFOA and PFOS) were analyzed in three public drinking water wells located approximately two miles east and southeast of the Project site and tested quarterly as part of a PFAS investigative order (SWRCB 2022c). PFOA and PFOS were not detected in these wells. Therefore, PFAS would have no impact on the operation or construction of the Project.

Historical Records

According to our review of online aerial photographs and topographic maps (Nationwide Environmental Title Research [NETR] 2022), it appears the Project site was an orchard from at least 1947 to 1974, dry farming in 1980, and vacant land from at least 1984 to present day. Additionally, soil piles appear to be present in the northern portion of the Project site in 2013 and 2014, and the central/western portion of the Project site in 2021.

Additionally, it appears the alignment of the proposed natural gas pipeline was an orchard from at least 1947 to 1974, dry farming in 1980, vacant land, landscaped areas, and a paved road from 1984 to 2010, and landscaped areas and a paved road from 2012 to present day.

Shallow soils located in agricultural areas are commonly impacted with hazardous materials such as petroleum hydrocarbons, organochlorine pesticides (OCPs), and metals. Therefore, construction of the Project in areas of former agricultural use could create a public health and environmental hazard at the Project site.

City-Provided Documents

2005 Phase I ESA

A 2005 Phase I ESA report prepared by Rincon for the 75-acre College Park project, which includes the Project site and the alignment of the proposed natural gas pipeline, indicates that the College Park site was developed with a ranch and used for dry farming and row crop agriculture from the 1940s to the 1980s. The ranch residence, storage sheds, and three former fuel underground storage tanks (USTs) were formerly located in the northwestern corner of the College Park site, approximately 1,300 feet northwest of the Project site. A former oil well was also identified on the College Park site, approximately 1,100 feet northwest of the Project site. The report identified six recognized environmental conditions (RECs) in connection with the College Park site: presence of three former fuel USTs, former agricultural use, pesticide storage and staining at the time of the report, improper storage of 55-gallon drums, historical adjacent presence of State Route 1, and a former oil well. Based on distance to the Project site, all but one of these RECs would have no impact on construction or operation of the Project (including the alignment of the proposed natural gas pipeline). The report also identified former agricultural use of the College Park site (including the Project site). The report recommended collecting soil samples from the College Park site and analyzing the soil samples for pesticides, due to the potential for the College Park site to be affected by pesticides or other chemicals routinely used in agricultural production.

2005 EIR

A 2005 EIR prepared by the City of Oxnard with the assistance of Rincon for the 75-acre College Park project, which includes the Project site and the alignment of the proposed natural gas pipeline, indicates that the six RECs identified in Rincon's 2005 Phase I ESA were a "significant but mitigable" impact to the proposed College Park project. The EIR included two mitigation measures related to hazardous materials: completion of a Phase II ESA and additional assessment and/or remediation that "may be required to reduce the soil/groundwater contamination levels to within acceptable ranges considered acceptable for park use." Documentation associated with these mitigation measures were directed to be submitted to the City of Oxnard for review prior to issuance of a grading permit, and the mitigation measures were determined to "mitigate the potential hazard associated with contamination to a level of insignificance" (City of Oxnard 2005).

2007 Phase II ESA

A 2007 Phase II ESA report prepared by Rincon for the 75-acre College Park project, which includes the Project site and the alignment of the proposed natural gas pipeline, was prepared based on the findings of Rincon's 2005 Phase I ESA. As part of the Phase II ESA, a soil and groundwater assessment was conducted at the College Park site to evaluate hazards associated with USTs, former agricultural use, pesticide storage, drums, State Route 1, and a former oil well. During borings conducted as part of the Phase II ESA, groundwater was encountered between 9 and 10 feet below grade in the northwestern corner of the College Park site.

Because the RECs previously identified in connection with the College Park site (except the former agricultural use of the College Park site) would have no impact on construction or operation of the Project, the results of soil and groundwater sampling in those areas are not discussed here.

Of the 57 soil borings advanced in areas historically developed with agriculture at the College Park site, 11 soil borings were advanced within the Project site and two soil borings were advanced in the vicinity of the proposed natural gas pipeline. Soil samples were collected at 0.5 feet below grade, composited on a 4 to 1 basis resulting in three composite soil samples collected at the Project site (with one composite sample including a soil sample collected approximately 30 feet north of the Project site), and analyzed for OCPs. The OCPs 4,4'-dichlorodiphenyldichloroethane (DDD), 4,4'-dichlorodiphenyldichloroethylene (DDE), 4,4'-dichlorodiphenyldichloroethylene (DDT), dieldrin, gamma-chlordane, and alpha-chlordane were detected in the composite soil samples collected at the Project site and in the vicinity of the proposed natural gas pipeline. When compared to the 2019 Residential San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels (ESLs), the detected concentrations of OCPs in these composite soil samples were below the Residential ESLs for shallow soil exposure at residential properties.

Site Reconnaissance

Rincon staff performed a reconnaissance survey of the Project site (as shown on Figure 2) on September 9, 2022, accompanied by Reza Bagherzadeh, P.E., Senior Project Manager for the City of Oxnard. The purpose of the reconnaissance survey was to observe existing Project site conditions that may indicate the presence of hazardous material releases on the Project site. As discussed below, piles of concrete debris, wood debris, and soil were observed on the Project site during the reconnaissance survey. Figure 3 depicts our observations from the reconnaissance survey.

Current Use of the Project Site

During the reconnaissance survey, Rincon staff confirmed the Project site is currently vacant land.

Piles of Material

Several soil piles of varying sizes were observed on the Project site as follows:

- Five piles of concrete debris in the southeastern corner of the Project site (Appendix A, Photograph 2)
- One pile of wood debris and at least one soil pile in the southeastern portion of the Project site (Appendix A, Photograph 3)
- One approximately 200-foot-long soil pile along the southern boundary of the Project site (Appendix A, Photograph 4)

According to Mr. Bagherzadeh, piles of woodchips/mulch were previously located on the Project site, generated from clearing trees during development of the western adjacent park, and were later moved to the northern adjacent property. Piles of woodchips were observed on the northern adjacent property (Appendix A, Photograph 5).

Figure 3 Project Site

Imagery provided by Microsoft Bing and its licensors © 2022

Haz Fig2 Project Location_Landscape

Impact Summary

Based on the research conducted as part of this Hazardous Materials Evaluation, environmental conditions with the potential to impact construction and/or operation of the Project were identified, as described below.

Construction Impacts

Based on the past agricultural use of the Project site and results of soil samples previously collected at the Project site in 2007, the OCPs DDD, DDE, DDT, dieldrin, gamma-chlordane, and alpha-chlordane are present in soil at the Project site at concentrations below the 2019 Residential ESLs.

Since completion of the Phase II ESA in 2007, soil piles of unknown origin were present on the Project site in at least 2013, 2014, 2021, and 2022 (September 9, 2022); therefore, residual fill soils may remain on the Project site. If residual fill soil is present, petroleum hydrocarbons, OCPs, metals and/or other contaminants may be present in the residual fill soil on the Project site and could be disturbed during grading and construction-related work.

Potential environmental conditions identified at the Project site during Rincon's September 2022 reconnaissance survey include soil piles of unknown origin. Soils impacted with petroleum hydrocarbons, OCPs, metals, and/or other contaminants may be present in the on-site soil piles and could be disturbed during grading and construction-related work. Offsite disposal of these materials during Project construction may also require special handling or disposal as a waste.

Consequently, potentially significant impacts may exist at the Project site and, as a result, would potentially create a significant hazard to the public or the environment during grading/construction. Implementation of Mitigation Measures HAZ-1 through HAZ-3 will reduce construction hazardous material impacts to a less-than-significant level.

Operation Impacts

Potential hazardous materials, such as fuels/oils, paint products, lubricants, solvents, cleaning products, and pesticides/herbicides may be used and/or stored on-site during operation of the Project. Operation of the Project would likely involve an incremental increase in the use of commercial hazardous materials, such as pool maintenance chemicals, cleaning products, fertilizers, pesticides, and other materials used in regular property, pool, and landscaping maintenance. It is anticipated that tanks of sodium hypochlorite, muriatic acid, and carbon dioxide (CO_2) would be stored in four storage rooms within the proposed aquatic center building. Specifically, three 1,000-gallon tanks of sodium hypochlorite would be stored in three storage rooms (one in each storage room). One 500-gallon tank of muriatic acid and one canister with 600 pounds of CO_2 would be stored in the fourth room. Transport, use, and storage of hazardous materials during operation of the Project would be conducted pursuant to all applicable local, state, and federal laws, including Title 49 of the Code of Federal Regulations implemented by California Code of Regulations (CCR) Title 13. As required by California Health and Safety Code Section 25507, a business shall establish and implement a Hazardous Materials Business Emergency Plan for emergency response to a release or threatened release of a hazardous material. As required, the hazardous materials would be stored in locations according to compatibility and in storage enclosures (i.e., flammable material storage cabinets and biological safety cabinets) or in areas or rooms specially designed, protected, and contained for such storage, in accordance with applicable regulations. With proper transport, handling, and storage of hazardous materials at the Project site, operational hazardous material impacts would be less than significant.

Recommendations

Based on the former/current presence of soil piles on the Project site, there may be contaminants present. Soil piles present on the southeastern portion of the Project site may also be impacted by contaminants. Therefore, soils impacted with contaminants may be disturbed during grading and construction-related work on the Project site.

Implementation of Mitigation Measures HAZ-1 through HAZ-3 would identify if impacted soils are present on the Project site and reduce potential hazardous material construction impacts at the Project site to less than significant, as discussed below.

Mitigation Measures

HAZ-1 Subsurface Investigation

Prior to construction, the City shall retain a qualified environmental consultant (Professional Geologist [PG] or Professional Engineer [PE]) to conduct a subsurface investigation in areas of proposed development at the Project site where soil piles were formerly or are currently present. The subsurface investigation may include, but is not limited to, completion of soil sampling and analysis for total petroleum hydrocarbons in the gas, diesel, and oil range, volatile organic compounds, semi-volatile organic compounds, OCPs, and metals.

The PG or PE shall prepare a subsurface investigation report, which will be submitted to the City for review and approval. As part of the subsurface investigation, analytical results shall be screened against the San Francisco Bay RWQCB ESLs. These ESLs are risk-based screening levels for direct exposure of a construction worker and commercial/industrial land use. The subsurface investigation report shall include recommendations to address identified hazards and indicate when to apply those recommended actions in relation to Project activities.

If contaminants are detected at the Project site, the City shall implement the recommendations specified in the subsurface investigation report, and appropriate steps shall be undertaken by the City to protect site workers during Project construction. This would include the preparation of a Soil Management Plan and remediation, if required (see Mitigation Measures HAZ-2 and HAZ-3).

HAZ-2 Soil Management Plan

The City shall retain a qualified environmental consultant (PG or PE) to prepare a Soil Management Plan (SMP) prior to construction. The SMP, or equivalent document, shall be prepared to address handling and management of contaminated soils or other contaminated wastes on the Project site, if any is encountered during the subsurface investigation, and reduce hazards to construction workers and offsite receptors during construction. The City shall review, approve, and implement the SMP prior to grading (construction).

The SMP must establish remedial measures and/or soil management practices to ensure construction worker safety, the health of future workers and visitors, and the offsite migration of impacts from the Project site. These measures and practices may include, but are not limited to:

- Stockpile management including stormwater pollution prevention and the installation of Best Management Practices (BMPs)

- Proper disposal procedures of impacted materials
- Monitoring and reporting
- A health and safety plan for contractors working at the site that addresses the safety and health hazards of each phase of site construction activities with the requirements and procedures for employee protection
- The health and safety plan will also outline proper soil handling procedures and health and safety requirements to minimize worker and public exposure to hazardous materials during construction
- Proper handling procedures for unexpected contamination, such as halt-work and avoidance protocols, and City and contractor notifications

The SMP shall also specify the procedures to be implemented in the event unexpected hazardous materials are encountered during construction. If unexpected odorous or visually stained soils, other indications of hydrocarbon piping or equipment, or debris are encountered during ground-disturbing activities, the construction contractor shall halt work in the immediate area and a qualified environmental consultant (PG or PE) shall be contacted immediately to evaluate the situation. The qualified environmental consultant shall evaluate the material and recommend the appropriate testing, removal, and disposal methods. The construction contractor shall ensure hazardous materials are removed or remediated in accordance with the requirements of the qualified environmental consultant and the SMP. Construction work may continue on other parts of the Project while soil investigation and/or remediation (Mitigation Measure HAZ-3) takes place. The construction contractor shall not resume work until approved by the qualified environmental consultant and the City.

HAZ-3 Remediation

If the subsurface investigation identifies that contaminants are present within the soil piles or construction limits at chemical concentrations exceeding ESLs and/or hazardous waste screening thresholds for contaminants in soil (CCR Title 22, Section 66261.24), the City shall retain a qualified consultant (PG or PE) to properly dispose of the contaminated soil. The qualified consultant shall utilize the Project site analytical results from the subsurface investigation report for waste characterization purposes prior to offsite transportation or disposal of potentially impacted soils or other impacted wastes. The qualified consultant shall provide disposal recommendations and arrange for proper disposal of the waste soils or other impacted wastes (as necessary), and/or provide recommendations for remedial engineering controls, if appropriate.

Remediation of impacted soils and/or implementation of remedial engineering controls may require additional delineation of subsurface impacts; additional analytical testing per landfill or recycling facility requirements; soil excavation; and offsite disposal or recycling.

The City shall review, approve, and implement the Project site disposal recommendations prior to transport of waste soils offsite and remedial engineering controls, prior to construction.

Significance After Mitigation

Implementation of Mitigation Measures HAZ-1 through HAZ-3 during construction would reduce potential hazardous material impacts to a less-than-significant level.

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Appendix A

Site Photographs

Photograph 1. View of the subject property from the southern boundary, facing north.

Photograph 2. View of five piles of concrete debris in the southeastern corner of the subject property, facing west.

Photograph 3. View of piles of wood debris and soil in the southeastern portion of the subject property, facing south.

Photograph 4. View of one approximately 200-foot-long soil pile located along the southern boundary of the subject property, facing east.

Photograph 5. View of piles of woodchips on the northern adjacent property, facing north.

Photograph 6. View of the subject property from the northwestern corner, facing southeast.

Appendix E

Phase II Environmental Site Assessment

Phase II Environmental Site Assessment

Proposed South Oxnard Aquatics Center Improvement Project
Oxnard, California

prepared for
City of Oxnard

prepared by
Rincon Consultants, Inc.

March 23, 2023

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March 23, 2023
Project No.: 22-13765

Mr. Reza Bagherzadeh, P.E.
Senior Project Manager
City of Oxnard, Public Works Department
305 West Third Street
Oxnard, California 93030
Via email: reza.bagherzadeh@oxnard.org

Subject: Phase II Environmental Site Assessment
Proposed South Oxnard Aquatics Center Improvement Project, Oxnard, California

Dear Mr. Bagherzadeh:

We are pleased to submit this Phase II Environmental Site Assessment (ESA) report for the proposed South Oxnard Aquatics Center Improvement Project located in Oxnard, California (site). The Phase II ESA was performed in accordance with our proposal dated November 16, 2022. The objective of the assessment was to evaluate chemical constituents of concern in soil at the site and to determine if remediation or mitigation measures may be required to reduce potential health impacts during construction and to future users of the proposed aquatics center.

If you have any questions, or if we can be of any future assistance, please contact us.

Sincerely,
Rincon Consultants, Inc.

REGISTERED PROFESSIONAL ENGINEER
RYAN THACHER
C 87757
CIVIL
STATE OF CALIFORNIA

R.

R. Scott English, RME
Senior Program Manager

Ryan Thacher

This document has been digitally signed and sealed by Ryan Thacher, PhD, PE on 1/12/2023.

Ryan Thacher, PhD, PE
Director of Site Assessment and Remediation

Savanna Vrevich

Savanna Vrevich
Environmental Scientist

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Introduction

This report presents the findings of a Phase II Environmental Site Assessment (ESA) consisting of a soil matrix assessment conducted by Rincon Consultants, Inc. (Rincon) for the proposed South Oxnard Aquatic Center Improvement Project located immediately east of Oxnard College (4000 South Rose Avenue) in the City of Oxnard, California (site, Figure 1). The site is currently an approximately 7-acre vacant, graded property. We understand the site is planned for construction of the South Oxnard Aquatics Center to serve the City of Oxnard's (City) youth, adults, and seniors, and provide for expansion of recreation, water fitness, and competitive aquatics opportunities.

Background

The scope of work presented herein is based on the recommendations identified in the Hazardous Materials Evaluation prepared by Rincon and dated October 10, 2022. The mitigation measure identified in the Hazardous Materials Evaluation as HAZ-1 indicates the City shall retain a qualified environmental consultant (Professional Geologist [PG] or Professional Engineer [PE]) to conduct a subsurface investigation in areas of proposed development at the project site where soil piles were formerly or are currently present.

Regulatory Setting and Screening Levels

Environmental Screening Levels (ESLs) have been established by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) for chemicals commonly found in soil, groundwater, soil vapor, and air at sites where releases of hazardous chemicals may have occurred (SFBRWQCB 2019). ESLs are considered to be health-conservative concentration thresholds designed to be protective of the environment and human health and are applied at sites throughout California. Under most circumstances, the presence of a chemical in soil, soil vapor, groundwater, or ambient air at concentrations below the ESL corresponding to the site's exposure scenario (commercial/industrial, residential, etc.) can be assumed to not pose a significant, long term (chronic) threat to human health or the environment. Additional evaluation will generally be necessary at sites where a chemical is present at concentrations above the corresponding ESL. Active remediation may or may not be required depending on site specific conditions and considerations.

Per the Department of Toxic Substances Control's (DTSC) Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note 3 (DTSC 2020), DTSC Screening Levels (DTSC SLs) are risk-based screening levels intended to be protective of future receptors at a site (residential, commercial/industrial, etc.), and are also suitable for comparison to environmental data.

Rincon understands that redevelopment plans include construction of a recreational (aquatics) facility. Therefore, contaminant levels will be compared to the following:

- **Soil Matrix:** Construction worker and commercial/industrial ESLs and commercial/industrial DTSC SLs, except for total chromium for which residential, commercial/industrial, and construction worker ESLs and DTSC SLs have not been established. Therefore, total chromium will be compared to the Tier 1 ESL for total chromium, which was established for terrestrial receptors/habitats.

Because metals can be naturally occurring at elevated concentrations in the environment, metals are compared to regional background levels when background levels exceed risk-based screening levels. A commonly used reference that lists estimates of naturally occurring concentrations of metals in California soil is a Kearney Foundation of Soil Science special report (Kearney 1996). Arsenic concentrations in soil matrix samples collected at the site, which are typically naturally elevated throughout California relative to ESLs, were compared to background concentrations described in the Kearney Foundation special report.

Purpose and Scope

Purpose

Rincon performed a Phase II ESA consisting of soil matrix sampling at the site. The Phase II ESA was based on the recommendations identified in the Hazardous Materials Evaluation prepared by Rincon for the site and dated October 10, 2022. As described in this report, we developed the Phase II ESA scope to incorporate the findings and recommendations of the Hazardous Materials Evaluation report.

The objective of the assessment was to identify potentially impacted soil at the site and to determine if remediation or mitigation measures may be required to reduce potential health impacts during construction and to future occupants of the proposed aquatics center.

Completed Scope

The Phase II ESA scope of work included the following:

- Performed soil boring mark-outs and notified Underground Service Alert (USA)
- Prepared a site-specific Health and Safety Plan
- Advanced a total of eight soil borings at the site, including the areas of former and current soil and debris piles to identify potentially impacted soil
- Analyzed soil samples for the following:
  - TPH in the gasoline range (TPH-g), diesel range (TPH-d), and motor oil range (TPH-o)
  - Volatile organic compounds (VOCs)
  - Semi-volatile organic compounds (SVOCs)
  - Organochlorine pesticides (OCPs)
  - Title 22 Metals
- Evaluated laboratory analytical results and compared analyte concentrations to applicable SFBRWQCB and DTSC commercial/industrial exposure and construction worker exposure screening levels
- Prepared this report documenting the findings of the Phase II ESA

Site Assessment

Sampling Methodology and Analytical Program

On February 7, 2023, Rincon mobilized to the site to complete the soil matrix sampling program described below.

Soil Matrix Sampling

Eight soil borings were advanced using a hand auger in accordance with the field procedures detailed in Appendix A. Soil boring locations are shown on Figure 2. Soil boring logs are in Appendix B. The total number of soil samples and sampling depths are described in Table 1.

Table 1 Soil Sampling Depths and Analytes

Location	Boring ID	Number of Borings	Target Depth (ft bgs)	Soil Sample Intervals (ft bgs)	Analytes
Site, including former and current soil and debris piles	HA1-HA8	8	3.0	0.5 – 1 2.5 – 3	TPH-g, TPH-d, TPH-o, VOCs, SVOCs, OCPs, Title 22 Metals

ft bgs – feet below ground surface

Soil Matrix Analytical Program

Soil samples were transported for analysis via courier under chain-of-custody protocol to Pace Analytical, a state-certified analytical laboratory in Bakersfield, California. The analytical program for the soil matrix samples is summarized below in Table 2.

Table 2 Analytical Methods

Sampled Media	Number of Samples Analyzed	Analytes	Analytical Methods
Soil Matrix	8	TPH-g, TPH-d, and TPH-o	United States Environmental Protection Agency (EPA) Method 8015B(M)/FFP with silica gel treatment
	8	VOCs	EPA Method 8260B with EPA Method 5035 field preservation
	8	SVOCs	EPA Method 8270 SIM
	8	OCPs	EPA Method 8081A
	8	Title 22 Metals	EPA Method 6010B/7471A

Initially, only the samples collected from 0.5 feet below ground surface (bgs) were selected for analysis. The additional soil samples were held at the laboratory pending the results of the initial sample analysis.

Based on the results of the initial sample analysis, the samples collected from 3.0 feet bgs at boring locations HA2 through HA7 were analyzed for TPH and the sample collected from 3.0 feet bgs at boring location HA8 was analyzed for mercury. In addition, in order to verify the TPH detected was not derived from naturally occurring organic sources, a silica gel cleanup procedure was added to the TPH analysis to confirm that the TPH identified originated from an anthropogenic source.

Decontamination Processes

All reusable (non-disposable) drilling and sampling equipment underwent a three-stage decontamination procedure between samples. Equipment was washed using a phosphate-free detergent solution rinsed with potable water and rinsed again with deionized water.

Upon completion of soil matrix sampling, the soil borings were backfilled with soil cuttings and finished to match existing ground conditions.

Analytical Results

Soil Matrix Sample Analytical Results

A copy of the soil matrix laboratory analytical report is included in Appendix C. Summaries of the soil matrix sample analytical data are included in Tables 9 through 11.

TPH in Soil

Petroleum hydrocarbons were detected in 13 of the 14 soil samples analyzed for TPH. Table 3 below summarizes TPH detections in the soil borings. A detailed table of TPH analytical results is presented in Table 9.

Table 3 Summary of Detected Concentrations of TPH in Soil

Constituent	Number of Detections	Samples Exceeding ESL	Maximum Detected Concentration (mg/kg)/ Boring ID-Depth (ft bgs)	ESL Exceeded (mg/kg)
TPH-g	0	N/A	Not detected	Not detected
TPH-d	8	1	780 (HA3-0.5)	500 (Commercial/ Industrial DTSC SL)
TPH-o	13	0	5,200 (HA3-0.5)	No

mg/kg – milligrams per kilogram

TPH-g was not detected in any of the 14 soil samples analyzed for TPH.

TPH-d was detected in exceedance of its commercial/industrial DTSC SL at boring location HA3 at a depth of 0.5 foot bgs. TPH-d was not detected above the laboratory reporting limit in the 3.0-foot sample from this boring location (HA3).

TPH-o was not detected at or in exceedance of its construction worker ESL, commercial/industrial ESL, or commercial/industrial DTSC SL in any of the 14 soil samples analyzed for TPH.

VOCs in Soil

VOCs were detected in all of the eight soil samples analyzed for VOCs. Table 4 below summarizes VOC detections in the soil borings. A detailed table of VOC analytical results is presented in Table 9.

Table 4 Summary of Detected Concentrations of VOCs in Soil

Constituent	Number of Detections	Samples Exceeding ESL	Maximum Detected Concentration (mg/kg)/Boring ID-Depth (ft bgs)	ESL Exceeded (mg/kg)
Benzene	7	None	0.007 (HA5-0.5)	No
Ethylbenzene	3	None	0.0032 (HA8-0.5)	No
Toluene	8	None	0.0099 (HA5-0.5)	No
1,2,4-Trimethylbenzene	4	None	0.0021 (HA5-0.5)	No

Xylenes	1	None	0.0043 (HA5-0.5)	No

None of the soil samples collected and analyzed for VOCs exceed their respective commercial/industrial or construction worker ESLs, or commercial/industrial DTSC SLs, for VOCs in soil.

SVOCs in Soil

SVOCs were not detected in any of the eight soil samples analyzed for SVOCs, as presented in Table 9.

OCPs in Soil

OCPs were detected in seven of the eight soil samples analyzed for OCPs. Table 5 below summarizes OCP detections in the soil samples. A detailed table of OCP analytical results is presented in Table 10.

Table 5 Summary of Detected Concentrations of OCPs in Soil

Constituent	Number of Detections	Samples Exceeding ESL	Maximum Detected Concentration (mg/kg)/ Boring ID-Depth (ft bgs)	ESL Exceeded (mg/kg)
Chlordane	1	None	0.071 (HA8-0.5)	No
4,4’-Dichlorodiphenyl-dichloroethane (DDD)	3	None	0.0020 (HA2-0.5)	No
4,4’-Dichlorodiphenyl-dichloroethylene (DDE)	4	None	0.0053 (HA2-0.5)	No
4,4’-Dichlorodiphenyl-trichloroethane (DDT)	7	None	0.0085 (HA2-0.5)	No
Dieldrin	1	None	0.00038 (HA8-0.5)	No
Toxaphene	1	None	0.045 (HA1-0.5)	No

None of the soil samples collected and analyzed for OCPs exceed their respective commercial/industrial or construction worker ESLs, or commercial/industrial DTSC SLs, for OCPs in soil.

Title 22 Metals

Metals were detected in each of the eight soil samples analyzed for Title 22 Metals. Table 6 summarizes metals detections in the soil borings that exceed ESLs, DTSC SLs, and/or background concentration ranges. A detailed table of metals analytical results is presented in Table 11.

Table 6 Summary of Detected Concentrations of Title 22 Metals in Soil

Constituent	Number of Detections	Samples Exceeding ESL, DTSC SL, and/or Background Concentration Range	Maximum Detected Concentration (mg/kg)/ Boring ID-Depth (ft bgs)	ESL and/or Background Concentration Range Exceeded (mg/kg)
Arsenic	8	8	4.6 (HA4-0.5)	0.98 (Construction Worker ESL), 0.31 (Commercial/Industrial ESL), 0.36 (Commercial/Industrial DTSC SL)

All eight soil samples analyzed contained arsenic at concentrations exceeding the construction worker ESL, the commercial/industrial ESL, and the commercial/industrial DTSC SL; however, all concentrations are within the background concentration range (Kearny Foundation 1996).

Conclusions and Recommendations

Soil Matrix

Based on the analytical results for soil at the site, the soil matrix is not impacted by VOCs, SVOCs, or OCPs at levels that exceed commercial/industrial or construction worker ESLs and/or DTSC SLs.

TPH was detected in 13 of the 14 samples analyzed. TPH-d was detected in exceedance of its commercial/industrial DTSC SL at boring location HA3 at a depth of 0.5 foot bgs. TPH-d was not detected above the laboratory reporting limit in the 3.0-foot sample from this boring location (HA3), indicating that impacts are isolated to shallow soil in that area. We should note that it appears this site is potentially used for some event parking. It is likely the TPH was deposited from vehicles. Therefore, if the site is used for parking the conditions may change. Additionally, only eight soil borings were completed at the site so there is a potential for other areas of the site to contain elevated TPH concentrations.

Arsenic was identified in exceedance of the construction worker ESL, the commercial/industrial ESL, and the commercial/industrial DTSC SL at all eight locations at a depth of 0.5 foot bgs. The detected concentrations are below the upper-end background concentration range for arsenic in California soil (11 mg/kg).

Constituents of Concern

Based on the results of the Phase II ESA, the following constituents of concern have been identified for the site.

Table 7 Summary of Constituents of Concern

Medium	COCs	Boring Location	Exceedances
Soil Matrix	TPH-d	HA3 at 0.5 foot bgs	Commercial/Industrial DTSC SL

Recommendations

The data collected during the Phase II ESA indicate that TPH concentrations in soil across the site generally pose a negligible environmental and human health risk based on its potential use for event parking, and no further assessment or remediation is recommended at this time. We understand that the site may potentially be used for event parking or other uses until constructions activities commence at a date yet to be determined.

Rincon's findings are based on a limited number of samples, and site conditions may change based on potential use for event vehicle parking. Therefore, Rincon recommends preparation of a Soil Management Plan (SMP) to be implemented during construction and grading activities associated with the proposed project. The SMP will provide guidance for the identification, management, and disposal of soil suspected to be impacted by TPH that may be discovered during grading activities.

Limitations

This report has been prepared for and is intended for the exclusive use of the City of Oxnard. The contents of this report should not be relied upon by any other party without the written consent of Rincon.

Our conclusions regarding the site are based on observations of existing conditions at the site and the results of a limited subsurface sampling program. The results of this evaluation are qualified by the fact that only limited sampling and analytical testing was conducted during this assessment.

This scope was not intended to completely establish the quantities and distribution of contaminants present at the site. The concentrations of contaminants measured at any given location may not be representative of conditions at other locations. Furthermore, conditions may change at any particular location as a function of time in response to natural conditions, chemical reactions, and other events. Conclusions regarding the condition of the site do not represent a warranty that all areas within the site are similar to those sampled.

References

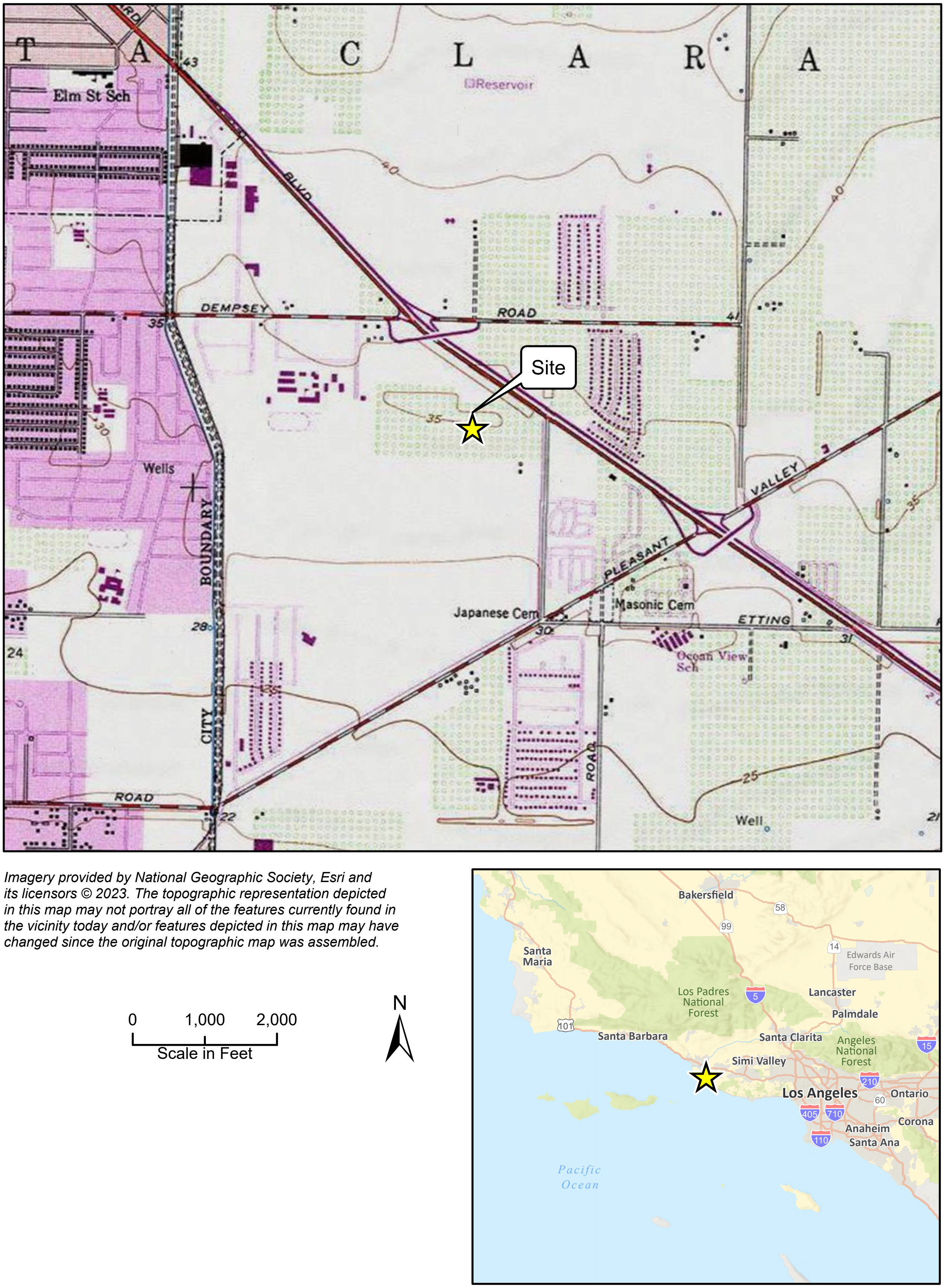
Department of Toxic Substances Control (DTSC). 2020. Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note 3. June 2020, revised May 2022.

Kearney Foundation. 1996. *Background Concentrations of Trace and Major Elements in California Soils.* Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California. March 1996.

Rincon Consultants, Inc. (Rincon). 2022. *Hazardous Materials Evaluation, South Oxnard Aquatics Center Project, Oxnard, California*. December 2022.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2019. *Environmental Screening Levels.* July 2019.

Figures



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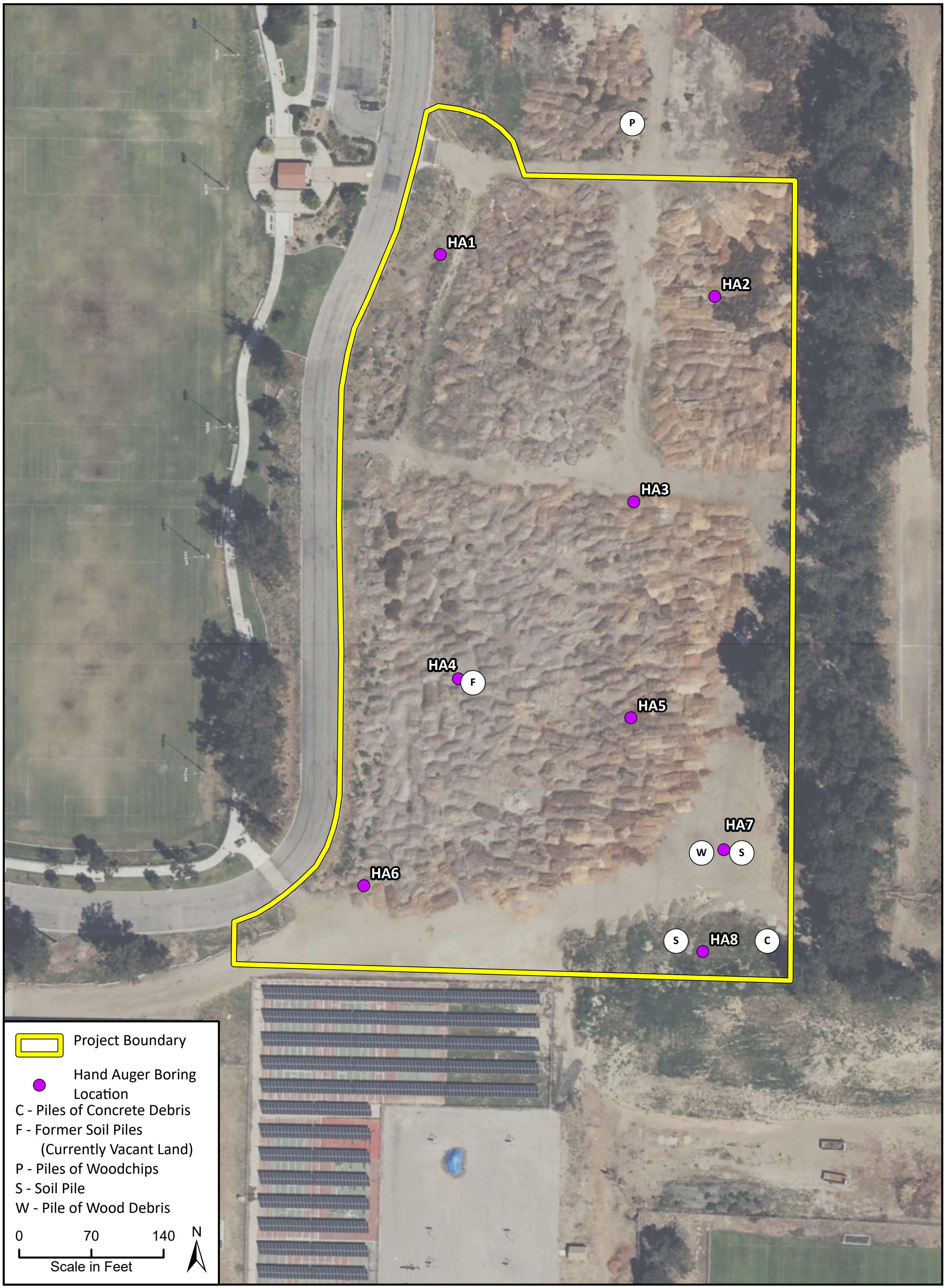
Vicinity Map

Figure 1



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Site Map

Figure 2

Tables Included as Attachments

Table 9: Soil Matrix Analytical Results - TPH, VOCs, and SVOCs

Sample ID	Depth (feet bgs)	Sampling Date	Total Petroleum Hydrocarbons*			Volatile Organic Compounds (VOCs)						Semi-Volatile Organic Compounds
			TPH-g	TPH-d	TPH-o	Benzene	Ethylbenzene	Toluene	1,2,4-Trimethylbenzene	Xylenes	Other VOCs	
			mg/kg									
HA1	0.5	2/7/2023	<5.0	<2.2	<7.0	<0.00090	<0.00092	**0.0016 J**	<0.0011	<0.0034	*<various*	*<various*
	3.0		--	--	--	--	--	--	--	--	--	--
HA2	0.5		<50	**130 A10, A52**	**1,300 A10, A57**	**0.00042 J**	<0.00069	**0.0041 J**	**0.0015 J**	<0.0025	*<various*	*<various*
	3.0		<5.0	**13 A52**	**31 A57**	--	--	--	--	--	--	--
HA3	0.5		<390	**780 J, A10, A52**	**5,200 A10, A57**	**0.0025 J**	<0.00085	**0.0023 J**	**0.0013 J**	<0.0031	*<various*	*<various*
	3.0		<5.0	<2.2	**23 A57**	--	--	--	--	--	--	--
HA4	0.5		<140	**370 A52**	**3,200 A57**	**0.0061 J**	**0.00099 J**	**0.0043 J**	**0.0012 J**	<0.003	*<various*	*<various*
	3.0		<79	**210 A52**	**2,500 A57**	--	--	--	--	--	--	--
HA5	0.5		<94	**270 A52**	**3,400 A57**	**0.007 J**	**0.0021 J**	**0.0099 J**	**0.0021 J**	**0.0043 J**	*<various*	*<various*
	3.0		<110	<47	**2,400 A57**	--	--	--	--	--	--	--
HA6	0.5		<25	**79 A10, A52**	**410 A10, A57**	**0.0035 J**	<0.0015	**0.0032 J**	<0.0017	<0.0053	*<various*	*<various*
	3.0		<5.0	<2.2	**37 A57**	--	--	--	--	--	--	--
HA7	0.5		<110	**260 A52**	**3,600 A57**	**0.0049 J**	<0.0011	**0.0049 J**	<0.0013	<0.0039	*<various*	*<various*
	3.0		<120	<51	**4,400 A57**	--	--	--	--	--	--	--
HA8	0.5		<5.0	<2.2	**37 A57**	**0.0017 J**	**0.0032 J**	**0.0031 J**	<0.00080	<0.0025	*<various*	*<various*
	3.0		--	--	--	--	--	--	--	--	--	--
Construction Worker ESLs			*1,800*	*1,100*	*54,000*	*33*	*540*	*4,700*	*NE*	*2,400*	*Various*	*Various*
Commercial/Industrial ESLs			*2,000*	*1,200*	*180,000*	*1.4*	*26*	*5,300*	*NE*	*2,500*	*Various*	*Various*
Commercial/Industrial DTSC SLs			*NE*	*500*	*18,000*	*1.44*	*NE*	*5,300*	*NE*	*NE*	*Various*	*Various*

Definitions

bold	Analyte detected above the laboratory reporting limit
🟦	Concentration detected above construction worker ESL
🟪	Concentration detected above commercial/industrial ESL and/or DTSC SL
<	Analyte not detected above the laboratory reporting limit or method detection limit
--	Not analyzed
*	TPH by EPA Method 8015B/FFP with silica gel treatment
A10	Laboratory flag indicating that detection and quantitation limits were raised due to matrix interference
A52	Laboratory flag indicating the chromatogram is not typical of diesel
A57	Laboratory flag indicating the chromatogram is not typical of motor oil
bgs	Below ground surface
mg/kg	Milligrams per kilogram
J	Laboratory flag indicating estimated value (between method detection limit and laboratory reporting limit)
NE	Not established
SVOCs	Semi-volatile organic compounds
TPH	Total petroleum hydrocarbons
TPH-g	TPH in the gasoline range
TPH-d	TPH in the diesel range
TPH-o	TPH in the motor oil range
VOCs	Volatile organic compounds

Table 10: Soil Analytical Results - OCPs

Sample ID	Depth (feet bgs)	Sampling Date	Chlordane (Technical)	4,4'-DDD	4,4'-DDE	4,4'-DDT	Dieldrin	Toxaphene	Other OCPs
			mg/kg						
HA1	0.5	2/7/2023	<0.0010	**0.0014**	**0.011**	**0.0027**	<0.00036	**0.045 J**	*<various*
	3.0		--	--	--	--	--	--	--
HA2	0.5		<0.020	**0.0020 J, A10**	**0.0053 J, A10**	**0.0085 J, A10**	<0.00072	<0.028	*<various*
	3.0		--	--	--	--	--	--	--
HA3	0.5		<0.46	<0.030	<0.044	<0.018	<0.017	<0.65	*<various*
	3.0		--	--	--	--	--	--	--
HA4	0.5		<0.43	<0.027	<0.041	**0.0810 J, A10**	<0.015	<0.60	*<various*
	3.0		--	--	--	--	--	--	--
HA5	0.5		<0.43	<0.027	<0.041	**0.12 J, A10**	<0.015	<0.60	*<various*
	3.0		--	--	--	--	--	--	--
HA6	0.5		<0.010	<0.00064	**0.013 A10**	**0.0340 J, A10**	<0.00036	<0.014	*<various*
	3.0		--	--	--	--	--	--	--
HA7	0.5		<0.33	<0.021	<0.032	**0.057 J, A10**	<0.012	<0.47	*<various*
	3.0		--	--	--	--	--	--	--
HA8	0.5		**0.071 J, A10**	**0.0011 J, A10**	**0.0030 J, A10**	**0.0030 J, A10**	**0.0004 J, A10**	<0.014	*<various*
	3.0		--	--	--	--	--	--	--
Construction Worker ESLs			*14*	*81*	*57*	*57*	*1.1*	*14*	*Various*
Commercial/Industrial ESLs			*2.2*	*12*	*8.3*	*8.5*	*0.16*	*2.2*	*Various*
Commercial/Industrial DTSC SLs			*6.1*	*6.2*	*9.3*	*7.1*	*0.093*	*1.2*	*Various*
TTLC Thresholds			*2.5*	*1.0*	*1.0*	*1.0*	*8.0*	*5*	*Various*

Definitions

bold	Analyte detected above the laboratory reporting limit
<	Analyte not detected above the laboratory reporting limit
--	Not analyzed
bgs	Below ground surface
mg/kg	Milligrams per kilogram
A10	Laboratory flag indicating that detection and quantitation limits were raised due to matrix interference
DDD	4,4'-Dichlorodiphenyldichloroethane
DDE	4,4'-Dichlorodiphenyldichloroethylene
DDT	4,4'-Dichlorodiphenyltrichloroethane
J	Laboratory flag indicating estimated value (between method detection limit and laboratory reporting limit)
NE	Not established
OCPs	Organochlorine pesticides
TTLC	Total Threshold Limit Concentration thresholds for hazardous waste characterization

Screening Levels

ESLs - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, July 2019, Revision 2, Direct Exposure Human Health Risk Levels (Table S-1), Cancer Risk or Non-Cancer Hazard (lower value selected) for:

Commercial/Industrial ESLs - Commercial/Industrial: Shallow Soil Exposure

Construction Worker ESLs - Construction Workers: Any Land Use/Depth Soil Exposure

DTSC SLs - Department of Toxic Substances Control (DTSC)-Modified Screening Levels, DTSC Human and Ecological Risk Office (HERO), Human Health Risk Assessment (HHRA) Note Number 3, June 2020 (revised May 2022), DTSC-Recommended Screening Levels for Soil Analytes (Table 1) (lower value selected) for:

Commercial/Industrial DTSC SLs - Commercial/industrial soil

Table 11: Soil Matrix Analytical Results - Metals

Sample ID	Depth (feet bgs)	Sampling Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			mg/kg																
HA1	0.5	2/7/2023	<0.33	**3.2**	**72**	**0.25 J**	**0.5**	**11**	**4.5**	**24**	**5.7**	**0.029 J**	**0.26 J**	**12**	<0.98	**0.14 J**	<0.64	**21**	**57**
	3.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HA2	0.5		**0.74 J**	**3.8**	**91**	**0.24 J**	**0.81**	**17**	**4**	**9.9**	**6.6**	**0.033 J**	**2.1 J**	**16**	**1.2**	**0.13 J**	<0.64	**27**	**34**
	3.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HA3	0.5		<0.33	**3.3**	**67**	**0.17 J**	**0.71**	**18**	**3.5**	**8.9**	**4.5**	**0.048 J**	**0.57 J**	**21**	**1.4**	**0.11 J**	<0.64	**32**	**28**
	3.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HA4	0.5		<0.33	**4.6**	**84**	**0.18 J**	**0.49 J**	**17**	**3.3**	**8.1**	**7.6**	**0.024 J**	**1.9 J**	**17**	**1.3**	<0.067	<0.64	**25**	**27**
	3.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HA5	0.5		**0.45 J**	**2.5**	**89**	**0.17 J**	**0.52**	**19**	**6.2**	**9.9**	**6.7**	**0.11 J**	**0.17 J**	**22**	<0.98	**0.17 J**	<0.64	**31**	**32**
	3.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HA6	0.5		<0.33	**3.2**	**73**	**0.22 J**	**0.49 J**	**9.6**	**4**	**9.8**	**5.4**	**0.32**	**0.27 J**	**10**	<0.98	**0.13 J**	<0.64	**19**	**35**
	3.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HA7	0.5		<0.33	**3.7**	**92**	**0.18 J**	**0.57**	**14**	**3.3**	**8.3**	**5.7**	**0.12 J**	**0.68 J**	**17**	<0.98	<0.067	<0.64	**29**	**29**
	3.0		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HA8	0.5		**0.49 J**	**3.9**	**64**	**0.19 J**	**0.79**	**11**	**4.2**	**14**	**8.2**	**1.9**	**0.5 J**	**11**	<0.98	**0.17 J**	<0.64	**22**	**46**
	3.0		--	--	--	--	--	--	--	--	--	0.087	--	--	--	--	--	--	--
Construction Worker ESLs			*50*	*0.98*	*3,000*	*27*	*51*	*160**	*28*	*14,000*	*160*	*44*	*1,800*	*86*	*1,700*	*1,800*	*3.5*	*470*	*110,000*
Commercial/Industrial ESLs			*160*	*0.31*	*220,000*	*230*	*1,100*	*160**	*350*	*47,000*	*320*	*190*	*5,800*	*11,000*	*5,800*	*5,800*	*12*	*5,800*	*350,000*
Commercial/Industrial DTSC SLs			*NE*	*0.36*	*NE*	*230*	*79*	*NE*	*NE*	*NE*	*500*	*4.4*	*NE*	*11,000*	*NE*	*4,200*	*NE*	*NE*	*NE*
Background Concentrations			*0.15-1.95*	*0.6-11*	*133-1,400*	*0.25 - 2.70*	*0.05 - 1.70*	*23 - 1,579*	*2.7 - 46.9*	*9.1 - 96.4*	*12.4 - 97.1*	*12.4 - 97.1*	*0.1 - 9.6*	*9.0 - 509*	*0.015 - 0.430*	*0.10 - 8.3*	*0.17 - 1.1*	*39 - 288*	*88 - 236*
TTLC Thresholds			*500*	*500*	*10,000*	*75*	*100*	*2,500*	*8,000*	*2,500*	*1,000*	*20*	*3,500*	*2,000*	*100*	*500*	*700*	*2,400*	*5,000*
STLC Screening Criteria/ Thresholds			*150*	*50*	*1,000*	*7.5*	*10*	*50*	*800*	*250*	*50*	*2*	*3,500*	*200*	*10*	*50*	*70*	*240*	*2,500*
TCLP Screening Criteria/ Thresholds			*NE*	*100*	*2,000*	*NE*	*20*	*100*	*NE*	*NE*	*100*	*4*	*NE*	*NE*	*20*	*100*	*NE*	*NE*	*NE*

Definitions

bold	Analyte detected above the laboratory reporting limit
🟦	Concentration detected above construction worker ESL
🟪	Concentration detected above commercial/industrial ESL and/or DTSC SL
<	Analyte not detected above the laboratory reporting limit or method detection limit
--	Not analyzed
bgs	Below ground surface
mg/kg	Milligrams per kilogram
J	Laboratory flag indicating estimated value (between method detection limit and laboratory reporting limit)
NE	Not established
STLC	Soluble Threshold Limit Concentration
TCLP	Toxicity Characteristic Leaching Procedure
TTLC	Total Threshold Limit Concentration
*	Direct exposure human health risk ESLs have not been established for total chromium; therefore, the Tier 1 ESL was used

Screening Levels

Background Concentration - Kearney, Background Concentrations of Trace and Major Elements in California Soils, University of California, 1996

ESLs - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, July 2019, Revision 2, Direct Exposure Human Health Risk Levels (Table S-1), Cancer Risk or Non-Cancer Hazard (lower value selected) for:

Commercial/Industrial ESLs - Commercial/Industrial: Shallow Soil Exposure

Construction Worker ESLs - Construction Workers: Any Land Use/Depth Soil Exposure

DTSC SLs - Department of Toxic Substances Control (DTSC)-modified Screening Levels, DTSC Human and Ecological Risk Office (HERO), Human Health Risk Assessment (HHRA) Note Number 3, June 2020 (revised May 2022), DTSC-Recommended Screening Levels for Soil Analytes (Table 1) (lower value selected) for:

Commercial/Industrial DTSC SLs - Commercial/industrial soil

Screening Levels

ESLs - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, July 2019, Revision 2, Direct Exposure Human Health Risk Levels (Table S-1), Cancer Risk or Non-Cancer Hazard (lower value selected) for:

- Commercial/Industrial ESLs - Commercial/Industrial: Shallow Soil Exposure
- Construction Worker ESLs - Construction Workers: Any Land Use/Depth Soil Exposure

DTSC SLs - Department of Toxic Substances Control (DTSC)-Modified Screening Levels, DTSC Human and Ecological Risk Office (HERO), Human Health Risk Assessment (HHRA) Note Number 3, June 2020 (revised May 2022), DTSC-Recommended Screening Levels for Soil Analytes (Table 1) (lower value selected) for:

- Commercial/Industrial DTSC SLs - Commercial/industrial soil

Appendix A

Field Procedures

Rincon Consultants, Inc.

Environmental Scientists *Planners* *Engineers*

Field Procedure

1 Soil Matrix Sampling – Hand Auger

1.1 Definitions

- Auger – A hollow cylinder equipped with cutting bits to bore through soil when manually rotated; placed into the sub-surface to advance the boring and collect disturbed soil samples
- Cross Handle – A t-shaped metal bar that is connected to the auger by the rod(s) and is used to manually rotate the auger
- Custody Seal – A laboratory provided seal added to the sample containers or sample cooler once sampling has been completed to identify and protect the integrity of the samples (typically only used if samples will be shipped)
- Rods – Solid metal bars used to connect the auger and cross handle either with threaded or quick connections
- Sample Liner – A plastic (acetate) tube inserted into the soil core sampler used to recover an undisturbed soil sample
- Slide Hammer – A weight that slides along a rod and replaces the cross handle during sampling; used in combination with the soil core sampler to collect undisturbed soil samples
- Soil Core Sampler – A hollow cylinder without cutting bits that is equipped with a sample liner and is used in place of an auger; used in combination with a slide hammer to collect undisturbed soil samples
- Target sample depth – The bottom of the depth interval
- Temperature Blank - A vial filled with tap water and stored in the cooler during sample collection and transportation (not required for all projects)
- Trip Blank - A laboratory provided, volatile vial container filled with lab grade deionized water, affixed with a custody seal. This blank represents the “trip” the volatile vials take from leaving the lab with the bottle order to the field for sample collection and back to the lab for analysis
- Work Plan – The document that specifies the sampling rationale and specific work scope for a site assessment. The Work Plan may or may not be subject to regulatory review. The Work Plan may call for the use of some or all of the methodologies described herein, and should be viewed as a companion document to these Field Procedures

1.2 Introduction

This Field Procedure describes the methodology and techniques used to advance a boring into soil for the collection of soil matrix samples using a hand auger.

Hand augers are used to advance a boring by manually rotating an auger with cutting bits into the sub-surface; this motion forces soil into the auger. Once the auger is filled with soil, it is brought to the surface, and the soil is examined, used to log the stratigraphy, and either disposed or collected into sample containers. As the auger is advanced deeper into the sub-surface, additional rods are added to the assembly to access greater depths. If desired, when the target sample depth is reached, the auger can be replaced with a soil core sampler, and the cross handle with a slide hammer. As the hammer is manually lifted and dropped, the soil core sampler is advanced into the sub-surface and undisturbed soil is forced into the sample liner. Either the sample liner or the sample containers are delivered to the laboratory for analysis.

1.3 Equipment and Instrumentation

The following is a list of instruments and equipment used during field activities.

Typically Provided by the Laboratory	Rincon Equipment
Custody seal[1]	Level D personal protective equipment (PPE) and project-specific PPE as specified in the Work Plan
Sample containers (jars)[1]	Hand auger
Sample cooler	Rubber mallet
Sample labels	Ice for cooler
Trip blanks[1]	Resealable plastic sample bags
Temperature blanks[1]	Sample caps[1]
EPA Method 5035 kits[1]	Acetate sleeves, caps, and Teflon tape[1]
	Photoionization detector (PID)
	Measuring tape
	Impermeable barrier (Visqueen)
	5-gallon bucket
	Two crescent wrenches
	Field sheets
	GPS with sub-meter accuracy
	Investigation derived waste container[1]

1 – If needed; see Work Plan

All instruments will be calibrated per the manufacturer’s specifications at the beginning of each workday.

1.4 Hand Auger Drilling

Prior to drilling activities, a tail-gate meeting will be conducted by Rincon field staff to review the procedures that Rincon personnel (and its subcontractors, if applicable) will follow to minimize the potential for health and safety hazards during the course of work. These procedures are detailed in the site-specific Health and Safety Plan.

If a geophysical or utility survey is planned (see Work Plan), it will be conducted prior to the activities described in this document. Drilling into any utilities/obstructions could result in injury and damage to property.

Hand auger drilling will proceed as follows:

1. The location of the boring will be recorded using a GPS with sub-meter accuracy.
2. Prior to drilling activities, the impermeable barrier and bucket will be placed adjacent to the target location.
3. The hand auger assembly, consisting of the auger, the rods, and the cross handle, will be connected. If the specific hand auger uses threads, thread tape may be used to prevent binding.
4. Once all components are securely attached and the hand auger assembly is properly connected, it will be placed at the target location such that all auger bits make firm contact with the ground surface.
5. Proper form will be used to minimize the risk of injury, which consists of a wide stance, a straight back, and a firm grip on the cross handle such that strain on the wrists is minimized. Using this form, the cross handle will be rotated clock-wise to advance the auger into the ground surface. Progress into the sub-surface will be checked periodically using the measuring tape.
6. Once the auger fills with soil, the hand auger assembly will be carefully lifted out of the boring. If the target sample depth has been reached, sampling will proceed as described in Section 1.5; if the soil will not be retained as a sample, a portion will be transferred to a plastic baggie and set aside. The remaining soil will be emptied onto the impermeable barrier by tilting the hand auger assembly and either shaking it or tapping it with the rubber mallet. The soil will be examined and logged in accordance with the Universal Soil Classification System (USCS) and ASTM International (ASTM) D2488-93, unless otherwise specified in the Work Plan. Observations will be recorded on field sheets.
7. After at least 5 minutes have elapsed since placing the soil into a plastic baggie, the PID will be used to screen the soil for volatile organic compounds (VOCs) by carefully inserting the PID probe tip into the baggie, and holding the probe tip 1/8-inch away from the soil for 10 seconds. The maximum PID reading will be recorded in parts per million (ppm) on the field sheets.
8. As the boring is advanced deeper into the sub-surface, additional rods will be installed onto the hand auger assembly to extend its length.
9. If a physical impediment is encountered (such as a cobble, lithified strata, gravel, hardpan, etc.) that precludes further advancement with the hand auger, the boring will be marked as

having encountered refusal on the field sheet, and the boring will be backfilled as indicated in the work plan.

1.5 Sampling Procedures

Upon reaching the target sample depth, soil sampling may proceed according to one or both procedures described below, as specified by the Work Plan.

1.5.1 Standard Sampling

1. The hand auger assembly will be carefully lifted out of the boring and transferred to the impermeable barrier.
2. If using an EPA Method 5035 kit (5035 kit), soil aliquots will immediately be collected from the auger adjacent to the bits using the kit's dedicated t-handle and transferred to the kit's vials.
3. The sample container (typically a glass jar) will be held beneath the auger, and soil will be carefully transferred from the auger to the sample container using decontaminated (see Section 5) or dedicated hand tools.
10. The sample container will be properly sealed and labeled as described in Section 1.6. After at least 5 minutes have elapsed since sample collection, the PID will be used to screen the soil for VOCs by carefully inserting the PID probe tip into the sample container, and holding the probe tip 1/8-inch away from the soil for 10 seconds. The maximum PID reading will be recorded in ppm on the field sheets.

1.5.2 Soil Core Sampling

1. A sample liner will be installed into the soil core sampler, and the soil core sampler installed onto the hand auger assembly instead of the auger. The cross handle will be replaced with the slide hammer, and the hand auger assembly will be carefully lowered into the boring.
2. Keeping the back straight, the slide hammer will be manually lifted and dropped repeatedly to advance the soil core sampler into the sub-surface. After the soil core sampler has been pushed a distance equal to its length into the sub-surface, it will be carefully removed to the surface.
3. The sample liner will be removed from the soil core sampler, and one end sealed with Teflon tape and a sample cap. If using a 5035 kit, soil aliquots will immediately be collected from the opposite (un-capped) end of the sample liner using the kit's dedicated t-handle and transferred to the kit's vials.
4. The PID will be used to screen the soil for VOCs by carefully holding the probe tip 1/8-inch away from the soil on the sampler liner's un-capped end for 10 seconds. The maximum PID reading will be recorded in ppm on the field sheets. The sample liner will then be sealed with Teflon tape and a sample cap.

1.6 Post Sampling Procedures

1. Immediately following collection, all samples will be labeled and recorded on a chain-of-custody (COC). Each sample will be marked with the following information:
    - Sample ID, preservative, analysis, sampler, date and time, project number, and company name.
2. Sample containers will be double bagged using resealable plastic bags to protect the sample from moisture and to prevent breakage and potential cross contamination during storage and transportation. If transported by a commercial carrier (shipped), all glass sample containers will be protected with bubble wrap and will be double bagged using resealable plastic bags.
3. The samples will be placed into an insulated cooler with ice (to preserve the samples) at 4 Celsius or below. If required, temperature blanks will be placed in the cooler with the samples. If required, trip blanks will be labeled, recorded onto the COC, and placed in the cooler. Additionally, if required, the custody seal will be applied to the cooler, and the date, time, and sampler's name will be written on it.

1.7 Decontamination Procedures

All reusable sampling equipment will undergo a three-stage decontamination process.

Decontamination will proceed as follows:

1. A decontamination station will be pre-established prior to commencement of sampling activities. Three 5-gallon buckets will be used to decontaminate all sampling equipment. An impermeable liner (visqueen) will be placed on the ground beneath the decontamination buckets to prevent/capture liquids from coming into contact with the ground surface.
2. Prior to first use at the site and between each discrete sample location, equipment will be washed using a non-phosphate detergent and potable water (first bucket). Equipment will then be rinsed in potable water (second bucket), and finally rinsed with deionized water (third bucket).
3. All liquids will be containerized prior to appropriate disposal. Equipment intended for one-time use will be packaged for appropriate disposal.

1.8 Investigation Derived Waste

Upon completion of sampling activities, all investigation derived waste (IDW), including decontamination water and un-retained soil cuttings will be stored in a 55-gallon drum or other approved container, and labelled with the following information:

- Contents, generator name, generator address, contact information, and the date of generation.

If specified in the Work Plan, secondary containment may be needed. The container with IDW will then be placed in a secure location as determined in consultation with the client. Disposable sampling equipment and PPE will be disposed in a trash bag.

1.9 Chain-of-Custody Protocol

COC protocols will be employed to protect the integrity of the samples and the traceability of their handling from collection to chemical analysis. The protocol will be in accordance with the protocols detailed in Chapter 9 of the United States Environmental Protection Agency's SW-846 Compendium. The following information will be provided in ink on the COC for each sample:

- Unique sample identifier, date and time of collection, medium type, number of sample containers, requested analyses, GeoTracker Global Id number (where applicable).

In addition, the COC will also include general project information, including, at a minimum:

- Rincon project manager and contact information, name of sampler, Rincon project number, project site address/location, dates and times of relinquishment and receipt, and signature of each person possessing samples.

The COC will be kept with the sample shipment at all times. If samples are to be delivered to the laboratory via courier, a copy of the signed COC will be retained (either a carbon copy or photo-documentation) prior to relinquishing the samples to the courier.

1.10 Record Keeping

Field activities, sample collection details, and boring logs will be recorded on field sheets. Field sheets will be completed in real-time during each day of field work, and will include the following information, at a minimum:

- Names of Rincon field staff and other personnel onsite and their companies, weather conditions, a description of site activities, details of field work with corresponding timestamps, and field maps showing sample locations and other relevant site features.

Field sheets will be scanned/uploaded to the project file at the end of each field day, at the end of the field event if multiple days, or at the end of each week if multiple weeks. Rincon will keep the field activity sheets on-file, and they may be provided upon request. Boring logs (if completed) will be included in the report.

Appendix B

Soil Matrix Laboratory Analytical Report

Date of Report: 03/15/2023

Scott English

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Client Project:	[none]
BCL Project:	22-13765
BCL Work Order:	2303085
Invoice ID:	B470209, B470697, B471487

Enclosed are the results of analyses for samples received by the laboratory on 2/10/2023. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1001402681

Sincerely,

Contact Person: Eli Velazquez
Client Service Rep

Table of Contents

Sample Information

Sample Results

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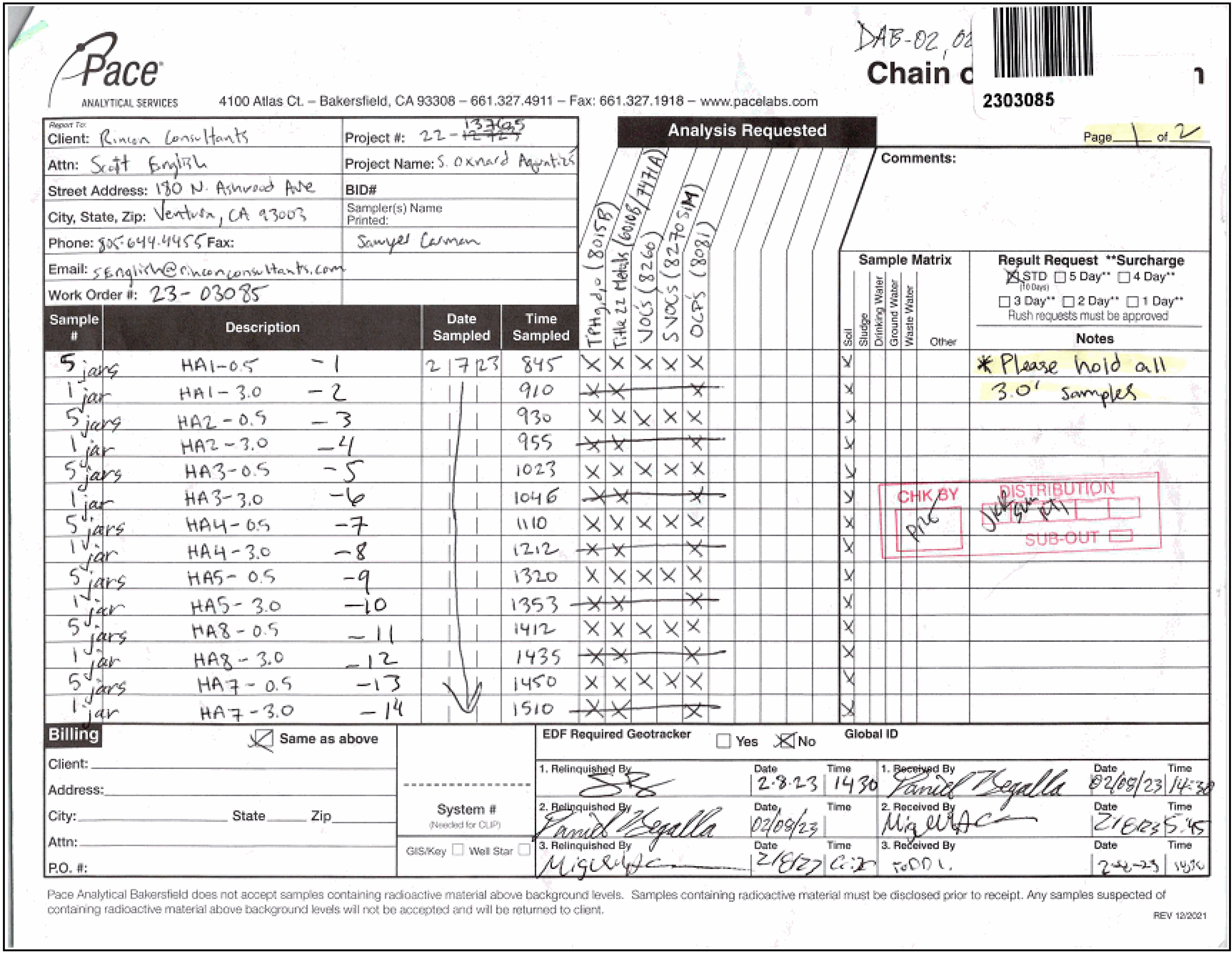

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DAB-02, 02

Chain o

2303085

Page 1 of 2

Report To:
Client: Rincon Consultants
Attn: Scott English
Street Address: 180 N. Ashwood Ave
City, State, Zip: Ventura, CA 93003
Phone: 805-644-4455 Fax:
Email: sEnglish@rinconconsultants.com
Work Order #: 23-03085

Project #: 22-~~12427~~ 13395
Project Name: S. Oxnard Agrati25
BID#
Sampler(s) Name Printed: Samyel Carmen

Analysis Requested

Comments:

Sample #	Description	Date Sampled	Time Sampled	TPHg,d,o (8015B)	Title 22 Metals (6010B/7471A)	VOCs (8260)	SVOCs (8270 SIM)	OCPs (8081)	Soil	Sludge	Drinking Water	Ground Water	Waste Water	Other	Notes
5 jars	HA1-0.5 -1	2/7/23	845	X	X	X	X	X	X						* Please hold all
1 jar	HA1-3.0 -2		910	~~X~~	~~X~~			~~X~~	X						3.0' samples
5 jars	HA2-0.5 -3		930	X	X	X	X	X	X						
1 jar	HA2-3.0 -4		955	~~X~~	~~X~~			~~X~~	X						
5 jars	HA3-0.5 -5		1023	X	X	X	X	X	X						
1 jar	HA3-3.0 -6		1046	~~X~~	~~X~~			~~X~~	X						
5 jars	HA4-0.5 -7		1110	X	X	X	X	X	X						
1 jar	HA4-3.0 -8		1212	~~X~~	~~X~~			~~X~~	X						
5 jars	HA5-0.5 -9		1320	X	X	X	X	X	X						
1 jar	HA5-3.0 -10		1353	~~X~~	~~X~~			~~X~~	X						
5 jars	HA8-0.5 -11		1412	X	X	X	X	X	X						
1 jar	HA8-3.0 -12		1435	~~X~~	~~X~~			~~X~~	X						
5 jars	HA7-0.5 -13		1450	X	X	X	X	X	X						
1 jar	HA7-3.0 -14		1510	~~X~~	~~X~~			~~X~~	X						

Result Request **Surcharge
☒ STD (10 Days) ☐ 5 Day** ☐ 4 Day**
☐ 3 Day** ☐ 2 Day** ☐ 1 Day**
Rush requests must be approved

CHK BY PJC
DISTRIBUTION JKL SV RJ
SUB-OUT ☐

Billing ☒ Same as above
Client:
Address:
City: State Zip
Attn:
P.O. #:

System # (Needed for CLIP)
GIS/Key ☐ Well Star ☐

EDF Required Geotracker ☐ Yes ☒ No Global ID

	Date	Time		Date	Time
1. Relinquished By	2-8-23	1430	1. Received By Daniel Begalla	02/08/23	14:30
2. Relinquished By Daniel Begalla	02/08/23		2. Received By	2/8/23	5:45
3. Relinquished By	2/8/23	6:20	3. Received By	2-8-23	1930

Pace Analytical Bakersfield does not accept samples containing radioactive material above background levels. Samples containing radioactive material must be disclosed prior to receipt. Any samples suspected of containing radioactive material above background levels will not be accepted and will be returned to client.

REV 12/2021

DAB-02, 02/08, 2A, 2

Chain of Custody Form

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Page 2 of 2

Report To:
Client: Rincon Consultants
Attn: Scott English
Street Address: 180 N. Ashwood Ave
City, State, Zip: Ventura, CA 93003
Phone: 805.644.4455 Fax:
Email: Senglish@rinconconsultants.com
Work Order #: 23-03085

Project #: 22-13765
Project Name: S. Oxnard Aquatics
BID#
Sampler(s) Name Printed: Sawyer Carman

Comments:

Result Request **Surcharge
☒ STD (10 Days) ☐ 5 Day** ☐ 4 Day**
☐ 3 Day** ☐ 2 Day** ☐ 1 Day**
Rush requests must be approved

Sample #	Description		Date Sampled	Time Sampled	TPHg,d,o (8015B)	Title 22 Metals (6010B/7471A)	VOCs (8260)	SVOCs ~~(8260)~~ (8270SIM)	OCPs (8081)					Soil	Sludge	Drinking Water	Ground Water	Waste Water	Other	Notes
5 jars	HA6-0.5	-15	2/7/23	1520	X	X	X	X	X					X						* Please hold all
1 jar	HA6-3.0	-16	2/7/23	1555	~~X~~	~~X~~			~~X~~					X						3.0' samples

Billing ☒ Same as above
Client:
Address:
City: State Zip
Attn:
P.O. #:

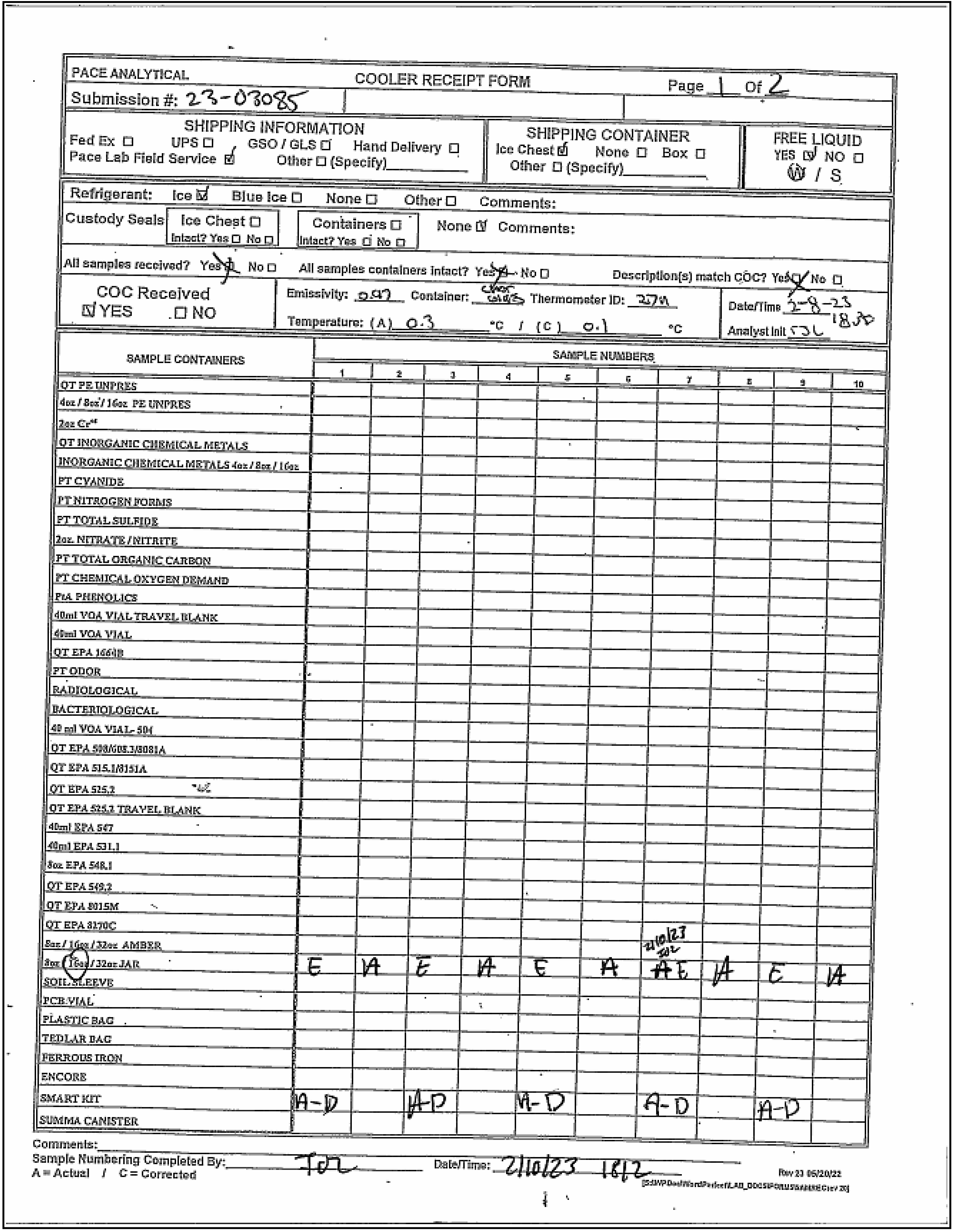
System # (Needed for CLIP)
GIS/Key ☐ Well Star ☐

EDF Required Geotracker ☐ Yes ☒ No Global ID

	Date	Time		Date	Time
1. Relinquished By	2.8.23	1430	1. Received By	02/08/23	14:30
2. Relinquished By	02/08/23		2. Received By	2/8/23	5:45
3. Relinquished By	2/8/23	6:30	3. Received By	2/8/23	1830

Pace Analytical Bakersfield does not accept samples containing radioactive material above background levels. Samples containing radioactive material must be disclosed prior to receipt. Any samples suspected of containing radioactive material above background levels will not be accepted and will be returned to client.

REV 12/2021



PACE ANALYTICAL

COOLER RECEIPT FORM

Page 1 Of 2

Submission #: 23-03085

SHIPPING INFORMATION

Fed Ex ☐ UPS ☐ GSO / GLS ☐ Hand Delivery ☐

Pace Lab Field Service ☑ Other ☐ (Specify)______

SHIPPING CONTAINER

Ice Chest ☑ None ☐ Box ☐

Other ☐ (Specify)______

FREE LIQUID

YES ☑ NO ☐

[✓ W] / S

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☑ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.97 Container: Clear Glass Thermometer ID: 274

Temperature: (A) 0.3 °C / (C) 0.1 °C

Date/Time 2-8-23 1830

Analyst Init SJL

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664B										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608.3/8081A										
QT EPA 515.1/8151A										
QT EPA 525.2										
QT EPA 525.2 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548.1										
QT EPA 549.2										
QT EPA 8015M										
QT EPA 8270C										
8oz / 16oz / 32oz AMBER										
8oz / [✓ 16oz] / 32oz JAR	E	A	E	A	E	A	2/10/23 [illegible] ~~A~~ E	A	E	A
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT	A-D		A-D		A-D		A-D		A-D	
SUMMA CANISTER										

Comments:______

Sample Numbering Completed By: [illegible] Date/Time: 2/10/23 1612

A = Actual / C = Corrected

Rev 23 06/20/22

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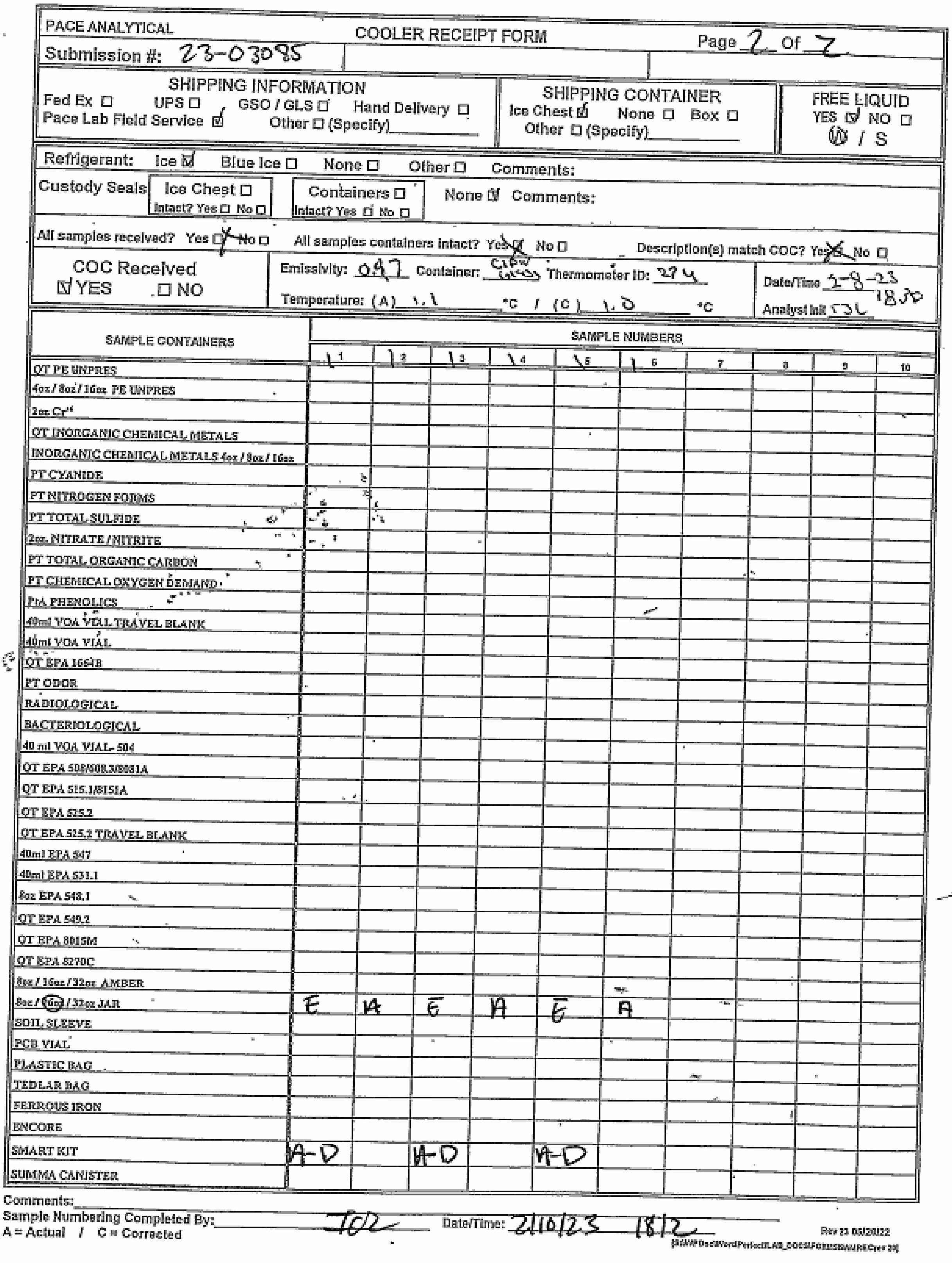
Chain of Custody and Cooler Receipt Form for 2303085 Page 4 of 4



PACE ANALYTICAL

COOLER RECEIPT FORM

Submission #: 23-03085

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SHIPPING INFORMATION
Fed Ex ☐ UPS ☐ GSO / GLS ☐ Hand Delivery ☐
Pace Lab Field Service ☑ Other ☐ (Specify)

SHIPPING CONTAINER
Ice Chest ☑ None ☐ Box ☐
Other ☐ (Specify)

FREE LIQUID
YES ☑ NO ☐
[✓ W] / S

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☑ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.97 Container: Clear Glass Thermometer ID: 274

Temperature: (A) 1.1 °C / (C) 1.0 °C

Date/Time 2-8-23 1830

Analyst Init SJL

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	\1	\2	\3	\4	\5	\6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr⁺⁶										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664B										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608.3/8081A										
QT EPA 515.1/8151A										
QT EPA 525.2										
QT EPA 525.2 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548.1										
QT EPA 549.2										
QT EPA 8015M										
QT EPA 8270C										
8oz / 16oz / 32oz AMBER										
8oz / [✓ 16oz] / 32oz JAR	E	A	E	A	E	A				
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT	A-D		A-D		A-D					
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: JCR Date/Time: 2/10/23 1812

A = Actual / C = Corrected

Rev 23 05/20/22

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Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2303085-01	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 08:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA1-0.5	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-02	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 09:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA1-3.0	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-03	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 09:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA2-0.5	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-04	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 09:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA2-3.0	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-05	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 10:23
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA3-0.5	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-06	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 10:46
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA3-3.0	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-07	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 11:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA4-0.5	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil

Laboratory / Client Sample Cross Reference

Laboratory	**Client Sample Information**			
2303085-08	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 12:12
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA4-3.0	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-09	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 13:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA5-0.5	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-10	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 13:53
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA5-3.0	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-11	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 14:12
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA8-0.5	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-12	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 14:35
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA8-3.0	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-13	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 14:50
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA7-0.5	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-14	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 15:10
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA7-3.0	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil

Laboratory / Client Sample Cross Reference

Laboratory	**Client Sample Information**			
2303085-15	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 15:20
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA6-0.5	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil
2303085-16	**COC Number:**	---	**Receive Date:**	02/10/2023 18:30
	Project Number:	---	**Sampling Date:**	02/07/2023 15:55
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	HA6-3.0	**Lab Matrix:**	Solids
	Sampled By:	SAWYER CARMAN	**Sample Type:**	Soil

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2303085-01 | **Client Sample Name:** HA1-0.5, 2/7/2023 8:45:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Aldrin	ND	mg/kg	0.00050	0.000018	EPA-8081A	1.4		1
alpha-BHC	ND	mg/kg	0.00050	0.000038	EPA-8081A			1
beta-BHC	ND	mg/kg	0.00050	0.000048	EPA-8081A			1
delta-BHC	ND	mg/kg	0.00050	0.000037	EPA-8081A			1
gamma-BHC (Lindane)	ND	mg/kg	0.00050	0.000018	EPA-8081A	4.0		1
Chlordane (Technical)	ND	mg/kg	0.050	0.0010	EPA-8081A	2.5		1
4,4'-DDD	**0.0014**	**mg/kg**	**0.00050**	**0.000064**	**EPA-8081A**	1.0		1
4,4'-DDE	**0.011**	**mg/kg**	**0.00050**	**0.000095**	**EPA-8081A**	1.0		1
4,4'-DDT	**0.0027**	**mg/kg**	**0.00050**	**0.000040**	**EPA-8081A**	1.0		1
Dieldrin	ND	mg/kg	0.00050	0.000036	EPA-8081A	8.0		1
Endosulfan I	ND	mg/kg	0.00050	0.000020	EPA-8081A			1
Endosulfan II	ND	mg/kg	0.00050	0.000034	EPA-8081A			1
Endosulfan sulfate	ND	mg/kg	0.00050	0.000026	EPA-8081A			1
Endrin	ND	mg/kg	0.00050	0.000065	EPA-8081A	0.2		1
Endrin aldehyde	ND	mg/kg	0.00050	0.000018	EPA-8081A			1
Heptachlor	ND	mg/kg	0.00050	0.000086	EPA-8081A	4.7		1
Heptachlor epoxide	ND	mg/kg	0.00050	0.000017	EPA-8081A			1
Methoxychlor	ND	mg/kg	0.00050	0.000094	EPA-8081A	100		1
Toxaphene	**0.045**	**mg/kg**	**0.050**	**0.0014**	**EPA-8081A**	5	**J**	1
TCMX (Surrogate)	54.4	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	39.8	%	40 - 130 (LCL - UCL)		EPA-8081A		S09	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	02/17/23 20:00	02/20/23 16:59	HKS	GC-17	1.017	B160370	EPA 3550B

DCN = Data Continuation Number

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-01 | **Client Sample Name:** HA1-0.5, 2/7/2023 8:45:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Benzene	ND	mg/kg	0.0067	0.00090	EPA-8260B			1
Bromobenzene	ND	mg/kg	0.0067	0.0012	EPA-8260B			1
Bromochloromethane	ND	mg/kg	0.0067	0.0011	EPA-8260B			1
Bromodichloromethane	ND	mg/kg	0.0067	0.0010	EPA-8260B			1
Bromoform	ND	mg/kg	0.0067	0.00094	EPA-8260B			1
Bromomethane	ND	mg/kg	0.0067	0.0023	EPA-8260B			1
n-Butylbenzene	ND	mg/kg	0.0067	0.0010	EPA-8260B			1
sec-Butylbenzene	ND	mg/kg	0.0067	0.00095	EPA-8260B			1
tert-Butylbenzene	ND	mg/kg	0.0067	0.0011	EPA-8260B			1
Carbon tetrachloride	ND	mg/kg	0.0067	0.0010	EPA-8260B			1
Chlorobenzene	ND	mg/kg	0.0067	0.0010	EPA-8260B			1
Chloroethane	ND	mg/kg	0.0067	0.0015	EPA-8260B			1
Chloroform	ND	mg/kg	0.0067	0.0012	EPA-8260B			1
Chloromethane	ND	mg/kg	0.0067	0.0015	EPA-8260B			1
2-Chlorotoluene	ND	mg/kg	0.0067	0.0012	EPA-8260B			1
4-Chlorotoluene	ND	mg/kg	0.0067	0.00094	EPA-8260B			1
Dibromochloromethane	ND	mg/kg	0.0067	0.0011	EPA-8260B			1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0067	0.0013	EPA-8260B			1
1,2-Dibromoethane	ND	mg/kg	0.0067	0.0011	EPA-8260B			1
Dibromomethane	ND	mg/kg	0.0067	0.0019	EPA-8260B			1
1,2-Dichlorobenzene	ND	mg/kg	0.0067	0.0011	EPA-8260B			1
1,3-Dichlorobenzene	ND	mg/kg	0.0067	0.00098	EPA-8260B			1
1,4-Dichlorobenzene	ND	mg/kg	0.0067	0.00098	EPA-8260B			1
Dichlorodifluoromethane	ND	mg/kg	0.0067	0.0011	EPA-8260B			1
1,1-Dichloroethane	ND	mg/kg	0.0067	0.00086	EPA-8260B			1
1,2-Dichloroethane	ND	mg/kg	0.0067	0.00098	EPA-8260B			1
1,1-Dichloroethene	ND	mg/kg	0.0067	0.0015	EPA-8260B			1
cis-1,2-Dichloroethene	ND	mg/kg	0.0067	0.00072	EPA-8260B			1
trans-1,2-Dichloroethene	ND	mg/kg	0.0067	0.0050	EPA-8260B			1
1,2-Dichloropropane	ND	mg/kg	0.0067	0.0011	EPA-8260B			1
1,3-Dichloropropane	ND	mg/kg	0.0067	0.00090	EPA-8260B			1
2,2-Dichloropropane	ND	mg/kg	0.0067	0.00090	EPA-8260B			1
1,1-Dichloropropene	ND	mg/kg	0.0067	0.00090	EPA-8260B			1

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-01 **Client Sample Name:** HA1-0.5, 2/7/2023 8:45:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0067	0.00078	EPA-8260B			1
trans-1,3-Dichloropropene	ND	mg/kg	0.0067	0.00088	EPA-8260B			1
Ethylbenzene	ND	mg/kg	0.0067	0.00092	EPA-8260B			1
Hexachlorobutadiene	ND	mg/kg	0.0067	0.00090	EPA-8260B			1
Isopropylbenzene	ND	mg/kg	0.0067	0.0011	EPA-8260B			1
p-Isopropyltoluene	ND	mg/kg	0.0067	0.00079	EPA-8260B			1
Methylene chloride	ND	mg/kg	0.013	0.0015	EPA-8260B			1
Methyl t-butyl ether	ND	mg/kg	0.0067	0.00075	EPA-8260B			1
Naphthalene	ND	mg/kg	0.0067	0.0013	EPA-8260B			1
n-Propylbenzene	ND	mg/kg	0.0067	0.00095	EPA-8260B			1
Styrene	ND	mg/kg	0.0067	0.00083	EPA-8260B			1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0067	0.0013	EPA-8260B			1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0067	0.0011	EPA-8260B			1
Tetrachloroethene	ND	mg/kg	0.0067	0.0013	EPA-8260B			1
Toluene	**0.0016**	**mg/kg**	**0.0067**	**0.00092**	**EPA-8260B**		**J**	1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0067	0.0020	EPA-8260B			1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0067	0.0019	EPA-8260B			1
1,1,1-Trichloroethane	ND	mg/kg	0.0067	0.00090	EPA-8260B			1
1,1,2-Trichloroethane	ND	mg/kg	0.0067	0.0013	EPA-8260B			1
Trichloroethene	ND	mg/kg	0.0067	0.00099	EPA-8260B	2040		1
Trichlorofluoromethane	ND	mg/kg	0.0067	0.0020	EPA-8260B			1
1,2,3-Trichloropropane	ND	mg/kg	0.0067	0.0025	EPA-8260B			1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0067	0.0013	EPA-8260B			1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0067	0.0011	EPA-8260B			1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0067	0.00088	EPA-8260B			1
Vinyl chloride	ND	mg/kg	0.0067	0.00079	EPA-8260B			1
Total Xylenes	ND	mg/kg	0.013	0.0034	EPA-8260B			1
p- & m-Xylenes	ND	mg/kg	0.0067	0.0020	EPA-8260B			1
o-Xylene	ND	mg/kg	0.0067	0.0012	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	110	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	103	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-01 **Client Sample Name:** HA1-0.5, 2/7/2023 8:45:00AM, SAWYER CARMAN

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	02/13/23 09:00	02/14/23 00:08	BYM	MS-V18	1.340	B159671	EPA 5035 Soil MS

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 2303085-01 | **Client Sample Name:** HA1-0.5, 2/7/2023 8:45:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Acenaphthene	ND	mg/kg	0.0030	0.0013	EPA-8270C-SIM	ND		1
Acenaphthylene	ND	mg/kg	0.0030	0.00092	EPA-8270C-SIM	ND		1
Anthracene	ND	mg/kg	0.0030	0.00081	EPA-8270C-SIM	ND		1
Benzo[a]anthracene	ND	mg/kg	0.0030	0.00096	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene	ND	mg/kg	0.0030	0.00079	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene	ND	mg/kg	0.0030	0.0011	EPA-8270C-SIM	ND		1
Benzo[a]pyrene	ND	mg/kg	0.0030	0.00078	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene	ND	mg/kg	0.0030	0.00072	EPA-8270C-SIM	ND		1
Chrysene	ND	mg/kg	0.0030	0.0011	EPA-8270C-SIM	ND		1
Dibenzo[a,h]anthracene	ND	mg/kg	0.0030	0.00048	EPA-8270C-SIM	ND		1
Fluoranthene	ND	mg/kg	0.0030	0.00075	EPA-8270C-SIM	ND		1
Fluorene	ND	mg/kg	0.0030	0.00097	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.0030	0.00047	EPA-8270C-SIM	ND		1
Naphthalene	ND	mg/kg	0.0030	0.00090	EPA-8270C-SIM	ND		1
Phenanthrene	ND	mg/kg	0.0030	0.00086	EPA-8270C-SIM	ND		1
Pyrene	ND	mg/kg	0.0030	0.0012	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surrogate)	70.9	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrogate)	66.6	%	40 - 130 (LCL - UCL)		EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrogate)	39.0	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8270C-SIM	02/13/23 19:00	02/21/23 13:44	OLH	MS-B7	1.003	B159873	EPA 3550B

DCN = Data Continuation Number

Total Petroleum Hydrocarbons

BCL Sample ID: 2303085-01 | **Client Sample Name:** HA1-0.5, 2/7/2023 8:45:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	2.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	7.0	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	94.8	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/17/23 21:00	02/20/23 16:08	BUP	GC-2	1.007	B160385	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Concentrations (TTLC)

BCL Sample ID: 2303085-01 | **Client Sample Name:** HA1-0.5, 2/7/2023 8:45:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	500		1
Arsenic	**3.2**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	500		1
Barium	**72**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	10000		1
Beryllium	**0.25**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	75	**J**	1
Cadmium	**0.50**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	100		1
Chromium	**11**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	2500		1
Cobalt	**4.5**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	8000		1
Copper	**24**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	2500		1
Lead	**5.7**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	1000		1
Mercury	**0.029**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	20	**J**	2
Molybdenum	**0.26**	**mg/kg**	**2.5**	**0.050**	**EPA-6010B**	3500	**J**	1
Nickel	**12**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	2000		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	100		1
Silver	**0.14**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	500	**J**	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	700		1
Vanadium	**21**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	2400		1
Zinc	**57**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	5000		3

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	02/13/23 07:30	02/14/23 20:15	DVS	PE-OP3	1	B159719	EPA 3050B
2	EPA-7471A	02/15/23 08:40	02/15/23 14:02	TMT	CETAC3	0.992	B159900	EPA 7471A
3	EPA-6010B	02/13/23 07:30	02/16/23 17:24	DVS	PE-OP3	1	B159719	EPA 3050B

DCN = Data Continuation Number

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2303085-03 | **Client Sample Name:** HA2-0.5, 2/7/2023 9:30:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Aldrin	ND	mg/kg	0.010	0.00036	EPA-8081A	1.4	A10	1
alpha-BHC	ND	mg/kg	0.010	0.00076	EPA-8081A		A10	1
beta-BHC	ND	mg/kg	0.010	0.00096	EPA-8081A		A10	1
delta-BHC	ND	mg/kg	0.010	0.00074	EPA-8081A		A10	1
gamma-BHC (Lindane)	ND	mg/kg	0.010	0.00036	EPA-8081A	4.0	A10	1
Chlordane (Technical)	ND	mg/kg	1.0	0.020	EPA-8081A	2.5	A10	1
4,4'-DDD	**0.0020**	**mg/kg**	**0.010**	**0.0013**	**EPA-8081A**	1.0	**J,A10**	1
4,4'-DDE	**0.0053**	**mg/kg**	**0.010**	**0.0019**	**EPA-8081A**	1.0	**J,A10**	1
4,4'-DDT	**0.0085**	**mg/kg**	**0.010**	**0.00080**	**EPA-8081A**	1.0	**J,A10**	1
Dieldrin	ND	mg/kg	0.010	0.00072	EPA-8081A	8.0	A10	1
Endosulfan I	ND	mg/kg	0.010	0.00040	EPA-8081A		A10	1
Endosulfan II	ND	mg/kg	0.010	0.00068	EPA-8081A		A10	1
Endosulfan sulfate	ND	mg/kg	0.010	0.00052	EPA-8081A		A10	1
Endrin	ND	mg/kg	0.010	0.0013	EPA-8081A	0.2	A10	1
Endrin aldehyde	ND	mg/kg	0.010	0.00036	EPA-8081A		A10	1
Heptachlor	ND	mg/kg	0.010	0.0017	EPA-8081A	4.7	A10	1
Heptachlor epoxide	ND	mg/kg	0.010	0.00034	EPA-8081A		A10	1
Methoxychlor	ND	mg/kg	0.010	0.0019	EPA-8081A	100	A10	1
Toxaphene	ND	mg/kg	1.0	0.028	EPA-8081A	5	A10	1
TCMX (Surrogate)	52.9	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	55.1	%	40 - 130 (LCL - UCL)		EPA-8081A			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	02/17/23 20:00	02/20/23 17:50	HKS	GC-17	20.134	B160370	EPA 3550B

DCN = Data Continuation Number

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-03 **Client Sample Name:** HA2-0.5, 2/7/2023 9:30:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Benzene	**0.0042**	**mg/kg**	**0.0050**	**0.00067**	**EPA-8260B**		**J,S08,Z1**	1
Bromobenzene	ND	mg/kg	0.0050	0.00087	EPA-8260B		S08,Z1	1
Bromochloromethane	ND	mg/kg	0.0050	0.00081	EPA-8260B		S08,Z1	1
Bromodichloromethane	ND	mg/kg	0.0050	0.00078	EPA-8260B		S08,Z1	1
Bromoform	ND	mg/kg	0.0050	0.00070	EPA-8260B		S08,Z1	1
Bromomethane	ND	mg/kg	0.0050	0.0017	EPA-8260B		S08,Z1	1
n-Butylbenzene	ND	mg/kg	0.0050	0.00076	EPA-8260B		S08,Z1	1
sec-Butylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B		S08,Z1	1
tert-Butylbenzene	ND	mg/kg	0.0050	0.00085	EPA-8260B		S08,Z1	1
Carbon tetrachloride	ND	mg/kg	0.0050	0.00078	EPA-8260B		S08,Z1	1
Chlorobenzene	ND	mg/kg	0.0050	0.00077	EPA-8260B		S08,Z1	1
Chloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B		S08,Z1	1
Chloroform	ND	mg/kg	0.0050	0.00090	EPA-8260B		S08,Z1	1
Chloromethane	ND	mg/kg	0.0050	0.0011	EPA-8260B		S08,Z1	1
2-Chlorotoluene	ND	mg/kg	0.0050	0.00087	EPA-8260B		S08,Z1	1
4-Chlorotoluene	ND	mg/kg	0.0050	0.00070	EPA-8260B		S08,Z1	1
Dibromochloromethane	ND	mg/kg	0.0050	0.00080	EPA-8260B		S08,Z1	1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0050	0.00096	EPA-8260B		S08,Z1	1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.00082	EPA-8260B		S08,Z1	1
Dibromomethane	ND	mg/kg	0.0050	0.0014	EPA-8260B		S08,Z1	1
1,2-Dichlorobenzene	ND	mg/kg	0.0050	0.00079	EPA-8260B		S08,Z1	1
1,3-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B		S08,Z1	1
1,4-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B		S08,Z1	1
Dichlorodifluoromethane	ND	mg/kg	0.0050	0.00079	EPA-8260B		S08,Z1	1
1,1-Dichloroethane	ND	mg/kg	0.0050	0.00064	EPA-8260B		S08,Z1	1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00073	EPA-8260B		S08,Z1	1
1,1-Dichloroethene	ND	mg/kg	0.0050	0.0011	EPA-8260B		S08,Z1	1
cis-1,2-Dichloroethene	ND	mg/kg	0.0050	0.00054	EPA-8260B		S08,Z1	1
trans-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0037	EPA-8260B		S08,Z1	1
1,2-Dichloropropane	ND	mg/kg	0.0050	0.00080	EPA-8260B		S08,Z1	1
1,3-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B		S08,Z1	1
2,2-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B		S08,Z1	1
1,1-Dichloropropene	ND	mg/kg	0.0050	0.00067	EPA-8260B		S08,Z1	1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-03 **Client Sample Name:** HA2-0.5, 2/7/2023 9:30:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00058	EPA-8260B		S08,Z1	1
trans-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00066	EPA-8260B		S08,Z1	1
Ethylbenzene	ND	mg/kg	0.0050	0.00069	EPA-8260B		S08,Z1	1
Hexachlorobutadiene	ND	mg/kg	0.0050	0.00067	EPA-8260B		S08,Z1	1
Isopropylbenzene	ND	mg/kg	0.0050	0.00080	EPA-8260B		S08,Z1	1
p-Isopropyltoluene	ND	mg/kg	0.0050	0.00059	EPA-8260B		S08,Z1	1
Methylene chloride	ND	mg/kg	0.010	0.0011	EPA-8260B		S08,Z1	1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00056	EPA-8260B		S08,Z1	1
Naphthalene	ND	mg/kg	0.0050	0.00099	EPA-8260B		S08,Z1	1
n-Propylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B		S08,Z1	1
Styrene	ND	mg/kg	0.0050	0.00062	EPA-8260B		S08,Z1	1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00095	EPA-8260B		S08,Z1	1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00084	EPA-8260B		S08,Z1	1
Tetrachloroethene	ND	mg/kg	0.0050	0.00097	EPA-8260B		S08,Z1	1
Toluene	**0.0041**	**mg/kg**	**0.0050**	**0.00069**	**EPA-8260B**		**J,S08,Z1**	1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B		S08,Z1	1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0050	0.0014	EPA-8260B		S08,Z1	1
1,1,1-Trichloroethane	ND	mg/kg	0.0050	0.00067	EPA-8260B		S08,Z1	1
1,1,2-Trichloroethane	ND	mg/kg	0.0050	0.00094	EPA-8260B		S08,Z1	1
Trichloroethene	ND	mg/kg	0.0050	0.00074	EPA-8260B	2040	S08,Z1	1
Trichlorofluoromethane	ND	mg/kg	0.0050	0.0015	EPA-8260B		S08,Z1	1
1,2,3-Trichloropropane	ND	mg/kg	0.0050	0.0019	EPA-8260B		S08,Z1	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0050	0.0010	EPA-8260B		S08,Z1	1
1,2,4-Trimethylbenzene	**0.0015**	**mg/kg**	**0.0050**	**0.00080**	**EPA-8260B**		**J,S08,Z1**	1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0050	0.00066	EPA-8260B		S08,Z1	1
Vinyl chloride	ND	mg/kg	0.0050	0.00059	EPA-8260B		S08,Z1	1
Total Xylenes	ND	mg/kg	0.010	0.0025	EPA-8260B		S08,Z1	1
p- & m-Xylenes	ND	mg/kg	0.0050	0.0015	EPA-8260B		S08,Z1	1
o-Xylene	ND	mg/kg	0.0050	0.00093	EPA-8260B		S08,Z1	1
1,2-Dichloroethane-d4 (Surrogate)	105	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	99.6	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-03 **Client Sample Name:** HA2-0.5, 2/7/2023 9:30:00AM, SAWYER CARMAN

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	02/13/23 09:00	02/14/23 10:12	BYM	MS-V18	1.099	B159671	EPA 5035 Soil MS

DCN = Data Continuation Number

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 2303085-03 **Client Sample Name:** HA2-0.5, 2/7/2023 9:30:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Acenaphthene	ND	mg/kg	0.15	0.065	EPA-8270C-SIM	ND	A10	1
Acenaphthylene	ND	mg/kg	0.15	0.046	EPA-8270C-SIM	ND	A10	1
Anthracene	ND	mg/kg	0.15	0.040	EPA-8270C-SIM	ND	A10	1
Benzo[a]anthracene	ND	mg/kg	0.15	0.048	EPA-8270C-SIM	ND	A10	1
Benzo[b]fluoranthene	ND	mg/kg	0.15	0.040	EPA-8270C-SIM	ND	A10	1
Benzo[k]fluoranthene	ND	mg/kg	0.15	0.055	EPA-8270C-SIM	ND	A10	1
Benzo[a]pyrene	ND	mg/kg	0.15	0.039	EPA-8270C-SIM	ND	A10	1
Benzo[g,h,i]perylene	ND	mg/kg	0.15	0.036	EPA-8270C-SIM	ND	A10	1
Chrysene	ND	mg/kg	0.15	0.055	EPA-8270C-SIM	ND	A10	1
Dibenzo[a,h]anthracene	ND	mg/kg	0.15	0.024	EPA-8270C-SIM	ND	A10	1
Fluoranthene	ND	mg/kg	0.15	0.038	EPA-8270C-SIM	ND	A10	1
Fluorene	ND	mg/kg	0.15	0.048	EPA-8270C-SIM	ND	A10	1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.15	0.024	EPA-8270C-SIM	ND	A10	1
Naphthalene	ND	mg/kg	0.15	0.045	EPA-8270C-SIM	ND	A10	1
Phenanthrene	ND	mg/kg	0.15	0.043	EPA-8270C-SIM	ND	A10	1
Pyrene	ND	mg/kg	0.15	0.060	EPA-8270C-SIM	ND	A10	1
Nitrobenzene-d5 (Surrogate)	67.1	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrogate)	61.0	%	40 - 130 (LCL - UCL)		EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrogate)	43.2	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8270C-SIM	02/13/23 19:00	02/21/23 20:58	OLH	MS-B7	49.505	B159873	EPA 3550B

DCN = Data Continuation Number

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-03 **Client Sample Name:** HA2-0.5, 2/7/2023 9:30:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	200	50	EPA-8015B/FFP	ND	A10,S05	1
TPH - Diesel (FFP)	**130**	**mg/kg**	**100**	**22**	**EPA-8015B/FFP**	ND	**A10,A52,S05**	1
TPH - Hydraulic Oil / Motor Oil	**1300**	**mg/kg**	**200**	**70**	**EPA-8015B/FFP**	ND	**A10,A57,S05**	1
Tetracosane (Surrogate)	85.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A10,S05	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/24/23 20:00	02/28/23 00:19	BUP	GC-2	10.135	B161016	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Petroleum Hydrocarbons

BCL Sample ID: 2303085-03 | **Client Sample Name:** HA2-0.5, 2/7/2023 9:30:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	400	100	EPA-8015B/FFP	ND	A10	1
TPH - Diesel (FFP)	**190**	**mg/kg**	**200**	**44**	**EPA-8015B/FFP**	ND	**J,A10,A52**	1
TPH - Motor Oil	**1600**	**mg/kg**	**400**	**140**	**EPA-8015B/FFP**	ND	**A10,A57**	1
Tetracosane (Surrogate)	0	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP		A10,A17	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/17/23 21:00	02/20/23 21:06	BUP	GC-2	19.672	B160385	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Concentrations (TTLC)

BCL Sample ID: 2303085-03 **Client Sample Name:** HA2-0.5, 2/7/2023 9:30:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Antimony	0.74	mg/kg	5.0	0.33	EPA-6010B	500	J	1
Arsenic	3.8	mg/kg	1.0	0.40	EPA-6010B	500		1
Barium	91	mg/kg	0.50	0.18	EPA-6010B	10000		1
Beryllium	0.24	mg/kg	0.50	0.047	EPA-6010B	75	J	1
Cadmium	0.81	mg/kg	0.50	0.052	EPA-6010B	100		1
Chromium	17	mg/kg	0.50	0.050	EPA-6010B	2500		1
Cobalt	4.0	mg/kg	2.5	0.098	EPA-6010B	8000		1
Copper	9.9	mg/kg	1.0	0.050	EPA-6010B	2500		1
Lead	6.6	mg/kg	2.5	0.41	EPA-6010B	1000		1
Mercury	0.033	mg/kg	0.16	0.016	EPA-7471A	20	J	2
Molybdenum	2.1	mg/kg	2.5	0.050	EPA-6010B	3500	J	1
Nickel	16	mg/kg	0.50	0.15	EPA-6010B	2000		1
Selenium	1.2	mg/kg	1.0	0.98	EPA-6010B	100		1
Silver	0.13	mg/kg	0.50	0.067	EPA-6010B	500	J	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	700		1
Vanadium	27	mg/kg	0.50	0.11	EPA-6010B	2400		1
Zinc	34	mg/kg	2.5	0.087	EPA-6010B	5000		3

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	02/13/23 07:30	02/14/23 20:16	DVS	PE-OP3	1	B159719	EPA 3050B
2	EPA-7471A	02/15/23 08:40	02/15/23 14:04	TMT	CETAC3	1.008	B159900	EPA 7471A
3	EPA-6010B	02/13/23 07:30	02/16/23 17:26	DVS	PE-OP3	1	B159719	EPA 3050B

DCN = Data Continuation Number

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-04 **Client Sample Name:** HA2-3.0, 2/7/2023 9:55:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND	S05	1
TPH - Diesel (FFP)	**13**	**mg/kg**	**10**	**2.2**	**EPA-8015B/FFP**	ND	**A52,S05**	1
TPH - Hydraulic Oil / Motor Oil	**31**	**mg/kg**	**20**	**7.0**	**EPA-8015B/FFP**	ND	**A57,S05**	1
Tetracosane (Surrogate)	57.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		S05	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	03/03/23 19:35	03/07/23 14:54	BUP	GC-2	1.003	B161414	EPA 3550B

DCN = Data Continuation Number

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2303085-05 | **Client Sample Name:** HA3-0.5, 2/7/2023 10:23:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Aldrin	ND	mg/kg	0.23	0.0083	EPA-8081A	1.4	A10	1
alpha-BHC	ND	mg/kg	0.23	0.018	EPA-8081A		A10	1
beta-BHC	ND	mg/kg	0.23	0.022	EPA-8081A		A10	1
delta-BHC	ND	mg/kg	0.23	0.017	EPA-8081A		A10	1
gamma-BHC (Lindane)	ND	mg/kg	0.23	0.0083	EPA-8081A	4.0	A10	1
Chlordane (Technical)	ND	mg/kg	23	0.46	EPA-8081A	2.5	A10	1
4,4'-DDD	ND	mg/kg	0.23	0.030	EPA-8081A	1.0	A10	1
4,4'-DDE	ND	mg/kg	0.23	0.044	EPA-8081A	1.0	A10	1
4,4'-DDT	ND	mg/kg	0.23	0.018	EPA-8081A	1.0	A10	1
Dieldrin	ND	mg/kg	0.23	0.017	EPA-8081A	8.0	A10	1
Endosulfan I	ND	mg/kg	0.23	0.0092	EPA-8081A		A10	1
Endosulfan II	ND	mg/kg	0.23	0.016	EPA-8081A		A10	1
Endosulfan sulfate	ND	mg/kg	0.23	0.012	EPA-8081A		A10	1
Endrin	ND	mg/kg	0.23	0.030	EPA-8081A	0.2	A10	1
Endrin aldehyde	ND	mg/kg	0.23	0.0083	EPA-8081A		A10	1
Heptachlor	ND	mg/kg	0.23	0.040	EPA-8081A	4.7	A10	1
Heptachlor epoxide	ND	mg/kg	0.23	0.0078	EPA-8081A		A10	1
Methoxychlor	ND	mg/kg	0.23	0.043	EPA-8081A	100	A10	1
Toxaphene	ND	mg/kg	23	0.65	EPA-8081A	5	A10	1
TCMX (Surrogate)	103	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	83.3	%	40 - 130 (LCL - UCL)		EPA-8081A			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	02/17/23 20:00	02/20/23 18:07	HKS	GC-17	461.54	B160370	EPA 3550B

DCN = Data Continuation Number

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-05 | **Client Sample Name:** HA3-0.5, 2/7/2023 10:23:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Benzene	**0.0025**	**mg/kg**	**0.0062**	**0.00083**	**EPA-8260B**		**J**	1
Bromobenzene	ND	mg/kg	0.0062	0.0011	EPA-8260B			1
Bromochloromethane	ND	mg/kg	0.0062	0.0010	EPA-8260B			1
Bromodichloromethane	ND	mg/kg	0.0062	0.00096	EPA-8260B			1
Bromoform	ND	mg/kg	0.0062	0.00086	EPA-8260B			1
Bromomethane	ND	mg/kg	0.0062	0.0021	EPA-8260B			1
n-Butylbenzene	ND	mg/kg	0.0062	0.00094	EPA-8260B			1
sec-Butylbenzene	ND	mg/kg	0.0062	0.00087	EPA-8260B			1
tert-Butylbenzene	ND	mg/kg	0.0062	0.0010	EPA-8260B			1
Carbon tetrachloride	ND	mg/kg	0.0062	0.00096	EPA-8260B			1
Chlorobenzene	ND	mg/kg	0.0062	0.00095	EPA-8260B			1
Chloroethane	ND	mg/kg	0.0062	0.0014	EPA-8260B			1
Chloroform	ND	mg/kg	0.0062	0.0011	EPA-8260B			1
Chloromethane	ND	mg/kg	0.0062	0.0014	EPA-8260B			1
2-Chlorotoluene	ND	mg/kg	0.0062	0.0011	EPA-8260B			1
4-Chlorotoluene	ND	mg/kg	0.0062	0.00086	EPA-8260B			1
Dibromochloromethane	ND	mg/kg	0.0062	0.00099	EPA-8260B			1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0062	0.0012	EPA-8260B			1
1,2-Dibromoethane	ND	mg/kg	0.0062	0.0010	EPA-8260B			1
Dibromomethane	ND	mg/kg	0.0062	0.0017	EPA-8260B			1
1,2-Dichlorobenzene	ND	mg/kg	0.0062	0.00097	EPA-8260B			1
1,3-Dichlorobenzene	ND	mg/kg	0.0062	0.00090	EPA-8260B			1
1,4-Dichlorobenzene	ND	mg/kg	0.0062	0.00090	EPA-8260B			1
Dichlorodifluoromethane	ND	mg/kg	0.0062	0.00097	EPA-8260B			1
1,1-Dichloroethane	ND	mg/kg	0.0062	0.00079	EPA-8260B			1
1,2-Dichloroethane	ND	mg/kg	0.0062	0.00090	EPA-8260B			1
1,1-Dichloroethene	ND	mg/kg	0.0062	0.0014	EPA-8260B			1
cis-1,2-Dichloroethene	ND	mg/kg	0.0062	0.00067	EPA-8260B			1
trans-1,2-Dichloroethene	ND	mg/kg	0.0062	0.0046	EPA-8260B			1
1,2-Dichloropropane	ND	mg/kg	0.0062	0.00099	EPA-8260B			1
1,3-Dichloropropane	ND	mg/kg	0.0062	0.00083	EPA-8260B			1
2,2-Dichloropropane	ND	mg/kg	0.0062	0.00083	EPA-8260B			1
1,1-Dichloropropene	ND	mg/kg	0.0062	0.00083	EPA-8260B			1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-05 | **Client Sample Name:** HA3-0.5, 2/7/2023 10:23:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0062	0.00071	EPA-8260B			1
trans-1,3-Dichloropropene	ND	mg/kg	0.0062	0.00081	EPA-8260B			1
Ethylbenzene	ND	mg/kg	0.0062	0.00085	EPA-8260B			1
Hexachlorobutadiene	ND	mg/kg	0.0062	0.00083	EPA-8260B			1
Isopropylbenzene	ND	mg/kg	0.0062	0.00099	EPA-8260B			1
p-Isopropyltoluene	ND	mg/kg	0.0062	0.00073	EPA-8260B			1
Methylene chloride	ND	mg/kg	0.012	0.0014	EPA-8260B			1
Methyl t-butyl ether	ND	mg/kg	0.0062	0.00069	EPA-8260B			1
Naphthalene	ND	mg/kg	0.0062	0.0012	EPA-8260B			1
n-Propylbenzene	ND	mg/kg	0.0062	0.00087	EPA-8260B			1
Styrene	ND	mg/kg	0.0062	0.00076	EPA-8260B			1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0062	0.0012	EPA-8260B			1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0062	0.0010	EPA-8260B			1
Tetrachloroethene	ND	mg/kg	0.0062	0.0012	EPA-8260B			1
Toluene	**0.0023**	**mg/kg**	**0.0062**	**0.00085**	**EPA-8260B**		**J**	1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0062	0.0018	EPA-8260B			1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0062	0.0017	EPA-8260B			1
1,1,1-Trichloroethane	ND	mg/kg	0.0062	0.00083	EPA-8260B			1
1,1,2-Trichloroethane	ND	mg/kg	0.0062	0.0012	EPA-8260B			1
Trichloroethene	ND	mg/kg	0.0062	0.00091	EPA-8260B	2040		1
Trichlorofluoromethane	ND	mg/kg	0.0062	0.0018	EPA-8260B			1
1,2,3-Trichloropropane	ND	mg/kg	0.0062	0.0023	EPA-8260B			1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0062	0.0012	EPA-8260B			1
1,2,4-Trimethylbenzene	**0.0013**	**mg/kg**	**0.0062**	**0.00099**	**EPA-8260B**		**J**	1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0062	0.00081	EPA-8260B			1
Vinyl chloride	ND	mg/kg	0.0062	0.00073	EPA-8260B			1
Total Xylenes	ND	mg/kg	0.012	0.0031	EPA-8260B			1
p- & m-Xylenes	ND	mg/kg	0.0062	0.0018	EPA-8260B			1
o-Xylene	ND	mg/kg	0.0062	0.0011	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	111	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	100	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	97.5	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-05 | **Client Sample Name:** HA3-0.5, 2/7/2023 10:23:00AM, SAWYER CARMAN

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	02/13/23 09:00	02/14/23 10:34	BYM	MS-V18	1.232	B159671	EPA 5035 Soil MS

DCN = Data Continuation Number

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 2303085-05 **Client Sample Name:** HA3-0.5, 2/7/2023 10:23:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Acenaphthene	ND	mg/kg	0.69	0.30	EPA-8270C-SIM	ND	A10	1
Acenaphthylene	ND	mg/kg	0.69	0.21	EPA-8270C-SIM	ND	A10	1
Anthracene	ND	mg/kg	0.69	0.19	EPA-8270C-SIM	ND	A10	1
Benzo[a]anthracene	ND	mg/kg	0.69	0.22	EPA-8270C-SIM	ND	A10	1
Benzo[b]fluoranthene	ND	mg/kg	0.69	0.18	EPA-8270C-SIM	ND	A10	1
Benzo[k]fluoranthene	ND	mg/kg	0.69	0.25	EPA-8270C-SIM	ND	A10	1
Benzo[a]pyrene	ND	mg/kg	0.69	0.18	EPA-8270C-SIM	ND	A10	1
Benzo[g,h,i]perylene	ND	mg/kg	0.69	0.17	EPA-8270C-SIM	ND	A10	1
Chrysene	ND	mg/kg	0.69	0.25	EPA-8270C-SIM	ND	A10	1
Dibenzo[a,h]anthracene	ND	mg/kg	0.69	0.11	EPA-8270C-SIM	ND	A10	1
Fluoranthene	ND	mg/kg	0.69	0.17	EPA-8270C-SIM	ND	A10	1
Fluorene	ND	mg/kg	0.69	0.22	EPA-8270C-SIM	ND	A10	1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.69	0.11	EPA-8270C-SIM	ND	A10	1
Naphthalene	ND	mg/kg	0.69	0.21	EPA-8270C-SIM	ND	A10	1
Phenanthrene	ND	mg/kg	0.69	0.20	EPA-8270C-SIM	ND	A10	1
Pyrene	ND	mg/kg	0.69	0.28	EPA-8270C-SIM	ND	A10	1
Nitrobenzene-d5 (Surrogate)	60.5	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrogate)	61.5	%	40 - 130 (LCL - UCL)		EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrogate)	41.0	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8270C-SIM	02/13/23 19:00	02/21/23 19:06	OLH	MS-B7	230.77	B159873	EPA 3550B

DCN = Data Continuation Number

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-05 **Client Sample Name:** HA3-0.5, 2/7/2023 10:23:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	1600	390	EPA-8015B/FFP	ND	A10,S05	1
TPH - Diesel (FFP)	**780**	**mg/kg**	**790**	**170**	**EPA-8015B/FFP**	ND	**J,A10,A52,S05**	1
TPH - Hydraulic Oil / Motor Oil	**5200**	**mg/kg**	**1600**	**550**	**EPA-8015B/FFP**	ND	**A10,A57,S05**	1
Tetracosane (Surrogate)	57.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A10,S05	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/24/23 20:00	02/27/23 22:23	BUP	GC-2	78.947	B161016	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Petroleum Hydrocarbons

BCL Sample ID: 2303085-05 **Client Sample Name:** HA3-0.5, 2/7/2023 10:23:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	3000	750	EPA-8015B/FFP	ND	A10	1
TPH - Diesel (FFP)	**1100**	**mg/kg**	**1500**	**330**	**EPA-8015B/FFP**	ND	**J,A10,A52**	1
TPH - Motor Oil	**7900**	**mg/kg**	**3000**	**1000**	**EPA-8015B/FFP**	ND	**A10,A57**	1
Tetracosane (Surrogate)	117	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP		A10	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/17/23 21:00	02/21/23 07:20	BUP	GC-2	150	B160385	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Concentrations (TTLC)

BCL Sample ID: 2303085-05 **Client Sample Name:** HA3-0.5, 2/7/2023 10:23:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	500		1
Arsenic	**3.3**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	500		1
Barium	**67**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	10000		1
Beryllium	**0.17**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	75	**J**	1
Cadmium	**0.71**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	100		1
Chromium	**18**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	2500		1
Cobalt	**3.5**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	8000		1
Copper	**8.9**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	2500		1
Lead	**4.5**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	1000		1
Mercury	**0.048**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	20	**J**	2
Molybdenum	**0.57**	**mg/kg**	**2.5**	**0.050**	**EPA-6010B**	3500	**J**	1
Nickel	**21**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	2000		1
Selenium	**1.4**	**mg/kg**	**1.0**	**0.98**	**EPA-6010B**	100		1
Silver	**0.11**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	500	**J**	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	700		1
Vanadium	**32**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	2400		1
Zinc	**28**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	5000		3

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	02/13/23 07:30	02/14/23 20:18	DVS	PE-OP3	0.990	B159719	EPA 3050B
2	EPA-7471A	02/15/23 08:40	02/15/23 14:06	TMT	CETAC3	0.977	B159900	EPA 7471A
3	EPA-6010B	02/13/23 07:30	02/16/23 17:27	DVS	PE-OP3	0.990	B159719	EPA 3050B

DCN = Data Continuation Number

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-06 | **Client Sample Name:** HA3-3.0, 2/7/2023 10:46:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND	S05	1
TPH - Diesel (FFP)	ND	mg/kg	10	2.2	EPA-8015B/FFP	ND	S05	1
TPH - Hydraulic Oil / Motor Oil	**23**	**mg/kg**	**20**	**7.0**	**EPA-8015B/FFP**	ND	**A57,S05**	1
Tetracosane (Surrogate)	55.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		S05	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	03/03/23 19:35	03/07/23 16:03	BUP	GC-2	0.984	B161414	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2303085-07 **Client Sample Name:** HA4-0.5, 2/7/2023 11:10:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Aldrin	ND	mg/kg	0.21	0.0077	EPA-8081A	1.4	A10	1
alpha-BHC	ND	mg/kg	0.21	0.016	EPA-8081A		A10	1
beta-BHC	ND	mg/kg	0.21	0.021	EPA-8081A		A10	1
delta-BHC	ND	mg/kg	0.21	0.016	EPA-8081A		A10	1
gamma-BHC (Lindane)	ND	mg/kg	0.21	0.0077	EPA-8081A	4.0	A10	1
Chlordane (Technical)	ND	mg/kg	21	0.43	EPA-8081A	2.5	A10	1
4,4'-DDD	ND	mg/kg	0.21	0.027	EPA-8081A	1.0	A10	1
4,4'-DDE	ND	mg/kg	0.21	0.041	EPA-8081A	1.0	A10	1
4,4'-DDT	**0.081**	**mg/kg**	**0.21**	**0.017**	**EPA-8081A**	1.0	**J,A10**	1
Dieldrin	ND	mg/kg	0.21	0.015	EPA-8081A	8.0	A10	1
Endosulfan I	ND	mg/kg	0.21	0.0086	EPA-8081A		A10	1
Endosulfan II	ND	mg/kg	0.21	0.015	EPA-8081A		A10	1
Endosulfan sulfate	ND	mg/kg	0.21	0.011	EPA-8081A		A10	1
Endrin	ND	mg/kg	0.21	0.028	EPA-8081A	0.2	A10	1
Endrin aldehyde	ND	mg/kg	0.21	0.0077	EPA-8081A		A10	1
Heptachlor	ND	mg/kg	0.21	0.037	EPA-8081A	4.7	A10	1
Heptachlor epoxide	ND	mg/kg	0.21	0.0073	EPA-8081A		A10	1
Methoxychlor	ND	mg/kg	0.21	0.040	EPA-8081A	100	A10	1
Toxaphene	ND	mg/kg	21	0.60	EPA-8081A	5	A10	1
TCMX (Surrogate)	103	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	89.9	%	40 - 130 (LCL - UCL)		EPA-8081A			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	02/17/23 20:00	02/20/23 18:40	HKS	GC-17	428.57	B160370	EPA 3550B

DCN = Data Continuation Number

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-07 | **Client Sample Name:** HA4-0.5, 2/7/2023 11:10:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Benzene	**0.0061**	**mg/kg**	**0.0061**	**0.00081**	**EPA-8260B**		**S08,Z1**	1
Bromobenzene	ND	mg/kg	0.0061	0.0011	EPA-8260B		S08,Z1	1
Bromochloromethane	ND	mg/kg	0.0061	0.00098	EPA-8260B		S08,Z1	1
Bromodichloromethane	ND	mg/kg	0.0061	0.00094	EPA-8260B		S08,Z1	1
Bromoform	ND	mg/kg	0.0061	0.00085	EPA-8260B		S08,Z1	1
Bromomethane	ND	mg/kg	0.0061	0.0021	EPA-8260B		S08,Z1	1
n-Butylbenzene	ND	mg/kg	0.0061	0.00092	EPA-8260B		S08,Z1	1
sec-Butylbenzene	ND	mg/kg	0.0061	0.00086	EPA-8260B		S08,Z1	1
tert-Butylbenzene	ND	mg/kg	0.0061	0.0010	EPA-8260B		S08,Z1	1
Carbon tetrachloride	ND	mg/kg	0.0061	0.00094	EPA-8260B		S08,Z1	1
Chlorobenzene	ND	mg/kg	0.0061	0.00093	EPA-8260B		S08,Z1	1
Chloroethane	ND	mg/kg	0.0061	0.0013	EPA-8260B		S08,Z1	1
Chloroform	ND	mg/kg	0.0061	0.0011	EPA-8260B		S08,Z1	1
Chloromethane	ND	mg/kg	0.0061	0.0013	EPA-8260B		S08,Z1	1
2-Chlorotoluene	ND	mg/kg	0.0061	0.0011	EPA-8260B		S08,Z1	1
4-Chlorotoluene	ND	mg/kg	0.0061	0.00085	EPA-8260B		S08,Z1	1
Dibromochloromethane	ND	mg/kg	0.0061	0.00097	EPA-8260B		S08,Z1	1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0061	0.0012	EPA-8260B		S08,Z1	1
1,2-Dibromoethane	ND	mg/kg	0.0061	0.00099	EPA-8260B		S08,Z1	1
Dibromomethane	ND	mg/kg	0.0061	0.0017	EPA-8260B		S08,Z1	1
1,2-Dichlorobenzene	ND	mg/kg	0.0061	0.00096	EPA-8260B		S08,Z1	1
1,3-Dichlorobenzene	ND	mg/kg	0.0061	0.00088	EPA-8260B		S08,Z1	1
1,4-Dichlorobenzene	ND	mg/kg	0.0061	0.00088	EPA-8260B		S08,Z1	1
Dichlorodifluoromethane	ND	mg/kg	0.0061	0.00096	EPA-8260B		S08,Z1	1
1,1-Dichloroethane	ND	mg/kg	0.0061	0.00077	EPA-8260B		S08,Z1	1
1,2-Dichloroethane	ND	mg/kg	0.0061	0.00088	EPA-8260B		S08,Z1	1
1,1-Dichloroethene	ND	mg/kg	0.0061	0.0013	EPA-8260B		S08,Z1	1
cis-1,2-Dichloroethene	ND	mg/kg	0.0061	0.00065	EPA-8260B		S08,Z1	1
trans-1,2-Dichloroethene	ND	mg/kg	0.0061	0.0045	EPA-8260B		S08,Z1	1
1,2-Dichloropropane	ND	mg/kg	0.0061	0.00097	EPA-8260B		S08,Z1	1
1,3-Dichloropropane	ND	mg/kg	0.0061	0.00081	EPA-8260B		S08,Z1	1
2,2-Dichloropropane	ND	mg/kg	0.0061	0.00081	EPA-8260B		S08,Z1	1
1,1-Dichloropropene	ND	mg/kg	0.0061	0.00081	EPA-8260B		S08,Z1	1

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-07 **Client Sample Name:** HA4-0.5, 2/7/2023 11:10:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0061	0.00070	EPA-8260B		S08,Z1	1
trans-1,3-Dichloropropene	ND	mg/kg	0.0061	0.00080	EPA-8260B		S08,Z1	1
Ethylbenzene	**0.00099**	**mg/kg**	**0.0061**	**0.00084**	**EPA-8260B**		**J,S08,Z1**	1
Hexachlorobutadiene	ND	mg/kg	0.0061	0.00081	EPA-8260B		S08,Z1	1
Isopropylbenzene	ND	mg/kg	0.0061	0.00097	EPA-8260B		S08,Z1	1
p-Isopropyltoluene	ND	mg/kg	0.0061	0.00071	EPA-8260B		S08,Z1	1
Methylene chloride	ND	mg/kg	0.012	0.0013	EPA-8260B		S08,Z1	1
Methyl t-butyl ether	ND	mg/kg	0.0061	0.00068	EPA-8260B		S08,Z1	1
Naphthalene	ND	mg/kg	0.0061	0.0012	EPA-8260B		S08,Z1	1
n-Propylbenzene	ND	mg/kg	0.0061	0.00086	EPA-8260B		S08,Z1	1
Styrene	ND	mg/kg	0.0061	0.00075	EPA-8260B		S08,Z1	1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0061	0.0012	EPA-8260B		S08,Z1	1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0061	0.0010	EPA-8260B		S08,Z1	1
Tetrachloroethene	ND	mg/kg	0.0061	0.0012	EPA-8260B		S08,Z1	1
Toluene	**0.0043**	**mg/kg**	**0.0061**	**0.00084**	**EPA-8260B**		**J,S08,Z1**	1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0061	0.0018	EPA-8260B		S08,Z1	1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0061	0.0017	EPA-8260B		S08,Z1	1
1,1,1-Trichloroethane	ND	mg/kg	0.0061	0.00081	EPA-8260B		S08,Z1	1
1,1,2-Trichloroethane	ND	mg/kg	0.0061	0.0011	EPA-8260B		S08,Z1	1
Trichloroethene	ND	mg/kg	0.0061	0.00090	EPA-8260B	2040	S08,Z1	1
Trichlorofluoromethane	ND	mg/kg	0.0061	0.0018	EPA-8260B		S08,Z1	1
1,2,3-Trichloropropane	ND	mg/kg	0.0061	0.0023	EPA-8260B		S08,Z1	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0061	0.0012	EPA-8260B		S08,Z1	1
1,2,4-Trimethylbenzene	**0.0012**	**mg/kg**	**0.0061**	**0.00097**	**EPA-8260B**		**J,S08,Z1**	1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0061	0.00080	EPA-8260B		S08,Z1	1
Vinyl chloride	ND	mg/kg	0.0061	0.00071	EPA-8260B		S08,Z1	1
Total Xylenes	ND	mg/kg	0.012	0.0030	EPA-8260B		S08,Z1	1
p- & m-Xylenes	ND	mg/kg	0.0061	0.0018	EPA-8260B		S08,Z1	1
o-Xylene	ND	mg/kg	0.0061	0.0011	EPA-8260B		S08,Z1	1
1,2-Dichloroethane-d4 (Surrogate)	109	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.4	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	97.8	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-07 | **Client Sample Name:** HA4-0.5, 2/7/2023 11:10:00AM, SAWYER CARMAN

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	02/13/23 09:00	02/14/23 10:56	BYM	MS-V18	1.211	B159671	EPA 5035 Soil MS

DCN = Data Continuation Number

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 2303085-07 **Client Sample Name:** HA4-0.5, 2/7/2023 11:10:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Acenaphthene	ND	mg/kg	0.30	0.13	EPA-8270C-SIM	ND	A10	1
Acenaphthylene	ND	mg/kg	0.30	0.092	EPA-8270C-SIM	ND	A10	1
Anthracene	ND	mg/kg	0.30	0.081	EPA-8270C-SIM	ND	A10	1
Benzo[a]anthracene	ND	mg/kg	0.30	0.096	EPA-8270C-SIM	ND	A10	1
Benzo[b]fluoranthene	ND	mg/kg	0.30	0.079	EPA-8270C-SIM	ND	A10	1
Benzo[k]fluoranthene	ND	mg/kg	0.30	0.11	EPA-8270C-SIM	ND	A10	1
Benzo[a]pyrene	ND	mg/kg	0.30	0.078	EPA-8270C-SIM	ND	A10	1
Benzo[g,h,i]perylene	ND	mg/kg	0.30	0.072	EPA-8270C-SIM	ND	A10	1
Chrysene	ND	mg/kg	0.30	0.11	EPA-8270C-SIM	ND	A10	1
Dibenzo[a,h]anthracene	ND	mg/kg	0.30	0.048	EPA-8270C-SIM	ND	A10	1
Fluoranthene	ND	mg/kg	0.30	0.075	EPA-8270C-SIM	ND	A10	1
Fluorene	ND	mg/kg	0.30	0.097	EPA-8270C-SIM	ND	A10	1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.30	0.047	EPA-8270C-SIM	ND	A10	1
Naphthalene	ND	mg/kg	0.30	0.090	EPA-8270C-SIM	ND	A10	1
Phenanthrene	ND	mg/kg	0.30	0.086	EPA-8270C-SIM	ND	A10	1
Pyrene	ND	mg/kg	0.30	0.12	EPA-8270C-SIM	ND	A10	1
Nitrobenzene-d5 (Surrogate)	55.7	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrogate)	59.1	%	40 - 130 (LCL - UCL)		EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrogate)	41.9	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8270C-SIM	02/13/23 19:00	02/21/23 19:28	OLH	MS-B7	100	B159873	EPA 3550B

DCN = Data Continuation Number

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-07 | **Client Sample Name:** HA4-0.5, 2/7/2023 11:10:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	550	140	EPA-8015B/FFP	ND	S05	1
TPH - Diesel (FFP)	**370**	**mg/kg**	**270**	**60**	**EPA-8015B/FFP**	ND	**A52,S05**	1
TPH - Hydraulic Oil / Motor Oil	**3200**	**mg/kg**	**550**	**190**	**EPA-8015B/FFP**	ND	**A57,S05**	1
Tetracosane (Surrogate)	85.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		S05	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/24/23 20:00	02/27/23 23:10	BUP	GC-2	27.273	B161016	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Petroleum Hydrocarbons

BCL Sample ID: 2303085-07 | **Client Sample Name:** HA4-0.5, 2/7/2023 11:10:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	2300	580	EPA-8015B/FFP	ND	A10	1
TPH - Diesel (FFP)	**1100**	**mg/kg**	**1200**	**250**	**EPA-8015B/FFP**	ND	**J,A10,A52**	1
TPH - Motor Oil	**8900**	**mg/kg**	**2300**	**810**	**EPA-8015B/FFP**	ND	**A10,A57**	1
Tetracosane (Surrogate)	123	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP		A10	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/17/23 21:00	02/21/23 07:43	BUP	GC-2	115.38	B160385	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Concentrations (TTLC)

BCL Sample ID: 2303085-07 **Client Sample Name:** HA4-0.5, 2/7/2023 11:10:00AM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	500		1
Arsenic	**4.6**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	500		1
Barium	**84**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	10000		1
Beryllium	**0.18**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	75	**J**	1
Cadmium	**0.49**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	100	**J**	1
Chromium	**17**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	2500		1
Cobalt	**3.3**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	8000		1
Copper	**8.1**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	2500		1
Lead	**7.6**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	1000		1
Mercury	**0.024**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	20	**J**	2
Molybdenum	**1.9**	**mg/kg**	**2.5**	**0.050**	**EPA-6010B**	3500	**J**	1
Nickel	**17**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	2000		1
Selenium	**1.3**	**mg/kg**	**1.0**	**0.98**	**EPA-6010B**	100		1
Silver	ND	mg/kg	0.50	0.067	EPA-6010B	500		1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	700		1
Vanadium	**25**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	2400		1
Zinc	**27**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	5000		3

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	02/13/23 07:30	02/14/23 20:19	DVS	PE-OP3	0.980	B159719	EPA 3050B
2	EPA-7471A	02/15/23 08:40	02/15/23 14:08	TMT	CETAC3	1.008	B159900	EPA 7471A
3	EPA-6010B	02/13/23 07:30	02/16/23 17:29	DVS	PE-OP3	0.980	B159719	EPA 3050B

DCN = Data Continuation Number

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-08 **Client Sample Name:** HA4-3.0, 2/7/2023 12:12:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	320	79	EPA-8015B/FFP	ND	S05	1
TPH - Diesel (FFP)	**210**	**mg/kg**	**160**	**35**	**EPA-8015B/FFP**	ND	**A52,S05**	1
TPH - Hydraulic Oil / Motor Oil	**2500**	**mg/kg**	**320**	**110**	**EPA-8015B/FFP**	ND	**A57,S05**	1
Tetracosane (Surrogate)	65.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		S05	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	03/03/23 19:35	03/07/23 16:26	BUP	GC-2	15.789	B161414	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2303085-09 **Client Sample Name:** HA5-0.5, 2/7/2023 1:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Aldrin	ND	mg/kg	0.21	0.0077	EPA-8081A	1.4	A10	1
alpha-BHC	ND	mg/kg	0.21	0.016	EPA-8081A		A10	1
beta-BHC	ND	mg/kg	0.21	0.021	EPA-8081A		A10	1
delta-BHC	ND	mg/kg	0.21	0.016	EPA-8081A		A10	1
gamma-BHC (Lindane)	ND	mg/kg	0.21	0.0077	EPA-8081A	4.0	A10	1
Chlordane (Technical)	ND	mg/kg	21	0.43	EPA-8081A	2.5	A10	1
4,4'-DDD	ND	mg/kg	0.21	0.027	EPA-8081A	1.0	A10	1
4,4'-DDE	ND	mg/kg	0.21	0.041	EPA-8081A	1.0	A10	1
4,4'-DDT	**0.12**	**mg/kg**	**0.21**	**0.017**	**EPA-8081A**	1.0	**J,A10**	1
Dieldrin	ND	mg/kg	0.21	0.015	EPA-8081A	8.0	A10	1
Endosulfan I	ND	mg/kg	0.21	0.0086	EPA-8081A		A10	1
Endosulfan II	ND	mg/kg	0.21	0.015	EPA-8081A		A10	1
Endosulfan sulfate	ND	mg/kg	0.21	0.011	EPA-8081A		A10	1
Endrin	ND	mg/kg	0.21	0.028	EPA-8081A	0.2	A10	1
Endrin aldehyde	ND	mg/kg	0.21	0.0077	EPA-8081A		A10	1
Heptachlor	ND	mg/kg	0.21	0.037	EPA-8081A	4.7	A10	1
Heptachlor epoxide	ND	mg/kg	0.21	0.0073	EPA-8081A		A10	1
Methoxychlor	ND	mg/kg	0.21	0.040	EPA-8081A	100	A10	1
Toxaphene	ND	mg/kg	21	0.60	EPA-8081A	5	A10	1
TCMX (Surrogate)	102	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	88.2	%	40 - 130 (LCL - UCL)		EPA-8081A			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	02/17/23 20:00	02/20/23 18:57	HKS	GC-17	428.57	B160370	EPA 3550B

DCN = Data Continuation Number

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-09 | **Client Sample Name:** HA5-0.5, 2/7/2023 1:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Benzene	**0.0070**	**mg/kg**	**0.0075**	**0.0010**	**EPA-8260B**		**J,S08,Z1**	1
Bromobenzene	ND	mg/kg	0.0075	0.0013	EPA-8260B		S08,Z1	1
Bromochloromethane	ND	mg/kg	0.0075	0.0012	EPA-8260B		S08,Z1	1
Bromodichloromethane	ND	mg/kg	0.0075	0.0012	EPA-8260B		S08,Z1	1
Bromoform	ND	mg/kg	0.0075	0.0011	EPA-8260B		S08,Z1	1
Bromomethane	ND	mg/kg	0.0075	0.0026	EPA-8260B		S08,Z1	1
n-Butylbenzene	ND	mg/kg	0.0075	0.0011	EPA-8260B		S08,Z1	1
sec-Butylbenzene	ND	mg/kg	0.0075	0.0011	EPA-8260B		S08,Z1	1
tert-Butylbenzene	ND	mg/kg	0.0075	0.0013	EPA-8260B		S08,Z1	1
Carbon tetrachloride	ND	mg/kg	0.0075	0.0012	EPA-8260B		S08,Z1	1
Chlorobenzene	ND	mg/kg	0.0075	0.0012	EPA-8260B		S08,Z1	1
Chloroethane	ND	mg/kg	0.0075	0.0017	EPA-8260B		S08,Z1	1
Chloroform	ND	mg/kg	0.0075	0.0014	EPA-8260B		S08,Z1	1
Chloromethane	ND	mg/kg	0.0075	0.0017	EPA-8260B		S08,Z1	1
2-Chlorotoluene	ND	mg/kg	0.0075	0.0013	EPA-8260B		S08,Z1	1
4-Chlorotoluene	ND	mg/kg	0.0075	0.0011	EPA-8260B		S08,Z1	1
Dibromochloromethane	ND	mg/kg	0.0075	0.0012	EPA-8260B		S08,Z1	1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0075	0.0014	EPA-8260B		S08,Z1	1
1,2-Dibromoethane	ND	mg/kg	0.0075	0.0012	EPA-8260B		S08,Z1	1
Dibromomethane	ND	mg/kg	0.0075	0.0021	EPA-8260B		S08,Z1	1
1,2-Dichlorobenzene	ND	mg/kg	0.0075	0.0012	EPA-8260B		S08,Z1	1
1,3-Dichlorobenzene	ND	mg/kg	0.0075	0.0011	EPA-8260B		S08,Z1	1
1,4-Dichlorobenzene	ND	mg/kg	0.0075	0.0011	EPA-8260B		S08,Z1	1
Dichlorodifluoromethane	ND	mg/kg	0.0075	0.0012	EPA-8260B		S08,Z1	1
1,1-Dichloroethane	ND	mg/kg	0.0075	0.00096	EPA-8260B		S08,Z1	1
1,2-Dichloroethane	ND	mg/kg	0.0075	0.0011	EPA-8260B		S08,Z1	1
1,1-Dichloroethene	ND	mg/kg	0.0075	0.0017	EPA-8260B		S08,Z1	1
cis-1,2-Dichloroethene	ND	mg/kg	0.0075	0.00081	EPA-8260B		S08,Z1	1
trans-1,2-Dichloroethene	ND	mg/kg	0.0075	0.0056	EPA-8260B		S08,Z1	1
1,2-Dichloropropane	ND	mg/kg	0.0075	0.0012	EPA-8260B		S08,Z1	1
1,3-Dichloropropane	ND	mg/kg	0.0075	0.0010	EPA-8260B		S08,Z1	1
2,2-Dichloropropane	ND	mg/kg	0.0075	0.0010	EPA-8260B		S08,Z1	1
1,1-Dichloropropene	ND	mg/kg	0.0075	0.0010	EPA-8260B		S08,Z1	1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-09

Client Sample Name: HA5-0.5, 2/7/2023 1:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0075	0.00087	EPA-8260B		S08,Z1	1
trans-1,3-Dichloropropene	ND	mg/kg	0.0075	0.00099	EPA-8260B		S08,Z1	1
Ethylbenzene	**0.0021**	**mg/kg**	**0.0075**	**0.0010**	**EPA-8260B**		**J,S08,Z1**	1
Hexachlorobutadiene	ND	mg/kg	0.0075	0.0010	EPA-8260B		S08,Z1	1
Isopropylbenzene	ND	mg/kg	0.0075	0.0012	EPA-8260B		S08,Z1	1
p-Isopropyltoluene	ND	mg/kg	0.0075	0.00089	EPA-8260B		S08,Z1	1
Methylene chloride	ND	mg/kg	0.015	0.0017	EPA-8260B		S08,Z1	1
Methyl t-butyl ether	ND	mg/kg	0.0075	0.00084	EPA-8260B		S08,Z1	1
Naphthalene	ND	mg/kg	0.0075	0.0015	EPA-8260B		S08,Z1	1
n-Propylbenzene	ND	mg/kg	0.0075	0.0011	EPA-8260B		S08,Z1	1
Styrene	ND	mg/kg	0.0075	0.00093	EPA-8260B		S08,Z1	1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0075	0.0014	EPA-8260B		S08,Z1	1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0075	0.0013	EPA-8260B		S08,Z1	1
Tetrachloroethene	ND	mg/kg	0.0075	0.0015	EPA-8260B		S08,Z1	1
Toluene	**0.0099**	**mg/kg**	**0.0075**	**0.0010**	**EPA-8260B**		**S08,Z1**	1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0075	0.0023	EPA-8260B		S08,Z1	1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0075	0.0021	EPA-8260B		S08,Z1	1
1,1,1-Trichloroethane	ND	mg/kg	0.0075	0.0010	EPA-8260B		S08,Z1	1
1,1,2-Trichloroethane	ND	mg/kg	0.0075	0.0014	EPA-8260B		S08,Z1	1
Trichloroethene	ND	mg/kg	0.0075	0.0011	EPA-8260B	2040	S08,Z1	1
Trichlorofluoromethane	ND	mg/kg	0.0075	0.0023	EPA-8260B		S08,Z1	1
1,2,3-Trichloropropane	ND	mg/kg	0.0075	0.0029	EPA-8260B		S08,Z1	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0075	0.0015	EPA-8260B		S08,Z1	1
1,2,4-Trimethylbenzene	**0.0021**	**mg/kg**	**0.0075**	**0.0012**	**EPA-8260B**		**J,S08,Z1**	1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0075	0.00099	EPA-8260B		S08,Z1	1
Vinyl chloride	ND	mg/kg	0.0075	0.00089	EPA-8260B		S08,Z1	1
Total Xylenes	**0.0043**	**mg/kg**	**0.015**	**0.0038**	**EPA-8260B**		**J,S08,Z1**	1
p- & m-Xylenes	**0.0043**	**mg/kg**	**0.0075**	**0.0023**	**EPA-8260B**		**J,S08,Z1**	1
o-Xylene	ND	mg/kg	0.0075	0.0014	EPA-8260B		S08,Z1	1
1,2-Dichloroethane-d4 (Surrogate)	113	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	98.1	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	87.1	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-09 | **Client Sample Name:** HA5-0.5, 2/7/2023 1:20:00PM, SAWYER CARMAN

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	02/13/23 09:00	02/14/23 11:18	BYM	MS-V18	1.502	B159671	EPA 5035 Soil MS

DCN = Data Continuation Number

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 2303085-09 **Client Sample Name:** HA5-0.5, 2/7/2023 1:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Acenaphthene	ND	mg/kg	0.25	0.11	EPA-8270C-SIM	ND	A10	1
Acenaphthylene	ND	mg/kg	0.25	0.077	EPA-8270C-SIM	ND	A10	1
Anthracene	ND	mg/kg	0.25	0.068	EPA-8270C-SIM	ND	A10	1
Benzo[a]anthracene	ND	mg/kg	0.25	0.080	EPA-8270C-SIM	ND	A10	1
Benzo[b]fluoranthene	ND	mg/kg	0.25	0.066	EPA-8270C-SIM	ND	A10	1
Benzo[k]fluoranthene	ND	mg/kg	0.25	0.092	EPA-8270C-SIM	ND	A10	1
Benzo[a]pyrene	ND	mg/kg	0.25	0.065	EPA-8270C-SIM	ND	A10	1
Benzo[g,h,i]perylene	ND	mg/kg	0.25	0.060	EPA-8270C-SIM	ND	A10	1
Chrysene	ND	mg/kg	0.25	0.092	EPA-8270C-SIM	ND	A10	1
Dibenzo[a,h]anthracene	ND	mg/kg	0.25	0.040	EPA-8270C-SIM	ND	A10	1
Fluoranthene	ND	mg/kg	0.25	0.062	EPA-8270C-SIM	ND	A10	1
Fluorene	ND	mg/kg	0.25	0.081	EPA-8270C-SIM	ND	A10	1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.25	0.039	EPA-8270C-SIM	ND	A10	1
Naphthalene	ND	mg/kg	0.25	0.075	EPA-8270C-SIM	ND	A10	1
Phenanthrene	ND	mg/kg	0.25	0.072	EPA-8270C-SIM	ND	A10	1
Pyrene	ND	mg/kg	0.25	0.10	EPA-8270C-SIM	ND	A10	1
Nitrobenzene-d5 (Surrogate)	67.6	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrogate)	67.1	%	40 - 130 (LCL - UCL)		EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrogate)	50.4	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8270C-SIM	02/13/23 19:00	02/21/23 19:51	OLH	MS-B7	83.333	B159873	EPA 3550B

DCN = Data Continuation Number

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-09 **Client Sample Name:** HA5-0.5, 2/7/2023 1:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	380	94	EPA-8015B/FFP	ND	S05	1
TPH - Diesel (FFP)	**270**	**mg/kg**	**190**	**41**	**EPA-8015B/FFP**	ND	**A52,S05**	1
TPH - Hydraulic Oil / Motor Oil	**3400**	**mg/kg**	**380**	**130**	**EPA-8015B/FFP**	ND	**A57,S05**	1
Tetracosane (Surrogate)	74.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		S05	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/24/23 20:00	02/27/23 23:33	BUP	GC-2	18.750	B161016	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Petroleum Hydrocarbons

BCL Sample ID: 2303085-09 **Client Sample Name:** HA5-0.5, 2/7/2023 1:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	1800	440	EPA-8015B/FFP	ND	A10	1
TPH - Diesel (FFP)	**790**	**mg/kg**	**880**	**190**	**EPA-8015B/FFP**	ND	**J,A10,A52**	1
TPH - Motor Oil	**7900**	**mg/kg**	**1800**	**620**	**EPA-8015B/FFP**	ND	**A10,A57**	1
Tetracosane (Surrogate)	123	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP		A10	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/17/23 21:00	02/21/23 08:06	BUP	GC-2	88.235	B160385	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Concentrations (TTLC)

BCL Sample ID: 2303085-09 **Client Sample Name:** HA5-0.5, 2/7/2023 1:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Antimony	**0.45**	**mg/kg**	**5.0**	**0.33**	**EPA-6010B**	500	**J**	1
Arsenic	**2.5**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	500		1
Barium	**89**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	10000		1
Beryllium	**0.17**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	75	**J**	1
Cadmium	**0.52**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	100		1
Chromium	**19**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	2500		1
Cobalt	**6.2**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	8000		1
Copper	**9.9**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	2500		1
Lead	**6.7**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	1000		1
Mercury	**0.11**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	20	**J**	2
Molybdenum	**0.17**	**mg/kg**	**2.5**	**0.050**	**EPA-6010B**	3500	**J**	1
Nickel	**22**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	2000		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	100		1
Silver	**0.17**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	500	**J**	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	700		1
Vanadium	**31**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	2400		1
Zinc	**32**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	5000		3

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	02/13/23 07:30	02/14/23 20:20	DVS	PE-OP3	0.971	B159719	EPA 3050B
2	EPA-7471A	02/20/23 08:15	02/20/23 14:22	TMT	CETAC3	1.008	B160214	EPA 7471A
3	EPA-6010B	02/13/23 07:30	02/16/23 17:30	DVS	PE-OP3	0.971	B159719	EPA 3050B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-10 **Client Sample Name:** HA5-3.0, 2/7/2023 1:53:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	430	110	EPA-8015B/FFP	ND	S05	1
TPH - Diesel (FFP)	ND	mg/kg	210	47	EPA-8015B/FFP	ND	S05	1
TPH - Hydraulic Oil / Motor Oil	**2400**	**mg/kg**	**430**	**150**	**EPA-8015B/FFP**	ND	**A57,S05**	1
Tetracosane (Surrogate)	71.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		S05	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	03/03/23 19:35	03/07/23 16:50	BUP	GC-2	21.429	B161414	EPA 3550B

DCN = Data Continuation Number

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2303085-11 **Client Sample Name:** HA8-0.5, 2/7/2023 2:12:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Aldrin	ND	mg/kg	0.0050	0.00018	EPA-8081A	1.4	A10	1
alpha-BHC	ND	mg/kg	0.0050	0.00038	EPA-8081A		A10	1
beta-BHC	ND	mg/kg	0.0050	0.00048	EPA-8081A		A10	1
delta-BHC	ND	mg/kg	0.0050	0.00037	EPA-8081A		A10	1
gamma-BHC (Lindane)	ND	mg/kg	0.0050	0.00018	EPA-8081A	4.0	A10	1
Chlordane (Technical)	**0.071**	**mg/kg**	**0.50**	**0.010**	**EPA-8081A**	2.5	**J,A10**	1
4,4'-DDD	**0.0011**	**mg/kg**	**0.0050**	**0.00064**	**EPA-8081A**	1.0	**J,A10**	1
4,4'-DDE	**0.0030**	**mg/kg**	**0.0050**	**0.00095**	**EPA-8081A**	1.0	**J,A10**	1
4,4'-DDT	**0.0030**	**mg/kg**	**0.0050**	**0.00040**	**EPA-8081A**	1.0	**J,A10**	1
Dieldrin	**0.00038**	**mg/kg**	**0.0050**	**0.00036**	**EPA-8081A**	8.0	**J,A10**	1
Endosulfan I	ND	mg/kg	0.0050	0.00020	EPA-8081A		A10	1
Endosulfan II	ND	mg/kg	0.0050	0.00034	EPA-8081A		A10	1
Endosulfan sulfate	ND	mg/kg	0.0050	0.00026	EPA-8081A		A10	1
Endrin	ND	mg/kg	0.0050	0.00065	EPA-8081A	0.2	A10	1
Endrin aldehyde	ND	mg/kg	0.0050	0.00018	EPA-8081A		A10	1
Heptachlor	ND	mg/kg	0.0050	0.00086	EPA-8081A	4.7	A10	1
Heptachlor epoxide	ND	mg/kg	0.0050	0.00017	EPA-8081A		A10	1
Methoxychlor	ND	mg/kg	0.0050	0.00094	EPA-8081A	100	A10	1
Toxaphene	ND	mg/kg	0.50	0.014	EPA-8081A	5	A10	1
TCMX (Surrogate)	37.0	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	34.6	%	40 - 130 (LCL - UCL)		EPA-8081A		S09	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	02/17/23 20:00	02/20/23 19:31	HKS	GC-17	10.135	B160370	EPA 3550B

DCN = Data Continuation Number

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-11 | **Client Sample Name:** HA8-0.5, 2/7/2023 2:12:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Benzene	**0.0017**	**mg/kg**	**0.0050**	**0.00067**	**EPA-8260B**		**J**	1
Bromobenzene	ND	mg/kg	0.0050	0.00087	EPA-8260B			1
Bromochloromethane	ND	mg/kg	0.0050	0.00081	EPA-8260B			1
Bromodichloromethane	ND	mg/kg	0.0050	0.00078	EPA-8260B			1
Bromoform	ND	mg/kg	0.0050	0.00070	EPA-8260B			1
Bromomethane	ND	mg/kg	0.0050	0.0017	EPA-8260B			1
n-Butylbenzene	ND	mg/kg	0.0050	0.00076	EPA-8260B			1
sec-Butylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B			1
tert-Butylbenzene	ND	mg/kg	0.0050	0.00085	EPA-8260B			1
Carbon tetrachloride	ND	mg/kg	0.0050	0.00078	EPA-8260B			1
Chlorobenzene	ND	mg/kg	0.0050	0.00077	EPA-8260B			1
Chloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B			1
Chloroform	ND	mg/kg	0.0050	0.00090	EPA-8260B			1
Chloromethane	ND	mg/kg	0.0050	0.0011	EPA-8260B			1
2-Chlorotoluene	ND	mg/kg	0.0050	0.00087	EPA-8260B			1
4-Chlorotoluene	ND	mg/kg	0.0050	0.00070	EPA-8260B			1
Dibromochloromethane	ND	mg/kg	0.0050	0.00080	EPA-8260B			1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0050	0.00096	EPA-8260B			1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.00082	EPA-8260B			1
Dibromomethane	ND	mg/kg	0.0050	0.0014	EPA-8260B			1
1,2-Dichlorobenzene	ND	mg/kg	0.0050	0.00079	EPA-8260B			1
1,3-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B			1
1,4-Dichlorobenzene	ND	mg/kg	0.0050	0.00073	EPA-8260B			1
Dichlorodifluoromethane	ND	mg/kg	0.0050	0.00079	EPA-8260B			1
1,1-Dichloroethane	ND	mg/kg	0.0050	0.00064	EPA-8260B			1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00073	EPA-8260B			1
1,1-Dichloroethene	ND	mg/kg	0.0050	0.0011	EPA-8260B			1
cis-1,2-Dichloroethene	ND	mg/kg	0.0050	0.00054	EPA-8260B			1
trans-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0037	EPA-8260B			1
1,2-Dichloropropane	ND	mg/kg	0.0050	0.00080	EPA-8260B			1
1,3-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B			1
2,2-Dichloropropane	ND	mg/kg	0.0050	0.00067	EPA-8260B			1
1,1-Dichloropropene	ND	mg/kg	0.0050	0.00067	EPA-8260B			1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-11 **Client Sample Name:** HA8-0.5, 2/7/2023 2:12:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00058	EPA-8260B			1
trans-1,3-Dichloropropene	ND	mg/kg	0.0050	0.00066	EPA-8260B			1
Ethylbenzene	**0.0032**	**mg/kg**	**0.0050**	**0.00069**	**EPA-8260B**		**J**	1
Hexachlorobutadiene	ND	mg/kg	0.0050	0.00067	EPA-8260B			1
Isopropylbenzene	ND	mg/kg	0.0050	0.00080	EPA-8260B			1
p-Isopropyltoluene	ND	mg/kg	0.0050	0.00059	EPA-8260B			1
Methylene chloride	ND	mg/kg	0.010	0.0011	EPA-8260B			1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00056	EPA-8260B			1
Naphthalene	ND	mg/kg	0.0050	0.00099	EPA-8260B			1
n-Propylbenzene	ND	mg/kg	0.0050	0.00071	EPA-8260B			1
Styrene	ND	mg/kg	0.0050	0.00062	EPA-8260B			1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00095	EPA-8260B			1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0050	0.00084	EPA-8260B			1
Tetrachloroethene	ND	mg/kg	0.0050	0.00097	EPA-8260B			1
Toluene	**0.0031**	**mg/kg**	**0.0050**	**0.00069**	**EPA-8260B**		**J**	1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B			1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0050	0.0014	EPA-8260B			1
1,1,1-Trichloroethane	ND	mg/kg	0.0050	0.00067	EPA-8260B			1
1,1,2-Trichloroethane	ND	mg/kg	0.0050	0.00094	EPA-8260B			1
Trichloroethene	ND	mg/kg	0.0050	0.00074	EPA-8260B	2040		1
Trichlorofluoromethane	ND	mg/kg	0.0050	0.0015	EPA-8260B			1
1,2,3-Trichloropropane	ND	mg/kg	0.0050	0.0019	EPA-8260B			1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0050	0.0010	EPA-8260B			1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0050	0.00080	EPA-8260B			1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0050	0.00066	EPA-8260B			1
Vinyl chloride	ND	mg/kg	0.0050	0.00059	EPA-8260B			1
Total Xylenes	ND	mg/kg	0.010	0.0025	EPA-8260B			1
p- & m-Xylenes	ND	mg/kg	0.0050	0.0015	EPA-8260B			1
o-Xylene	ND	mg/kg	0.0050	0.00093	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	109	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	102	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	102	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-11 | **Client Sample Name:** HA8-0.5, 2/7/2023 2:12:00PM, SAWYER CARMAN

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	02/13/23 09:00	02/14/23 11:40	BYM	MS-V18	1.022	B159671	EPA 5035 Soil MS

DCN = Data Continuation Number

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 2303085-11 | **Client Sample Name:** HA8-0.5, 2/7/2023 2:12:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Acenaphthene	ND	mg/kg	0.015	0.0065	EPA-8270C-SIM	ND	A10	1
Acenaphthylene	ND	mg/kg	0.015	0.0046	EPA-8270C-SIM	ND	A10	1
Anthracene	ND	mg/kg	0.015	0.0040	EPA-8270C-SIM	ND	A10	1
Benzo[a]anthracene	ND	mg/kg	0.015	0.0048	EPA-8270C-SIM	ND	A10	1
Benzo[b]fluoranthene	ND	mg/kg	0.015	0.0040	EPA-8270C-SIM	ND	A10	1
Benzo[k]fluoranthene	ND	mg/kg	0.015	0.0055	EPA-8270C-SIM	ND	A10	1
Benzo[a]pyrene	ND	mg/kg	0.015	0.0039	EPA-8270C-SIM	ND	A10	1
Benzo[g,h,i]perylene	ND	mg/kg	0.015	0.0036	EPA-8270C-SIM	ND	A10	1
Chrysene	ND	mg/kg	0.015	0.0055	EPA-8270C-SIM	ND	A10	1
Dibenzo[a,h]anthracene	ND	mg/kg	0.015	0.0024	EPA-8270C-SIM	ND	A10	1
Fluoranthene	ND	mg/kg	0.015	0.0038	EPA-8270C-SIM	ND	A10	1
Fluorene	ND	mg/kg	0.015	0.0048	EPA-8270C-SIM	ND	A10	1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.015	0.0024	EPA-8270C-SIM	ND	A10	1
Naphthalene	ND	mg/kg	0.015	0.0045	EPA-8270C-SIM	ND	A10	1
Phenanthrene	ND	mg/kg	0.015	0.0043	EPA-8270C-SIM	ND	A10	1
Pyrene	ND	mg/kg	0.015	0.0060	EPA-8270C-SIM	ND	A10	1
Nitrobenzene-d5 (Surrogate)	65.2	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrogate)	46.8	%	40 - 130 (LCL - UCL)		EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrogate)	26.8	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM		S09	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8270C-SIM	02/13/23 19:00	02/21/23 18:44	OLH	MS-B7	5.051	B159873	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Petroleum Hydrocarbons

BCL Sample ID: 2303085-11 | **Client Sample Name:** HA8-0.5, 2/7/2023 2:12:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	2.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	**37**	**mg/kg**	**20**	**7.0**	**EPA-8015B/FFP**	ND	**A57**	1
Tetracosane (Surrogate)	108	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/17/23 21:00	02/20/23 20:43	BUP	GC-2	0.987	B160385	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Concentrations (TTLC)

BCL Sample ID: 2303085-11 | **Client Sample Name:** HA8-0.5, 2/7/2023 2:12:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Antimony	**0.49**	**mg/kg**	**5.0**	**0.33**	**EPA-6010B**	500	**J**	1
Arsenic	**3.9**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	500		1
Barium	**64**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	10000		1
Beryllium	**0.19**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	75	**J**	1
Cadmium	**0.79**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	100		1
Chromium	**11**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	2500		1
Cobalt	**4.2**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	8000		1
Copper	**14**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	2500		1
Lead	**8.2**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	1000		1
Mercury	**1.9**	**mg/kg**	**0.32**	**0.032**	**EPA-7471A**	20		2
Molybdenum	**0.50**	**mg/kg**	**2.5**	**0.050**	**EPA-6010B**	3500	**J**	1
Nickel	**11**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	2000		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	100		1
Silver	**0.17**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	500	**J**	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	700		1
Vanadium	**22**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	2400		1
Zinc	**46**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	5000		3

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	02/13/23 07:30	02/14/23 20:22	DVS	PE-OP3	0.980	B159719	EPA 3050B
2	EPA-7471A	02/20/23 08:15	02/20/23 14:37	TMT	CETAC3	1.953	B160214	EPA 7471A
3	EPA-6010B	02/13/23 07:30	02/16/23 17:32	DVS	PE-OP3	0.980	B159719	EPA 3050B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Concentrations (TTLC)

BCL Sample ID:	2303085-12	**Client Sample Name:**	HA8-3.0, 2/7/2023 2:35:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Mercury	**0.087**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	20	**J**	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-7471A	03/01/23 10:33	03/01/23 13:16	TMT	CETAC3	1.008	B160988	EPA 7471A

DCN = Data Continuation Number

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2303085-13 **Client Sample Name:** HA7-0.5, 2/7/2023 2:50:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Aldrin	ND	mg/kg	0.17	0.0060	EPA-8081A	1.4	A10	1
alpha-BHC	ND	mg/kg	0.17	0.013	EPA-8081A		A10	1
beta-BHC	ND	mg/kg	0.17	0.016	EPA-8081A		A10	1
delta-BHC	ND	mg/kg	0.17	0.012	EPA-8081A		A10	1
gamma-BHC (Lindane)	ND	mg/kg	0.17	0.0060	EPA-8081A	4.0	A10	1
Chlordane (Technical)	ND	mg/kg	17	0.33	EPA-8081A	2.5	A10	1
4,4'-DDD	ND	mg/kg	0.17	0.021	EPA-8081A	1.0	A10	1
4,4'-DDE	ND	mg/kg	0.17	0.032	EPA-8081A	1.0	A10	1
4,4'-DDT	**0.057**	**mg/kg**	**0.17**	**0.013**	**EPA-8081A**	1.0	**J,A10**	1
Dieldrin	ND	mg/kg	0.17	0.012	EPA-8081A	8.0	A10	1
Endosulfan I	ND	mg/kg	0.17	0.0067	EPA-8081A		A10	1
Endosulfan II	ND	mg/kg	0.17	0.011	EPA-8081A		A10	1
Endosulfan sulfate	ND	mg/kg	0.17	0.0087	EPA-8081A		A10	1
Endrin	ND	mg/kg	0.17	0.022	EPA-8081A	0.2	A10	1
Endrin aldehyde	ND	mg/kg	0.17	0.0060	EPA-8081A		A10	1
Heptachlor	ND	mg/kg	0.17	0.029	EPA-8081A	4.7	A10	1
Heptachlor epoxide	ND	mg/kg	0.17	0.0057	EPA-8081A		A10	1
Methoxychlor	ND	mg/kg	0.17	0.031	EPA-8081A	100	A10	1
Toxaphene	ND	mg/kg	17	0.47	EPA-8081A	5	A10	1
TCMX (Surrogate)	100	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	88.3	%	40 - 130 (LCL - UCL)		EPA-8081A			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	02/17/23 20:00	02/20/23 20:55	HKS	GC-17	333.33	B160370	EPA 3550B

DCN = Data Continuation Number

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-13 **Client Sample Name:** HA7-0.5, 2/7/2023 2:50:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Benzene	**0.0049**	**mg/kg**	**0.0079**	**0.0011**	**EPA-8260B**		**J,S08,Z1**	1
Bromobenzene	ND	mg/kg	0.0079	0.0014	EPA-8260B		S08,Z1	1
Bromochloromethane	ND	mg/kg	0.0079	0.0013	EPA-8260B		S08,Z1	1
Bromodichloromethane	ND	mg/kg	0.0079	0.0012	EPA-8260B		S08,Z1	1
Bromoform	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
Bromomethane	ND	mg/kg	0.0079	0.0027	EPA-8260B		S08,Z1	1
n-Butylbenzene	ND	mg/kg	0.0079	0.0012	EPA-8260B		S08,Z1	1
sec-Butylbenzene	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
tert-Butylbenzene	ND	mg/kg	0.0079	0.0013	EPA-8260B		S08,Z1	1
Carbon tetrachloride	ND	mg/kg	0.0079	0.0012	EPA-8260B		S08,Z1	1
Chlorobenzene	ND	mg/kg	0.0079	0.0012	EPA-8260B		S08,Z1	1
Chloroethane	ND	mg/kg	0.0079	0.0017	EPA-8260B		S08,Z1	1
Chloroform	ND	mg/kg	0.0079	0.0014	EPA-8260B		S08,Z1	1
Chloromethane	ND	mg/kg	0.0079	0.0017	EPA-8260B		S08,Z1	1
2-Chlorotoluene	ND	mg/kg	0.0079	0.0014	EPA-8260B		S08,Z1	1
4-Chlorotoluene	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
Dibromochloromethane	ND	mg/kg	0.0079	0.0013	EPA-8260B		S08,Z1	1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0079	0.0015	EPA-8260B		S08,Z1	1
1,2-Dibromoethane	ND	mg/kg	0.0079	0.0013	EPA-8260B		S08,Z1	1
Dibromomethane	ND	mg/kg	0.0079	0.0022	EPA-8260B		S08,Z1	1
1,2-Dichlorobenzene	ND	mg/kg	0.0079	0.0012	EPA-8260B		S08,Z1	1
1,3-Dichlorobenzene	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
1,4-Dichlorobenzene	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
Dichlorodifluoromethane	ND	mg/kg	0.0079	0.0012	EPA-8260B		S08,Z1	1
1,1-Dichloroethane	ND	mg/kg	0.0079	0.0010	EPA-8260B		S08,Z1	1
1,2-Dichloroethane	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
1,1-Dichloroethene	ND	mg/kg	0.0079	0.0017	EPA-8260B		S08,Z1	1
cis-1,2-Dichloroethene	ND	mg/kg	0.0079	0.00085	EPA-8260B		S08,Z1	1
trans-1,2-Dichloroethene	ND	mg/kg	0.0079	0.0058	EPA-8260B		S08,Z1	1
1,2-Dichloropropane	ND	mg/kg	0.0079	0.0013	EPA-8260B		S08,Z1	1
1,3-Dichloropropane	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
2,2-Dichloropropane	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
1,1-Dichloropropene	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-13 **Client Sample Name:** HA7-0.5, 2/7/2023 2:50:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0079	0.00091	EPA-8260B		S08,Z1	1
trans-1,3-Dichloropropene	ND	mg/kg	0.0079	0.0010	EPA-8260B		S08,Z1	1
Ethylbenzene	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
Hexachlorobutadiene	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
Isopropylbenzene	ND	mg/kg	0.0079	0.0013	EPA-8260B		S08,Z1	1
p-Isopropyltoluene	ND	mg/kg	0.0079	0.00093	EPA-8260B		S08,Z1	1
Methylene chloride	ND	mg/kg	0.016	0.0017	EPA-8260B		S08,Z1	1
Methyl t-butyl ether	ND	mg/kg	0.0079	0.00088	EPA-8260B		S08,Z1	1
Naphthalene	ND	mg/kg	0.0079	0.0016	EPA-8260B		S08,Z1	1
n-Propylbenzene	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
Styrene	ND	mg/kg	0.0079	0.00097	EPA-8260B		S08,Z1	1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0079	0.0015	EPA-8260B		S08,Z1	1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0079	0.0013	EPA-8260B		S08,Z1	1
Tetrachloroethene	ND	mg/kg	0.0079	0.0015	EPA-8260B		S08,Z1	1
Toluene	**0.0049**	**mg/kg**	**0.0079**	**0.0011**	**EPA-8260B**		**J,S08,Z1**	1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0079	0.0024	EPA-8260B		S08,Z1	1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0079	0.0022	EPA-8260B		S08,Z1	1
1,1,1-Trichloroethane	ND	mg/kg	0.0079	0.0011	EPA-8260B		S08,Z1	1
1,1,2-Trichloroethane	ND	mg/kg	0.0079	0.0015	EPA-8260B		S08,Z1	1
Trichloroethene	ND	mg/kg	0.0079	0.0012	EPA-8260B	2040	S08,Z1	1
Trichlorofluoromethane	ND	mg/kg	0.0079	0.0024	EPA-8260B		S08,Z1	1
1,2,3-Trichloropropane	ND	mg/kg	0.0079	0.0030	EPA-8260B		S08,Z1	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0079	0.0016	EPA-8260B		S08,Z1	1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0079	0.0013	EPA-8260B		S08,Z1	1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0079	0.0010	EPA-8260B		S08,Z1	1
Vinyl chloride	ND	mg/kg	0.0079	0.00093	EPA-8260B		S08,Z1	1
Total Xylenes	ND	mg/kg	0.016	0.0039	EPA-8260B		S08,Z1	1
p- & m-Xylenes	ND	mg/kg	0.0079	0.0024	EPA-8260B		S08,Z1	1
o-Xylene	ND	mg/kg	0.0079	0.0015	EPA-8260B		S08,Z1	1
1,2-Dichloroethane-d4 (Surrogate)	114	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.1	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	91.7	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-13 | **Client Sample Name:** HA7-0.5, 2/7/2023 2:50:00PM, SAWYER CARMAN

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	02/13/23 09:00	02/14/23 12:02	BYM	MS-V18	1.572	B159671	EPA 5035 Soil MS

DCN = Data Continuation Number

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 2303085-13 **Client Sample Name:** HA7-0.5, 2/7/2023 2:50:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Acenaphthene	ND	mg/kg	0.25	0.11	EPA-8270C-SIM	ND	A10	1
Acenaphthylene	ND	mg/kg	0.25	0.077	EPA-8270C-SIM	ND	A10	1
Anthracene	ND	mg/kg	0.25	0.068	EPA-8270C-SIM	ND	A10	1
Benzo[a]anthracene	ND	mg/kg	0.25	0.080	EPA-8270C-SIM	ND	A10	1
Benzo[b]fluoranthene	ND	mg/kg	0.25	0.066	EPA-8270C-SIM	ND	A10	1
Benzo[k]fluoranthene	ND	mg/kg	0.25	0.092	EPA-8270C-SIM	ND	A10	1
Benzo[a]pyrene	ND	mg/kg	0.25	0.065	EPA-8270C-SIM	ND	A10	1
Benzo[g,h,i]perylene	ND	mg/kg	0.25	0.060	EPA-8270C-SIM	ND	A10	1
Chrysene	ND	mg/kg	0.25	0.092	EPA-8270C-SIM	ND	A10	1
Dibenzo[a,h]anthracene	ND	mg/kg	0.25	0.040	EPA-8270C-SIM	ND	A10	1
Fluoranthene	ND	mg/kg	0.25	0.062	EPA-8270C-SIM	ND	A10	1
Fluorene	ND	mg/kg	0.25	0.081	EPA-8270C-SIM	ND	A10	1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.25	0.039	EPA-8270C-SIM	ND	A10	1
Naphthalene	ND	mg/kg	0.25	0.075	EPA-8270C-SIM	ND	A10	1
Phenanthrene	ND	mg/kg	0.25	0.072	EPA-8270C-SIM	ND	A10	1
Pyrene	ND	mg/kg	0.25	0.10	EPA-8270C-SIM	ND	A10	1
Nitrobenzene-d5 (Surrogate)	56.4	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrogate)	50.4	%	40 - 130 (LCL - UCL)		EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrogate)	37.0	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8270C-SIM	02/13/23 19:00	02/21/23 20:13	OLH	MS-B7	83.333	B159873	EPA 3550B

DCN = Data Continuation Number

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-13 **Client Sample Name:** HA7-0.5, 2/7/2023 2:50:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	430	110	EPA-8015B/FFP	ND	S05	1
TPH - Diesel (FFP)	**260**	**mg/kg**	**210**	**47**	**EPA-8015B/FFP**	ND	**A52,S05**	1
TPH - Hydraulic Oil / Motor Oil	**3600**	**mg/kg**	**430**	**150**	**EPA-8015B/FFP**	ND	**A57,S05**	1
Tetracosane (Surrogate)	87.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		S05	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/24/23 20:00	02/27/23 23:56	BUP	GC-2	21.429	B161016	EPA 3550B

DCN = Data Continuation Number

Total Petroleum Hydrocarbons

BCL Sample ID: 2303085-13 | **Client Sample Name:** HA7-0.5, 2/7/2023 2:50:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	2000	500	EPA-8015B/FFP	ND	A10	1
TPH - Diesel (FFP)	**730**	**mg/kg**	**1000**	**220**	**EPA-8015B/FFP**	ND	**J,A10,A52**	1
TPH - Motor Oil	**6600**	**mg/kg**	**2000**	**700**	**EPA-8015B/FFP**	ND	**A10,A57**	1
Tetracosane (Surrogate)	117	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP		A10	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/17/23 21:00	02/21/23 08:29	BUP	GC-2	100	B160385	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura 180 North Ashwood Avenue Ventura, CA 93003	**Reported:** 03/15/2023 16:41 Project: 22-13765 Project Number: [none] Project Manager: Scott English

Total Concentrations (TTLC)

BCL Sample ID: 2303085-13 **Client Sample Name:** HA7-0.5, 2/7/2023 2:50:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	500		1
Arsenic	**3.7**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	500		1
Barium	**92**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	10000		1
Beryllium	**0.18**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	75	**J**	1
Cadmium	**0.57**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	100		1
Chromium	**14**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	2500		1
Cobalt	**3.3**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	8000		1
Copper	**8.3**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	2500		1
Lead	**5.7**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	1000		1
Mercury	**0.12**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	20	**J**	2
Molybdenum	**0.68**	**mg/kg**	**2.5**	**0.050**	**EPA-6010B**	3500	**J**	1
Nickel	**17**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	2000		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	100		1
Silver	ND	mg/kg	0.50	0.067	EPA-6010B	500		1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	700		1
Vanadium	**29**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	2400		1
Zinc	**29**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	5000		3

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	02/13/23 07:30	02/14/23 19:59	DVS	PE-OP3	1	B159719	EPA 3050B
2	EPA-7471A	02/20/23 08:15	02/20/23 14:26	TMT	CETAC3	1.008	B160214	EPA 7471A
3	EPA-6010B	02/13/23 07:30	02/16/23 16:52	DVS	PE-OP3	1	B159719	EPA 3050B

DCN = Data Continuation Number

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-14 **Client Sample Name:** HA7-3.0, 2/7/2023 3:10:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	460	120	EPA-8015B/FFP	ND	S05	1
TPH - Diesel (FFP)	ND	mg/kg	230	51	EPA-8015B/FFP	ND	S05	1
TPH - Hydraulic Oil / Motor Oil	**4400**	**mg/kg**	**460**	**160**	**EPA-8015B/FFP**	ND	**A57,S05**	1
Tetracosane (Surrogate)	82.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		S05	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	03/03/23 19:35	03/07/23 17:13	BUP	GC-2	23.077	B161414	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 2303085-15 | **Client Sample Name:** HA6-0.5, 2/7/2023 3:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Aldrin	ND	mg/kg	0.0050	0.00018	EPA-8081A	1.4	A10	1
alpha-BHC	ND	mg/kg	0.0050	0.00038	EPA-8081A		A10	1
beta-BHC	ND	mg/kg	0.0050	0.00048	EPA-8081A		A10	1
delta-BHC	ND	mg/kg	0.0050	0.00037	EPA-8081A		A10	1
gamma-BHC (Lindane)	ND	mg/kg	0.0050	0.00018	EPA-8081A	4.0	A10	1
Chlordane (Technical)	ND	mg/kg	0.50	0.010	EPA-8081A	2.5	A10	1
4,4'-DDD	ND	mg/kg	0.0050	0.00064	EPA-8081A	1.0	A10	1
4,4'-DDE	**0.013**	**mg/kg**	**0.0050**	**0.00095**	**EPA-8081A**	1.0	**A10**	1
4,4'-DDT	**0.034**	**mg/kg**	**0.0050**	**0.00040**	**EPA-8081A**	1.0	**A10**	1
Dieldrin	ND	mg/kg	0.0050	0.00036	EPA-8081A	8.0	A10	1
Endosulfan I	ND	mg/kg	0.0050	0.00020	EPA-8081A		A10	1
Endosulfan II	ND	mg/kg	0.0050	0.00034	EPA-8081A		A10	1
Endosulfan sulfate	ND	mg/kg	0.0050	0.00026	EPA-8081A		A10	1
Endrin	ND	mg/kg	0.0050	0.00065	EPA-8081A	0.2	A10	1
Endrin aldehyde	ND	mg/kg	0.0050	0.00018	EPA-8081A		A10	1
Heptachlor	ND	mg/kg	0.0050	0.00086	EPA-8081A	4.7	A10	1
Heptachlor epoxide	ND	mg/kg	0.0050	0.00017	EPA-8081A		A10	1
Methoxychlor	ND	mg/kg	0.0050	0.00094	EPA-8081A	100	A10	1
Toxaphene	ND	mg/kg	0.50	0.014	EPA-8081A	5	A10	1
TCMX (Surrogate)	30.7	%	20 - 130 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	21.9	%	40 - 130 (LCL - UCL)		EPA-8081A		S09	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8081A	02/17/23 20:00	02/20/23 21:12	HKS	GC-17	9.967	B160370	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-15 | **Client Sample Name:** HA6-0.5, 2/7/2023 3:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Benzene	**0.0035**	**mg/kg**	**0.011**	**0.0014**	**EPA-8260B**		**J**	1
Bromobenzene	ND	mg/kg	0.011	0.0019	EPA-8260B			1
Bromochloromethane	ND	mg/kg	0.011	0.0017	EPA-8260B			1
Bromodichloromethane	ND	mg/kg	0.011	0.0017	EPA-8260B			1
Bromoform	ND	mg/kg	0.011	0.0015	EPA-8260B			1
Bromomethane	ND	mg/kg	0.011	0.0036	EPA-8260B			1
n-Butylbenzene	ND	mg/kg	0.011	0.0016	EPA-8260B			1
sec-Butylbenzene	ND	mg/kg	0.011	0.0015	EPA-8260B			1
tert-Butylbenzene	ND	mg/kg	0.011	0.0018	EPA-8260B			1
Carbon tetrachloride	ND	mg/kg	0.011	0.0017	EPA-8260B			1
Chlorobenzene	ND	mg/kg	0.011	0.0016	EPA-8260B			1
Chloroethane	ND	mg/kg	0.011	0.0023	EPA-8260B			1
Chloroform	ND	mg/kg	0.011	0.0019	EPA-8260B			1
Chloromethane	ND	mg/kg	0.011	0.0023	EPA-8260B			1
2-Chlorotoluene	ND	mg/kg	0.011	0.0019	EPA-8260B			1
4-Chlorotoluene	ND	mg/kg	0.011	0.0015	EPA-8260B			1
Dibromochloromethane	ND	mg/kg	0.011	0.0017	EPA-8260B			1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.011	0.0020	EPA-8260B			1
1,2-Dibromoethane	ND	mg/kg	0.011	0.0017	EPA-8260B			1
Dibromomethane	ND	mg/kg	0.011	0.0030	EPA-8260B			1
1,2-Dichlorobenzene	ND	mg/kg	0.011	0.0017	EPA-8260B			1
1,3-Dichlorobenzene	ND	mg/kg	0.011	0.0016	EPA-8260B			1
1,4-Dichlorobenzene	ND	mg/kg	0.011	0.0016	EPA-8260B			1
Dichlorodifluoromethane	ND	mg/kg	0.011	0.0017	EPA-8260B			1
1,1-Dichloroethane	ND	mg/kg	0.011	0.0014	EPA-8260B			1
1,2-Dichloroethane	ND	mg/kg	0.011	0.0016	EPA-8260B			1
1,1-Dichloroethene	ND	mg/kg	0.011	0.0023	EPA-8260B			1
cis-1,2-Dichloroethene	ND	mg/kg	0.011	0.0011	EPA-8260B			1
trans-1,2-Dichloroethene	ND	mg/kg	0.011	0.0079	EPA-8260B			1
1,2-Dichloropropane	ND	mg/kg	0.011	0.0017	EPA-8260B			1
1,3-Dichloropropane	ND	mg/kg	0.011	0.0014	EPA-8260B			1
2,2-Dichloropropane	ND	mg/kg	0.011	0.0014	EPA-8260B			1
1,1-Dichloropropene	ND	mg/kg	0.011	0.0014	EPA-8260B			1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-15 | **Client Sample Name:** HA6-0.5, 2/7/2023 3:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.011	0.0012	EPA-8260B			1
trans-1,3-Dichloropropene	ND	mg/kg	0.011	0.0014	EPA-8260B			1
Ethylbenzene	ND	mg/kg	0.011	0.0015	EPA-8260B			1
Hexachlorobutadiene	ND	mg/kg	0.011	0.0014	EPA-8260B			1
Isopropylbenzene	ND	mg/kg	0.011	0.0017	EPA-8260B			1
p-Isopropyltoluene	ND	mg/kg	0.011	0.0013	EPA-8260B			1
Methylene chloride	ND	mg/kg	0.021	0.0023	EPA-8260B			1
Methyl t-butyl ether	ND	mg/kg	0.011	0.0012	EPA-8260B			1
Naphthalene	ND	mg/kg	0.011	0.0021	EPA-8260B			1
n-Propylbenzene	ND	mg/kg	0.011	0.0015	EPA-8260B			1
Styrene	ND	mg/kg	0.011	0.0013	EPA-8260B			1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.011	0.0020	EPA-8260B			1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.011	0.0018	EPA-8260B			1
Tetrachloroethene	ND	mg/kg	0.011	0.0021	EPA-8260B			1
Toluene	**0.0032**	**mg/kg**	**0.011**	**0.0015**	**EPA-8260B**		**J**	1
1,2,3-Trichlorobenzene	ND	mg/kg	0.011	0.0032	EPA-8260B			1
1,2,4-Trichlorobenzene	ND	mg/kg	0.011	0.0030	EPA-8260B			1
1,1,1-Trichloroethane	ND	mg/kg	0.011	0.0014	EPA-8260B			1
1,1,2-Trichloroethane	ND	mg/kg	0.011	0.0020	EPA-8260B			1
Trichloroethene	ND	mg/kg	0.011	0.0016	EPA-8260B	2040		1
Trichlorofluoromethane	ND	mg/kg	0.011	0.0032	EPA-8260B			1
1,2,3-Trichloropropane	ND	mg/kg	0.011	0.0040	EPA-8260B			1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.011	0.0021	EPA-8260B			1
1,2,4-Trimethylbenzene	ND	mg/kg	0.011	0.0017	EPA-8260B			1
1,3,5-Trimethylbenzene	ND	mg/kg	0.011	0.0014	EPA-8260B			1
Vinyl chloride	ND	mg/kg	0.011	0.0013	EPA-8260B			1
Total Xylenes	ND	mg/kg	0.021	0.0053	EPA-8260B			1
p- & m-Xylenes	ND	mg/kg	0.011	0.0032	EPA-8260B			1
o-Xylene	ND	mg/kg	0.011	0.0020	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogate)	116	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	103	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2303085-15 | **Client Sample Name:** HA6-0.5, 2/7/2023 3:20:00PM, SAWYER CARMAN

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	02/13/23 09:00	02/14/23 12:24	BYM	MS-V18	2.128	B159671	EPA 5035 Soil MS

DCN = Data Continuation Number

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 2303085-15 | **Client Sample Name:** HA6-0.5, 2/7/2023 3:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Acenaphthene	ND	mg/kg	0.030	0.013	EPA-8270C-SIM	ND	A10	1
Acenaphthylene	ND	mg/kg	0.030	0.0092	EPA-8270C-SIM	ND	A10	1
Anthracene	ND	mg/kg	0.030	0.0081	EPA-8270C-SIM	ND	A10	1
Benzo[a]anthracene	ND	mg/kg	0.030	0.0096	EPA-8270C-SIM	ND	A10	1
Benzo[b]fluoranthene	ND	mg/kg	0.030	0.0079	EPA-8270C-SIM	ND	A10	1
Benzo[k]fluoranthene	ND	mg/kg	0.030	0.011	EPA-8270C-SIM	ND	A10	1
Benzo[a]pyrene	ND	mg/kg	0.030	0.0078	EPA-8270C-SIM	ND	A10	1
Benzo[g,h,i]perylene	ND	mg/kg	0.030	0.0072	EPA-8270C-SIM	ND	A10	1
Chrysene	ND	mg/kg	0.030	0.011	EPA-8270C-SIM	ND	A10	1
Dibenzo[a,h]anthracene	ND	mg/kg	0.030	0.0048	EPA-8270C-SIM	ND	A10	1
Fluoranthene	ND	mg/kg	0.030	0.0075	EPA-8270C-SIM	ND	A10	1
Fluorene	ND	mg/kg	0.030	0.0097	EPA-8270C-SIM	ND	A10	1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.030	0.0047	EPA-8270C-SIM	ND	A10	1
Naphthalene	ND	mg/kg	0.030	0.0090	EPA-8270C-SIM	ND	A10	1
Phenanthrene	ND	mg/kg	0.030	0.0086	EPA-8270C-SIM	ND	A10	1
Pyrene	ND	mg/kg	0.030	0.012	EPA-8270C-SIM	ND	A10	1
Nitrobenzene-d5 (Surrogate)	81.2	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrogate)	75.5	%	40 - 130 (LCL - UCL)		EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrogate)	51.4	%	30 - 130 (LCL - UCL)		EPA-8270C-SIM			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8270C-SIM	02/13/23 19:00	02/21/23 20:36	OLH	MS-B7	9.836	B159873	EPA 3550B

DCN = Data Continuation Number

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-15 **Client Sample Name:** HA6-0.5, 2/7/2023 3:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	100	25	EPA-8015B/FFP	ND	A10	1
TPH - Diesel (FFP)	**79**	**mg/kg**	**50**	**11**	**EPA-8015B/FFP**	ND	**A10,A52**	1
TPH - Hydraulic Oil / Motor Oil	**410**	**mg/kg**	**100**	**35**	**EPA-8015B/FFP**	ND	**A10,A57**	1
Tetracosane (Surrogate)	51.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A10	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/24/23 20:00	02/27/23 22:00	BUP	GC-2	5.068	B161016	EPA 3550B

DCN = Data Continuation Number

Rincon Consultants-Ventura
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Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Total Petroleum Hydrocarbons

BCL Sample ID: 2303085-15 | **Client Sample Name:** HA6-0.5, 2/7/2023 3:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	400	100	EPA-8015B/FFP	ND	A10	1
TPH - Diesel (FFP)	**230**	**mg/kg**	**200**	**44**	**EPA-8015B/FFP**	ND	**A10,A52**	1
TPH - Motor Oil	**600**	**mg/kg**	**400**	**140**	**EPA-8015B/FFP**	ND	**A10,A57**	1
Tetracosane (Surrogate)	0	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP		A10,A17	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	02/17/23 21:00	02/20/23 22:15	BUP	GC-2	19.934	B160385	EPA 3550B

DCN = Data Continuation Number

Total Concentrations (TTLC)

BCL Sample ID: 2303085-15 **Client Sample Name:** HA6-0.5, 2/7/2023 3:20:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	DCN
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	500		1
Arsenic	**3.2**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	500		1
Barium	**73**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	10000		1
Beryllium	**0.22**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	75	**J**	1
Cadmium	**0.49**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	100	**J**	1
Chromium	**9.6**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	2500		1
Cobalt	**4.0**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	8000		1
Copper	**9.8**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	2500		1
Lead	**5.4**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	1000		1
Mercury	**0.32**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	20		2
Molybdenum	**0.27**	**mg/kg**	**2.5**	**0.050**	**EPA-6010B**	3500	**J**	1
Nickel	**10**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	2000		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	100		1
Silver	**0.13**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	500	**J**	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	700		1
Vanadium	**19**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	2400		1
Zinc	**35**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	5000		3

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	02/13/23 07:30	02/14/23 20:23	DVS	PE-OP3	0.980	B159719	EPA 3050B
2	EPA-7471A	02/20/23 08:15	02/20/23 14:28	TMT	CETAC3	0.992	B160214	EPA 7471A
3	EPA-6010B	02/13/23 07:30	02/16/23 17:33	DVS	PE-OP3	0.980	B159719	EPA 3050B

DCN = Data Continuation Number

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

BCL Sample ID: 2303085-16 **Client Sample Name:** HA6-3.0, 2/7/2023 3:55:00PM, SAWYER CARMAN

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND	S05	1
TPH - Diesel (FFP)	ND	mg/kg	10	2.2	EPA-8015B/FFP	ND	S05	1
TPH - Hydraulic Oil / Motor Oil	**37**	**mg/kg**	**20**	**7.0**	**EPA-8015B/FFP**	ND	**A57,S05**	1
Tetracosane (Surrogate)	49.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		S05	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	03/03/23 19:35	03/07/23 17:36	BUP	GC-2	1.010	B161414	EPA 3550B

DCN = Data Continuation Number

Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Method Blank Analysis

QC Batch ID: B160370

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
Aldrin	B160370-BLK1	ND	mg/kg	0.00050	0.000018		1
alpha-BHC	B160370-BLK1	ND	mg/kg	0.00050	0.000038		1
beta-BHC	B160370-BLK1	ND	mg/kg	0.00050	0.000048		1
delta-BHC	B160370-BLK1	ND	mg/kg	0.00050	0.000037		1
gamma-BHC (Lindane)	B160370-BLK1	ND	mg/kg	0.00050	0.000018		1
Chlordane (Technical)	B160370-BLK1	ND	mg/kg	0.050	0.0010		1
4,4'-DDD	B160370-BLK1	ND	mg/kg	0.00050	0.000064		1
4,4'-DDE	B160370-BLK1	ND	mg/kg	0.00050	0.000095		1
4,4'-DDT	B160370-BLK1	ND	mg/kg	0.00050	0.000040		1
Dieldrin	B160370-BLK1	ND	mg/kg	0.00050	0.000036		1
Endosulfan I	B160370-BLK1	ND	mg/kg	0.00050	0.000020		1
Endosulfan II	B160370-BLK1	ND	mg/kg	0.00050	0.000034		1
Endosulfan sulfate	B160370-BLK1	ND	mg/kg	0.00050	0.000026		1
Endrin	B160370-BLK1	ND	mg/kg	0.00050	0.000065		1
Endrin aldehyde	B160370-BLK1	ND	mg/kg	0.00050	0.000018		1
Heptachlor	B160370-BLK1	ND	mg/kg	0.00050	0.000086		1
Heptachlor epoxide	B160370-BLK1	ND	mg/kg	0.00050	0.000017		1
Methoxychlor	B160370-BLK1	ND	mg/kg	0.00050	0.000094		1
Toxaphene	B160370-BLK1	ND	mg/kg	0.050	0.0014		1
TCMX (Surrogate)	**B160370-BLK1**	**87.4**	%	**20 - 130 (LCL - UCL)**			1
Decachlorobiphenyl (Surrogate)	**B160370-BLK1**	**78.9**	%	**40 - 130 (LCL - UCL)**			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B160370-BLK1	PB	EPA-8081A	02/17/23	02/20/23 16:01	HKS	GC-17	1.003

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180 North Ashwood Avenue
Ventura, CA 93003

Reported: 03/15/2023 16:41
Project: 22-13765
Project Number: [none]
Project Manager: Scott English

Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B160370											
Aldrin	B160370-BS1	LCS	0.0046810	0.0050847	mg/kg	92.1		70 - 130			1
gamma-BHC (Lindane)	B160370-BS1	LCS	0.0049905	0.0050847	mg/kg	98.1		60 - 140			1
4,4'-DDT	B160370-BS1	LCS	0.0042644	0.0050847	mg/kg	83.9		60 - 140			1
Dieldrin	B160370-BS1	LCS	0.0046600	0.0050847	mg/kg	91.6		70 - 130			1
Endrin	B160370-BS1	LCS	0.0045037	0.0050847	mg/kg	88.6		60 - 140			1
Heptachlor	B160370-BS1	LCS	0.0048746	0.0050847	mg/kg	95.9		60 - 140			1
TCMX (Surrogate)	B160370-BS1	LCS	0.0092359	0.010169	mg/kg	90.8		20 - 130			1
Decachlorobiphenyl (Surrogate)	B160370-BS1	LCS	0.014920	0.020339	mg/kg	73.4		40 - 130			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B160370-BS1	LCS	EPA-8081A	02/17/23	02/20/23 16:18	HKS	GC-17	1.017

Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Precision & Accuracy

QC Batch ID: B160370 Used client sample: Y - Description: HA6-0.5, 02/07/2023 15:20

									Control Limits	Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals	R#
Aldrin	MS	2303085-15	ND	0.0022862	0.0049342	mg/kg		46.3		50 - 140	J,Q03	1
	MSD	2303085-15	ND	0.0029122	0.0050676	mg/kg	24.1	57.5	30	50 - 140	J	2
gamma-BHC (Lindane)	MS	2303085-15	ND	0.0026678	0.0049342	mg/kg		54.1		50 - 140	J	1
	MSD	2303085-15	ND	0.0029020	0.0050676	mg/kg	8.4	57.3	30	50 - 140	J	2
4,4'-DDT	MS	2303085-15	0.034306	0.076579	0.0049342	mg/kg		857		50 - 140	Q03	1
	MSD	2303085-15	0.034306	0.069814	0.0050676	mg/kg	9.2	701	30	50 - 140	Q03	2
Dieldrin	MS	2303085-15	ND	0.042918	0.0049342	mg/kg		870		40 - 140	Q03	1
	MSD	2303085-15	ND	0.0027128	0.0050676	mg/kg	176	53.5	30	40 - 140	J,Q02	2
Endrin	MS	2303085-15	ND	0.013178	0.0049342	mg/kg		267		50 - 150	Q03	1
	MSD	2303085-15	ND	0.0047399	0.0050676	mg/kg	94.2	93.5	30	50 - 150	J,Q02	2
Heptachlor	MS	2303085-15	ND	0.0032763	0.0049342	mg/kg		66.4		60 - 140	J	1
	MSD	2303085-15	ND	0.0027568	0.0050676	mg/kg	17.2	54.4	30	60 - 140	J,Q03	2
TCMX (Surrogate)	MS	2303085-15	ND	0.0053586	0.0098684	mg/kg		54.3		20 - 130		1
	MSD	2303085-15	ND	0.0044189	0.010135	mg/kg	19.2	43.6		20 - 130		2
Decachlorobiphenyl (Surrogate)	MS	2303085-15	ND	0.0063421	0.019737	mg/kg		32.1		40 - 130	S09	1
	MSD	2303085-15	ND	0.0053446	0.020270	mg/kg	17.1	26.4		40 - 130	S09	2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B160370-MS1	MS	EPA-8081A	02/17/23	02/20/23 17:16	HKS	GC-17	9.868
2	B160370-MSD1	MSD	EPA-8081A	02/17/23	02/20/23 17:33	HKS	GC-17	10.135

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B159671							
Benzene	B159671-BLK1	ND	mg/kg	0.0050	0.00067		1
Bromobenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00087		1
Bromochloromethane	B159671-BLK1	ND	mg/kg	0.0050	0.00081		1
Bromodichloromethane	B159671-BLK1	ND	mg/kg	0.0050	0.00078		1
Bromoform	B159671-BLK1	ND	mg/kg	0.0050	0.00070		1
Bromomethane	B159671-BLK1	ND	mg/kg	0.0050	0.0017		1
n-Butylbenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00076		1
sec-Butylbenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00071		1
tert-Butylbenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00085		1
Carbon tetrachloride	B159671-BLK1	ND	mg/kg	0.0050	0.00078		1
Chlorobenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00077		1
Chloroethane	B159671-BLK1	ND	mg/kg	0.0050	0.0011		1
Chloroform	B159671-BLK1	ND	mg/kg	0.0050	0.00090		1
Chloromethane	B159671-BLK1	ND	mg/kg	0.0050	0.0011		1
2-Chlorotoluene	B159671-BLK1	ND	mg/kg	0.0050	0.00087		1
4-Chlorotoluene	B159671-BLK1	ND	mg/kg	0.0050	0.00070		1
Dibromochloromethane	B159671-BLK1	ND	mg/kg	0.0050	0.00080		1
1,2-Dibromo-3-chloropropane	B159671-BLK1	ND	mg/kg	0.0050	0.00096		1
1,2-Dibromoethane	B159671-BLK1	ND	mg/kg	0.0050	0.00082		1
Dibromomethane	B159671-BLK1	ND	mg/kg	0.0050	0.0014		1
1,2-Dichlorobenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00079		1
1,3-Dichlorobenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00073		1
1,4-Dichlorobenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00073		1
Dichlorodifluoromethane	B159671-BLK1	ND	mg/kg	0.0050	0.00079		1
1,1-Dichloroethane	B159671-BLK1	ND	mg/kg	0.0050	0.00064		1
1,2-Dichloroethane	B159671-BLK1	ND	mg/kg	0.0050	0.00073		1
1,1-Dichloroethene	B159671-BLK1	ND	mg/kg	0.0050	0.0011		1
cis-1,2-Dichloroethene	B159671-BLK1	ND	mg/kg	0.0050	0.00054		1
trans-1,2-Dichloroethene	B159671-BLK1	ND	mg/kg	0.0050	0.0037		1
1,2-Dichloropropane	B159671-BLK1	ND	mg/kg	0.0050	0.00080		1
1,3-Dichloropropane	B159671-BLK1	ND	mg/kg	0.0050	0.00067		1
2,2-Dichloropropane	B159671-BLK1	ND	mg/kg	0.0050	0.00067		1
1,1-Dichloropropene	B159671-BLK1	ND	mg/kg	0.0050	0.00067		1
cis-1,3-Dichloropropene	B159671-BLK1	ND	mg/kg	0.0050	0.00058		1

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Method Blank Analysis

QC Batch ID: B159671

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
trans-1,3-Dichloropropene	B159671-BLK1	ND	mg/kg	0.0050	0.00066		1
Ethylbenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00069		1
Hexachlorobutadiene	B159671-BLK1	ND	mg/kg	0.0050	0.00067		1
Isopropylbenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00080		1
p-Isopropyltoluene	B159671-BLK1	ND	mg/kg	0.0050	0.00059		1
Methylene chloride	B159671-BLK1	ND	mg/kg	0.010	0.0011		1
Methyl t-butyl ether	B159671-BLK1	ND	mg/kg	0.0050	0.00056		1
Naphthalene	B159671-BLK1	ND	mg/kg	0.0050	0.00099		1
n-Propylbenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00071		1
Styrene	B159671-BLK1	ND	mg/kg	0.0050	0.00062		1
1,1,1,2-Tetrachloroethane	B159671-BLK1	ND	mg/kg	0.0050	0.00095		1
1,1,2,2-Tetrachloroethane	B159671-BLK1	ND	mg/kg	0.0050	0.00084		1
Tetrachloroethene	B159671-BLK1	ND	mg/kg	0.0050	0.00097		1
Toluene	B159671-BLK1	ND	mg/kg	0.0050	0.00069		1
1,2,3-Trichlorobenzene	B159671-BLK1	ND	mg/kg	0.0050	0.0015		1
1,2,4-Trichlorobenzene	B159671-BLK1	ND	mg/kg	0.0050	0.0014		1
1,1,1-Trichloroethane	B159671-BLK1	ND	mg/kg	0.0050	0.00067		1
1,1,2-Trichloroethane	B159671-BLK1	ND	mg/kg	0.0050	0.00094		1
Trichloroethene	B159671-BLK1	ND	mg/kg	0.0050	0.00074		1
Trichlorofluoromethane	B159671-BLK1	ND	mg/kg	0.0050	0.0015		1
1,2,3-Trichloropropane	B159671-BLK1	ND	mg/kg	0.0050	0.0019		1
1,1,2-Trichloro-1,2,2-trifluoroethane	B159671-BLK1	ND	mg/kg	0.0050	0.0010		1
1,2,4-Trimethylbenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00080		1
1,3,5-Trimethylbenzene	B159671-BLK1	ND	mg/kg	0.0050	0.00066		1
Vinyl chloride	B159671-BLK1	ND	mg/kg	0.0050	0.00059		1
Total Xylenes	B159671-BLK1	ND	mg/kg	0.010	0.0025		1
p- & m-Xylenes	B159671-BLK1	ND	mg/kg	0.0050	0.0015		1
o-Xylene	B159671-BLK1	ND	mg/kg	0.0050	0.00093		1
1,2-Dichloroethane-d4 (Surrogate)	**B159671-BLK1**	**89.8**	%	**70 - 121 (LCL - UCL)**			1
Toluene-d8 (Surrogate)	**B159671-BLK1**	**98.9**	%	**81 - 117 (LCL - UCL)**			1
4-Bromofluorobenzene (Surrogate)	**B159671-BLK1**	**99.8**	%	**74 - 121 (LCL - UCL)**			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B159671-BLK1	PB	EPA-8260B	02/10/23	02/10/23 10:40	BYM	MS-V18	1

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Laboratory Control Sample

								Control Limits			
Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals	Run #
QC Batch ID: B159671											
Benzene	B159671-BS1	LCS	0.13234	0.12500	mg/kg	106		70 - 130			1
Bromodichloromethane	B159671-BS1	LCS	0.13390	0.12500	mg/kg	107		70 - 130			1
Chlorobenzene	B159671-BS1	LCS	0.12584	0.12500	mg/kg	101		70 - 130			1
Chloroethane	B159671-BS1	LCS	0.12244	0.12500	mg/kg	98.0		70 - 130			1
1,4-Dichlorobenzene	B159671-BS1	LCS	0.13288	0.12500	mg/kg	106		70 - 130			1
1,1-Dichloroethane	B159671-BS1	LCS	0.12709	0.12500	mg/kg	102		70 - 130			1
1,1-Dichloroethene	B159671-BS1	LCS	0.12402	0.12500	mg/kg	99.2		70 - 130			1
Toluene	B159671-BS1	LCS	0.13087	0.12500	mg/kg	105		70 - 130			1
Trichloroethene	B159671-BS1	LCS	0.12952	0.12500	mg/kg	104		70 - 130			1
1,2-Dichloroethane-d4 (Surrogate)	B159671-BS1	LCS	0.045290	0.050000	mg/kg	90.6		70 - 121			1
Toluene-d8 (Surrogate)	B159671-BS1	LCS	0.049940	0.050000	mg/kg	99.9		81 - 117			1
4-Bromofluorobenzene (Surrogate)	B159671-BS1	LCS	0.049830	0.050000	mg/kg	99.7		74 - 121			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B159671-BS1	LCS	EPA-8260B	02/10/23	02/10/23 11:02	BYM	MS-V18	1

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Precision & Accuracy

QC Batch ID: B159671 Used client sample: N

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
Benzene	MS	2302953-01	ND	0.13536	0.12500	mg/kg		108		70 - 130		1
	MSD	2302953-01	ND	0.13541	0.12500	mg/kg	0.0	108	20	70 - 130		2
Bromodichloromethane	MS	2302953-01	ND	0.13567	0.12500	mg/kg		109		70 - 130		1
	MSD	2302953-01	ND	0.13505	0.12500	mg/kg	0.5	108	20	70 - 130		2
Chlorobenzene	MS	2302953-01	ND	0.12335	0.12500	mg/kg		98.7		70 - 130		1
	MSD	2302953-01	ND	0.12682	0.12500	mg/kg	2.8	101	20	70 - 130		2
Chloroethane	MS	2302953-01	ND	0.12954	0.12500	mg/kg		104		70 - 130		1
	MSD	2302953-01	ND	0.12695	0.12500	mg/kg	2.0	102	20	70 - 130		2
1,4-Dichlorobenzene	MS	2302953-01	ND	0.12431	0.12500	mg/kg		99.4		70 - 130		1
	MSD	2302953-01	ND	0.12887	0.12500	mg/kg	3.6	103	20	70 - 130		2
1,1-Dichloroethane	MS	2302953-01	ND	0.13034	0.12500	mg/kg		104		70 - 130		1
	MSD	2302953-01	ND	0.12915	0.12500	mg/kg	0.9	103	20	70 - 130		2
1,1-Dichloroethene	MS	2302953-01	ND	0.12837	0.12500	mg/kg		103		70 - 130		1
	MSD	2302953-01	ND	0.12822	0.12500	mg/kg	0.1	103	20	70 - 130		2
Toluene	MS	2302953-01	ND	0.13283	0.12500	mg/kg		106		70 - 130		1
	MSD	2302953-01	ND	0.13206	0.12500	mg/kg	0.6	106	20	70 - 130		2
Trichloroethene	MS	2302953-01	ND	0.13167	0.12500	mg/kg		105		70 - 130		1
	MSD	2302953-01	ND	0.13153	0.12500	mg/kg	0.1	105	20	70 - 130		2
1,2-Dichloroethane-d4 (Surrogate)	MS	2302953-01	ND	0.045760	0.050000	mg/kg		91.5		70 - 121		1
	MSD	2302953-01	ND	0.044520	0.050000	mg/kg	2.7	89.0		70 - 121		2
Toluene-d8 (Surrogate)	MS	2302953-01	ND	0.049760	0.050000	mg/kg		99.5		81 - 117		1
	MSD	2302953-01	ND	0.049520	0.050000	mg/kg	0.5	99.0		81 - 117		2
4-Bromofluorobenzene (Surrogate)	MS	2302953-01	ND	0.048600	0.050000	mg/kg		97.2		74 - 121		1
	MSD	2302953-01	ND	0.050010	0.050000	mg/kg	2.9	100		74 - 121		2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B159671-MS1	MS	EPA-8260B	02/10/23	02/10/23 11:24	BYM	MS-V18	1
2	B159671-MSD1	MSD	EPA-8260B	02/10/23	02/10/23 11:46	BYM	MS-V18	1

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B159873							
Acenaphthene	B159873-BLK1	ND	mg/kg	0.0030	0.0013		1
Acenaphthylene	B159873-BLK1	ND	mg/kg	0.0030	0.00092		1
Anthracene	B159873-BLK1	ND	mg/kg	0.0030	0.00081		1
Benzo[a]anthracene	B159873-BLK1	ND	mg/kg	0.0030	0.00096		1
Benzo[b]fluoranthene	B159873-BLK1	ND	mg/kg	0.0030	0.00079		1
Benzo[k]fluoranthene	B159873-BLK1	ND	mg/kg	0.0030	0.0011		1
Benzo[a]pyrene	B159873-BLK1	ND	mg/kg	0.0030	0.00078		1
Benzo[g,h,i]perylene	B159873-BLK1	ND	mg/kg	0.0030	0.00072		1
Chrysene	B159873-BLK1	ND	mg/kg	0.0030	0.0011		1
Dibenzo[a,h]anthracene	B159873-BLK1	ND	mg/kg	0.0030	0.00048		1
Fluoranthene	B159873-BLK1	ND	mg/kg	0.0030	0.00075		1
Fluorene	B159873-BLK1	ND	mg/kg	0.0030	0.00097		1
Indeno[1,2,3-cd]pyrene	B159873-BLK1	ND	mg/kg	0.0030	0.00047		1
Naphthalene	B159873-BLK1	ND	mg/kg	0.0030	0.00090		1
Phenanthrene	B159873-BLK1	ND	mg/kg	0.0030	0.00086		1
Pyrene	B159873-BLK1	ND	mg/kg	0.0030	0.0012		1
Nitrobenzene-d5 (Surrogate)	**B159873-BLK1**	**77.2**	%	**30 - 130 (LCL - UCL)**			1
2-Fluorobiphenyl (Surrogate)	**B159873-BLK1**	**82.1**	%	**40 - 130 (LCL - UCL)**			1
p-Terphenyl-d14 (Surrogate)	**B159873-BLK1**	**70.9**	%	**30 - 130 (LCL - UCL)**			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B159873-BLK1	PB	EPA-8270C-SIM	02/13/23	02/14/23 12:18	OLH	MS-B7	1.017

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B159873											
Acenaphthene	B159873-BS1	LCS	0.027385	0.033670	mg/kg	81.3		60 - 130			1
Acenaphthylene	B159873-BS1	LCS	0.028144	0.033670	mg/kg	83.6		60 - 130			1
Anthracene	B159873-BS1	LCS	0.028349	0.033670	mg/kg	84.2		60 - 130			1
Benzo[a]anthracene	B159873-BS1	LCS	0.032567	0.033670	mg/kg	96.7		60 - 130			1
Benzo[b]fluoranthene	B159873-BS1	LCS	0.030590	0.033670	mg/kg	90.9		50 - 130			1
Benzo[k]fluoranthene	B159873-BS1	LCS	0.028510	0.033670	mg/kg	84.7		60 - 130			1
Benzo[a]pyrene	B159873-BS1	LCS	0.026150	0.033670	mg/kg	77.7		60 - 130			1
Benzo[g,h,i]perylene	B159873-BS1	LCS	0.023619	0.033670	mg/kg	70.1		50 - 130			1
Chrysene	B159873-BS1	LCS	0.027554	0.033670	mg/kg	81.8		50 - 130			1
Dibenzo[a,h]anthracene	B159873-BS1	LCS	0.023663	0.033670	mg/kg	70.3		50 - 130			1
Fluoranthene	B159873-BS1	LCS	0.029491	0.033670	mg/kg	87.6		60 - 130			1
Fluorene	B159873-BS1	LCS	0.028593	0.033670	mg/kg	84.9		50 - 130			1
Indeno[1,2,3-cd]pyrene	B159873-BS1	LCS	0.023950	0.033670	mg/kg	71.1		50 - 130			1
Naphthalene	B159873-BS1	LCS	0.026336	0.033670	mg/kg	78.2		50 - 130			1
Phenanthrene	B159873-BS1	LCS	0.026942	0.033670	mg/kg	80.0		50 - 130			1
Pyrene	B159873-BS1	LCS	0.032555	0.033670	mg/kg	96.7		50 - 130			1
Nitrobenzene-d5 (Surrogate)	B159873-BS1	LCS	0.10465	0.13468	mg/kg	77.7		30 - 130			1
2-Fluorobiphenyl (Surrogate)	B159873-BS1	LCS	0.10546	0.13468	mg/kg	78.3		40 - 130			1
p-Terphenyl-d14 (Surrogate)	B159873-BS1	LCS	0.084473	0.13468	mg/kg	62.7		30 - 130			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B159873-BS1	LCS	EPA-8270C-SIM	02/13/23	02/14/23 12:40	OLH	MS-B7	1.010

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

Quality Control Report - Precision & Accuracy

									Control Limits			
Constituent	**Type**	**Source Sample ID**	**Source Result**	**Result**	**Spike Added**	**Units**	**RPD**	**Percent Recovery**	**RPD**	**Percent Recovery**	**Lab Quals**	**R#**
QC Batch ID: B159873	Used client sample: N											
Acenaphthene	MS	**2302830-02**	**ND**	**ND**	**0.033557**	**mg/kg**		**1.1**		**50 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**ND**	**0.033445**	**mg/kg**	**0.4**	**1.1**	**30**	**50 - 130**	**Q03**	2
Acenaphthylene	MS	**2302830-02**	**ND**	**ND**	**0.033557**	**mg/kg**		**0.5**		**50 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**ND**	**0.033445**	**mg/kg**	**8.7**	**0.5**	**30**	**50 - 130**	**Q03**	2
Anthracene	MS	**2302830-02**	**ND**	**ND**	**0.033557**	**mg/kg**		**0.7**		**50 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**ND**	**0.033445**	**mg/kg**	**9.0**	**0.7**	**30**	**50 - 130**	**Q03**	2
Benzo[a]anthracene	MS	**2302830-02**	**ND**	**ND**	**0.033557**	**mg/kg**		**2.2**		**50 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**ND**	**0.033445**	**mg/kg**	**0.3**	**2.2**	**30**	**50 - 130**	**Q03**	2
Benzo[b]fluoranthene	MS	**2302830-02**	**ND**	**0.0045782**	**0.033557**	**mg/kg**		**13.6**		**40 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**0.0045689**	**0.033445**	**mg/kg**	**0.2**	**13.7**	**30**	**40 - 130**	**Q03**	2
Benzo[k]fluoranthene	MS	**2302830-02**	**ND**	**ND**	**0.033557**	**mg/kg**		**2.9**		**40 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**ND**	**0.033445**	**mg/kg**	**2.1**	**2.8**	**30**	**40 - 130**	**Q03**	2
Benzo[a]pyrene	MS	**2302830-02**	**ND**	**0.0043601**	**0.033557**	**mg/kg**		**13.0**		**40 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**0.0043592**	**0.033445**	**mg/kg**	**0.0**	**13.0**	**30**	**40 - 130**	**Q03**	2
Benzo[g,h,i]perylene	MS	**2302830-02**	**ND**	**0.0028443**	**0.033557**	**mg/kg**		**8.5**		**40 - 130**	**J,Q03**	1
	MSD	**2302830-02**	**ND**	**0.0028398**	**0.033445**	**mg/kg**	**0.2**	**8.5**	**30**	**40 - 130**	**J,Q03**	2
Chrysene	MS	**2302830-02**	**ND**	**ND**	**0.033557**	**mg/kg**		**1.0**		**40 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**ND**	**0.033445**	**mg/kg**	**1.7**	**1.0**	**30**	**40 - 130**	**Q03**	2
Dibenzo[a,h]anthracene	MS	**2302830-02**	**ND**	**0.0042574**	**0.033557**	**mg/kg**		**12.7**		**40 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**0.0042391**	**0.033445**	**mg/kg**	**0.4**	**12.7**	**30**	**40 - 130**	**Q03**	2
Fluoranthene	MS	**2302830-02**	**ND**	**ND**	**0.033557**	**mg/kg**		**1.0**		**40 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**ND**	**0.033445**	**mg/kg**	**2.3**	**1.0**	**30**	**40 - 130**	**Q03**	2
Fluorene	MS	**2302830-02**	**ND**	**ND**	**0.033557**	**mg/kg**		**0.7**		**40 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**ND**	**0.033445**	**mg/kg**	**3.4**	**0.7**	**30**	**40 - 130**	**Q03**	2
Indeno[1,2,3-cd]pyrene	MS	**2302830-02**	**ND**	**0.0037319**	**0.033557**	**mg/kg**		**11.1**		**30 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**0.0037100**	**0.033445**	**mg/kg**	**0.6**	**11.1**	**30**	**30 - 130**	**Q03**	2
Naphthalene	MS	**2302830-02**	**ND**	**ND**	**0.033557**	**mg/kg**		**1.1**		**50 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**ND**	**0.033445**	**mg/kg**	**3.4**	**1.1**	**30**	**50 - 130**	**Q03**	2
Phenanthrene	MS	**2302830-02**	**ND**	**ND**	**0.033557**	**mg/kg**		**1.3**		**40 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**ND**	**0.033445**	**mg/kg**	**2.2**	**1.3**	**30**	**40 - 130**	**Q03**	2
Pyrene	MS	**2302830-02**	**ND**	**ND**	**0.033557**	**mg/kg**		**1.2**		**40 - 130**	**Q03**	1
	MSD	**2302830-02**	**ND**	**ND**	**0.033445**	**mg/kg**	**1.6**	**1.2**	**30**	**40 - 130**	**Q03**	2
Nitrobenzene-d5 (Surrogate)	MS	**2302830-02**	**ND**	**0.0018081**	**0.13423**	**mg/kg**		**1.3**		**30 - 130**	**S09**	1
	MSD	**2302830-02**	**ND**	**0.0018742**	**0.13378**	**mg/kg**	**3.6**	**1.4**		**30 - 130**	**S09**	2
2-Fluorobiphenyl (Surrogate)	MS	**2302830-02**	**ND**	**0.00086007**	**0.13423**	**mg/kg**		**0.6**		**40 - 130**	**S09**	1
	MSD	**2302830-02**	**ND**	**0.00083344**	**0.13378**	**mg/kg**	**3.1**	**0.6**		**40 - 130**	**S09**	2

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

Quality Control Report - Precision & Accuracy

QC Batch ID: B159873 Used client sample: N

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
p-Terphenyl-d14 (Surrogate)	MS	**2302830-02**	**ND**	**0.0013262**	**0.13423**	**mg/kg**		**1.0**		**30 - 130**	**S09**	1
	MSD	**2302830-02**	**ND**	**0.0012930**	**0.13378**	**mg/kg**	**2.5**	**1.0**		**30 - 130**	**S09**	2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B159873-MS1	MS	EPA-8270C-SIM	02/13/23	02/14/23 13:02	OLH	MS-B7	1.007
2	B159873-MSD1	MSD	EPA-8270C-SIM	02/13/23	02/14/23 13:25	OLH	MS-B7	1.003

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B161016							
TPH - Gasoline	B161016-BLK1	ND	mg/kg	20	5.0		1
TPH - Diesel (FFP)	B161016-BLK1	ND	mg/kg	10	2.2		1
TPH - Hydraulic Oil / Motor Oil	B161016-BLK1	ND	mg/kg	20	7.0		1
Tetracosane (Surrogate)	**B161016-BLK1**	**73.0**	%	**20 - 145 (LCL - UCL)**			1
QC Batch ID: B161414							
TPH - Gasoline	B161414-BLK1	ND	mg/kg	20	5.0		2
TPH - Diesel (FFP)	B161414-BLK1	ND	mg/kg	10	2.2		2
TPH - Hydraulic Oil / Motor Oil	B161414-BLK1	ND	mg/kg	20	7.0		2
Tetracosane (Surrogate)	**B161414-BLK1**	**55.0**	%	**20 - 145 (LCL - UCL)**			2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B161016-BLK1	PB	EPA-8015B/FFP	02/24/23	02/27/23 20:27	BUP	GC-2	1.003
2	B161414-BLK1	PB	EPA-8015B/FFP	03/03/23	03/07/23 14:08	BUP	GC-2	1

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B161016											
TPH - Diesel (FFP)	B161016-BS1	LCS	67.451	81.967	mg/kg	82.3		64 - 124			1
Tetracosane (Surrogate)	B161016-BS1	LCS	3.0448	3.2787	mg/kg	92.9		20 - 145			1
QC Batch ID: B161414											
TPH - Diesel (FFP)	B161414-BS1	LCS	59.014	83.612	mg/kg	70.6		64 - 124			2
Tetracosane (Surrogate)	B161414-BS1	LCS	2.2184	3.3445	mg/kg	66.3		20 - 145			2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B161016-BS1	LCS	EPA-8015B/FFP	02/24/23	02/27/23 20:50	BUP	GC-2	0.984
2	B161414-BS1	LCS	EPA-8015B/FFP	03/03/23	03/07/23 14:31	BUP	GC-2	1.003

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Project Number: [none]
Project Manager: Scott English

Purgeable Aromatics and Total Petroleum Hydrocarbons (Silica Gel Treated)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B161016	Used client sample: Y - Description: HA6-0.5, 02/07/2023 15:20											
TPH - Diesel (FFP)	MS	2303085-15	79.058	152.95	84.746	mg/kg		87.2		52 - 131		1
	MSD	2303085-15	79.058	155.96	84.175	mg/kg	1.9	91.4	30	52 - 131		2
Tetracosane (Surrogate)	MS	2303085-15	ND	3.3297	3.3898	mg/kg		98.2		20 - 145		1
	MSD	2303085-15	ND	3.1347	3.3670	mg/kg	6.0	93.1		20 - 145		2
QC Batch ID: B161414	Used client sample: Y - Description: HA2-3.0, 02/07/2023 09:55											
TPH - Diesel (FFP)	MS	2303085-04	12.771	61.855	83.056	mg/kg		59.1		52 - 131		3
	MSD	2303085-04	12.771	64.567	83.893	mg/kg	4.3	61.7	30	52 - 131		4
Tetracosane (Surrogate)	MS	2303085-04	ND	2.1942	3.3223	mg/kg		66.0		20 - 145		3
	MSD	2303085-04	ND	2.3139	3.3557	mg/kg	5.3	69.0		20 - 145		4

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B161016-MS1	MS	EPA-8015B/FFP	02/24/23	02/27/23 21:14	BUP	GC-2	5.085
2	B161016-MSD1	MSD	EPA-8015B/FFP	02/24/23	02/27/23 21:37	BUP	GC-2	5.051
3	B161414-MS1	MS	EPA-8015B/FFP	03/03/23	03/07/23 15:17	BUP	GC-2	0.997
4	B161414-MSD1	MSD	EPA-8015B/FFP	03/03/23	03/07/23 15:40	BUP	GC-2	1.007

Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B160385							
TPH - Gasoline	B160385-BLK1	ND	mg/kg	20	5.0		1
TPH - Diesel (FFP)	B160385-BLK1	ND	mg/kg	10	2.2		1
TPH - Motor Oil	B160385-BLK1	ND	mg/kg	20	7.0		1
Tetracosane (Surrogate)	**B160385-BLK1**	**119**	%	**40 - 130 (LCL - UCL)**			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B160385-BLK1	PB	EPA-8015B/FFP	02/17/23	02/20/23 19:34	BUP	GC-2	1

Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B160385											
TPH - Diesel (FFP)	B160385-BS1	LCS	80.473	83.333	mg/kg	96.6		64 - 124			1
Tetracosane (Surrogate)	B160385-BS1	LCS	3.5392	3.3333	mg/kg	106		40 - 130			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B160385-BS1	LCS	EPA-8015B/FFP	02/17/23	02/20/23 15:45	BUP	GC-2	1

Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B160385	Used client sample: Y - Description: HA1-0.5, 02/07/2023 08:45											
TPH - Diesel (FFP)	MS	2303085-01	ND	71.455	82.508	mg/kg		86.6		52 - 131		1
	MSD	2303085-01	ND	79.441	83.893	mg/kg	10.6	94.7	30	52 - 131		2
Tetracosane (Surrogate)	MS	2303085-01	ND	3.4165	3.3003	mg/kg		104		40 - 130		1
	MSD	2303085-01	ND	3.5852	3.3557	mg/kg	4.8	107		40 - 130		2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B160385-MS1	MS	EPA-8015B/FFP	02/17/23	02/20/23 16:31	BUP	GC-2	0.990
2	B160385-MSD1	MSD	EPA-8015B/FFP	02/17/23	02/20/23 16:54	BUP	GC-2	1.007

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Total Concentrations (TTLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B159719							
Antimony	B159719-BLK1	ND	mg/kg	5.0	0.33		1
Arsenic	B159719-BLK1	ND	mg/kg	1.0	0.40		1
Barium	B159719-BLK1	ND	mg/kg	0.50	0.18		1
Beryllium	B159719-BLK1	ND	mg/kg	0.50	0.047		1
Cadmium	B159719-BLK1	ND	mg/kg	0.50	0.052		1
Chromium	**B159719-BLK1**	**0.16022**	**mg/kg**	**0.50**	**0.050**	**J**	1
Cobalt	B159719-BLK1	ND	mg/kg	2.5	0.098		1
Copper	B159719-BLK1	ND	mg/kg	1.0	0.050		1
Lead	B159719-BLK1	ND	mg/kg	2.5	0.41		1
Molybdenum	B159719-BLK1	ND	mg/kg	2.5	0.050		1
Nickel	**B159719-BLK1**	**0.18109**	**mg/kg**	**0.50**	**0.15**	**J**	1
Selenium	B159719-BLK1	ND	mg/kg	1.0	0.98		1
Silver	**B159719-BLK1**	**0.080983**	**mg/kg**	**0.50**	**0.067**	**J**	1
Thallium	B159719-BLK1	ND	mg/kg	5.0	0.64		1
Vanadium	B159719-BLK1	ND	mg/kg	0.50	0.11		1
Zinc	**B159719-BLK2**	**2.1173**	**mg/kg**	**2.5**	**0.087**	**J**	2
QC Batch ID: B159900							
Mercury	B159900-BLK1	ND	mg/kg	0.16	0.016		3
QC Batch ID: B160214							
Mercury	**B160214-BLK1**	**0.040800**	**mg/kg**	**0.16**	**0.016**	**J**	4
QC Batch ID: B160988							
Mercury	B160988-BLK1	ND	mg/kg	0.16	0.016		5

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B159719-BLK1	PB	EPA-6010B	02/13/23	02/14/23 19:56	DVS	PE-OP3	1
2	B159719-BLK2	PB	EPA-6010B	02/13/23	02/16/23 16:49	DVS	PE-OP3	1
3	B159900-BLK1	PB	EPA-7471A	02/15/23	02/15/23 13:07	TMT	CETAC3	1
4	B160214-BLK1	PB	EPA-7471A	02/20/23	02/20/23 13:41	TMT	CETAC3	1
5	B160988-BLK1	PB	EPA-7471A	03/01/23	03/01/23 12:36	TMT	CETAC3	1

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Project Manager: Scott English

Total Concentrations (TTLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B159719											
Antimony	B159719-BS1	LCS	102.64	100.00	mg/kg	103		75 - 125			1
Arsenic	B159719-BS1	LCS	17.665	20.000	mg/kg	88.3		75 - 125			1
Barium	B159719-BS1	LCS	102.53	100.00	mg/kg	103		75 - 125			1
Beryllium	B159719-BS1	LCS	9.7915	10.000	mg/kg	97.9		75 - 125			1
Cadmium	B159719-BS1	LCS	9.8723	10.000	mg/kg	98.7		75 - 125			1
Chromium	B159719-BS1	LCS	97.014	100.00	mg/kg	97.0		75 - 125			1
Cobalt	B159719-BS1	LCS	99.330	100.00	mg/kg	99.3		75 - 125			1
Copper	B159719-BS1	LCS	95.534	100.00	mg/kg	95.5		75 - 125			1
Lead	B159719-BS1	LCS	103.76	100.00	mg/kg	104		75 - 125			1
Molybdenum	B159719-BS1	LCS	103.40	100.00	mg/kg	103		75 - 125			1
Nickel	B159719-BS1	LCS	103.79	100.00	mg/kg	104		75 - 125			1
Selenium	B159719-BS1	LCS	18.751	20.000	mg/kg	93.8		75 - 125			1
Silver	B159719-BS1	LCS	8.6440	10.000	mg/kg	86.4		75 - 125			1
Thallium	B159719-BS1	LCS	112.89	100.00	mg/kg	113		75 - 125			1
Vanadium	B159719-BS1	LCS	96.100	100.00	mg/kg	96.1		75 - 125			1
Zinc	B159719-BS2	LCS	99.398	100.00	mg/kg	99.4		75 - 125			2
QC Batch ID: B159900											
Mercury	B159900-BS1	LCS	0.69920	0.80000	mg/kg	87.4		80 - 120			3
QC Batch ID: B160214											
Mercury	B160214-BS1	LCS	0.71840	0.80000	mg/kg	89.8		80 - 120			4
QC Batch ID: B160988											
Mercury	B160988-BS1	LCS	0.84320	0.80000	mg/kg	105		80 - 120			5

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B159719-BS1	LCS	EPA-6010B	02/13/23	02/14/23 19:57	DVS	PE-OP3	1
2	B159719-BS2	LCS	EPA-6010B	02/13/23	02/16/23 16:50	DVS	PE-OP3	1
3	B159900-BS1	LCS	EPA-7471A	02/15/23	02/15/23 13:10	TMT	CETAC3	1
4	B160214-BS1	LCS	EPA-7471A	02/20/23	02/20/23 14:39	TMT	CETAC3	1
5	B160988-BS1	LCS	EPA-7471A	03/01/23	03/01/23 12:43	TMT	CETAC3	1

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

QC Batch ID: B159719 Used client sample: Y - Description: HA7-0.5, 02/07/2023 14:50

									Control Limits	Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals	R#
Antimony	DUP	2303085-13	ND	ND		mg/kg			20			1
	MS	2303085-13	ND	32.405	100.00	mg/kg		32.4		16 - 119		2
	MSD	2303085-13	ND	32.408	100.00	mg/kg	0.0	32.4	20	16 - 119		3
Arsenic	DUP	2303085-13	3.7195	4.2170		mg/kg	12.5		20			1
	MS	2303085-13	3.7195	19.838	20.000	mg/kg		80.6		75 - 125		2
	MSD	2303085-13	3.7195	19.867	20.000	mg/kg	0.1	80.7	20	75 - 125		3
Barium	DUP	2303085-13	91.767	90.676		mg/kg	1.2		20			1
	MS	2303085-13	91.767	169.51	100.00	mg/kg		77.7		75 - 125		2
	MSD	2303085-13	91.767	170.55	100.00	mg/kg	0.6	78.8	20	75 - 125		3
Beryllium	DUP	2303085-13	0.18091	0.18612		mg/kg	2.8		20		J	1
	MS	2303085-13	0.18091	8.9113	10.000	mg/kg		87.3		75 - 125		2
	MSD	2303085-13	0.18091	8.8787	10.000	mg/kg	0.4	87.0	20	75 - 125		3
Cadmium	DUP	2303085-13	0.57226	0.57818		mg/kg	1.0		20			1
	MS	2303085-13	0.57226	9.4215	10.000	mg/kg		88.5		75 - 125		2
	MSD	2303085-13	0.57226	9.3154	10.000	mg/kg	1.1	87.4	20	75 - 125		3
Chromium	DUP	2303085-13	14.486	15.183		mg/kg	4.7		20			1
	MS	2303085-13	14.486	101.00	100.00	mg/kg		86.5		75 - 125		2
	MSD	2303085-13	14.486	102.49	100.00	mg/kg	1.5	88.0	20	75 - 125		3
Cobalt	DUP	2303085-13	3.3225	3.4685		mg/kg	4.3		20			1
	MS	2303085-13	3.3225	86.779	100.00	mg/kg		83.5		75 - 125		2
	MSD	2303085-13	3.3225	86.682	100.00	mg/kg	0.1	83.4	20	75 - 125		3
Copper	DUP	2303085-13	8.2574	7.9009		mg/kg	4.4		20			1
	MS	2303085-13	8.2574	95.537	100.00	mg/kg		87.3		75 - 125		2
	MSD	2303085-13	8.2574	94.781	100.00	mg/kg	0.8	86.5	20	75 - 125		3
Lead	DUP	2303085-13	5.7321	6.0809		mg/kg	5.9		20			1
	MS	2303085-13	5.7321	93.160	100.00	mg/kg		87.4		75 - 125		2
	MSD	2303085-13	5.7321	92.924	100.00	mg/kg	0.3	87.2	20	75 - 125		3
Molybdenum	DUP	2303085-13	0.68104	0.58888		mg/kg	14.5		20		J	1
	MS	2303085-13	0.68104	88.006	100.00	mg/kg		87.3		75 - 125		2
	MSD	2303085-13	0.68104	87.277	100.00	mg/kg	0.8	86.6	20	75 - 125		3
Nickel	DUP	2303085-13	16.864	17.233		mg/kg	2.2		20			1
	MS	2303085-13	16.864	103.23	100.00	mg/kg		86.4		75 - 125		2
	MSD	2303085-13	16.864	103.91	100.00	mg/kg	0.7	87.0	20	75 - 125		3
Selenium	DUP	2303085-13	ND	ND		mg/kg			20			1
	MS	2303085-13	ND	16.194	20.000	mg/kg		81.0		75 - 125		2
	MSD	2303085-13	ND	17.620	20.000	mg/kg	8.4	88.1	20	75 - 125		3
Silver	DUP	2303085-13	ND	ND		mg/kg			20			1
	MS	2303085-13	ND	7.8047	10.000	mg/kg		78.0		75 - 125		2
	MSD	2303085-13	ND	7.7867	10.000	mg/kg	0.2	77.9	20	75 - 125		3

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

									Control Limits	Control Limits		
Constituent	**Type**	**Source Sample ID**	**Source Result**	**Result**	**Spike Added**	**Units**	**RPD**	**Percent Recovery**	**RPD**	**Percent Recovery**	**Lab Quals**	**R#**
QC Batch ID: B159719 Used client sample: Y - Description: HA7-0.5, 02/07/2023 14:50												
Thallium	DUP	2303085-13	ND	ND		mg/kg			20			1
	MS	2303085-13	ND	88.910	100.00	mg/kg		88.9		75 - 125		2
	MSD	2303085-13	ND	87.206	100.00	mg/kg	1.9	87.2	20	75 - 125		3
Vanadium	DUP	2303085-13	28.869	29.154		mg/kg	1.0		20			1
	MS	2303085-13	28.869	115.05	100.00	mg/kg		86.2		75 - 125		2
	MSD	2303085-13	28.869	116.40	100.00	mg/kg	1.2	87.5	20	75 - 125		3
Zinc	DUP	2303085-13	28.913	30.376		mg/kg	4.9		20			4
	MS	2303085-13	28.913	109.31	100.00	mg/kg		80.4		75 - 125		5
	MSD	2303085-13	28.913	110.92	100.00	mg/kg	1.5	82.0	20	75 - 125		6
QC Batch ID: B159900 Used client sample: N												
Mercury	DUP	**2303088-05**	**0.058548**	**0.047581**		**mg/kg**	**20.7**		**20**		**J,A02**	7
	MS	**2303088-05**	**0.058548**	**0.75323**	**0.80645**	**mg/kg**		**86.1**		**80 - 120**		8
	MSD	**2303088-05**	**0.058548**	**0.75484**	**0.80645**	**mg/kg**	**0.2**	**86.3**	**20**	**80 - 120**		9
QC Batch ID: B160214 Used client sample: N												
Mercury	DUP	2303099-01	0.082222	0.090952		mg/kg	10.1		20		J	10
	MS	2303099-01	0.082222	0.84286	0.79365	mg/kg		95.8		80 - 120		11
	MSD	2303099-01	0.082222	0.90476	0.79365	mg/kg	7.1	104	20	80 - 120		12
QC Batch ID: B160988 Used client sample: N												
Mercury	DUP	2303382-10	ND	ND		mg/kg			20			13
	MS	2303382-10	ND	0.82381	0.79365	mg/kg		104		80 - 120		14
	MSD	2303382-10	ND	0.79841	0.79365	mg/kg	3.1	101	20	80 - 120		15

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B159719-DUP1	DUP	EPA-6010B	02/13/23	02/14/23 20:00	DVS	PE-OP3	1
2	B159719-MS1	MS	EPA-6010B	02/13/23	02/14/23 20:04	DVS	PE-OP3	1
3	B159719-MSD1	MSD	EPA-6010B	02/13/23	02/14/23 20:05	DVS	PE-OP3	1
4	B159719-DUP2	DUP	EPA-6010B	02/13/23	02/16/23 16:53	DVS	PE-OP3	1
5	B159719-MS2	MS	EPA-6010B	02/13/23	02/16/23 16:57	DVS	PE-OP3	1
6	B159719-MSD2	MSD	EPA-6010B	02/13/23	02/16/23 16:58	DVS	PE-OP3	1
7	B159900-DUP1	DUP	EPA-7471A	02/15/23	02/15/23 13:14	TMT	CETAC3	1.008
8	B159900-MS1	MS	EPA-7471A	02/15/23	02/15/23 13:22	TMT	CETAC3	1.008
9	B159900-MSD1	MSD	EPA-7471A	02/15/23	02/15/23 13:26	TMT	CETAC3	1.008
10	B160214-DUP1	DUP	EPA-7471A	02/20/23	02/20/23 13:49	TMT	CETAC3	0.992
11	B160214-MS1	MS	EPA-7471A	02/20/23	02/20/23 13:59	TMT	CETAC3	0.992
12	B160214-MSD1	MSD	EPA-7471A	02/20/23	02/20/23 13:55	TMT	CETAC3	0.992
13	B160988-DUP1	DUP	EPA-7471A	03/01/23	03/01/23 12:47	TMT	CETAC3	0.992
14	B160988-MS1	MS	EPA-7471A	03/01/23	03/01/23 12:55	TMT	CETAC3	0.992
15	B160988-MSD1	MSD	EPA-7471A	03/01/23	03/01/23 12:57	TMT	CETAC3	0.992

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A02	The difference between duplicate readings is less than the quantitation limit.
A10	Detection and quantitation limits were raised due to matrix interference.
A17	Surrogate not reportable due to sample dilution.
A52	Chromatogram not typical of diesel.
A57	Chromatogram not typical of motor oil.
Q02	Matrix spike precision is not within the control limits.
Q03	Matrix spike recovery(s) was(were) not within the control limits.
S05	The sample holding time was exceeded.
S08	The internal standard on the sample was not within the control limits.
S09	The surrogate recovery for this compound was not within the control limits.
Z1	IS low due to matrix interference. Interference verified through second analysis.

Appendix F

Preliminary Drainage Report

Preliminary Drainage Report

December 2022

PREPARED BY:

KPFF Consulting Engineers
700 South Flower Street, Suite 2100
Los Angeles, CA 90017
P: 213.418.0201

Contents

A. Project Scope

The proposed development will be a new aquatics center and recreation facility for the City of Oxnard. Site development will include a 1-story building, a competition pool, training pool, fun water pool, surface parking lot and various site improvements.

B. Existing Drainage Characteristics

In the existing condition, the site is generally undeveloped but there is evidence of the site being used as a dumping ground for soil, mulch and debris. The site is generally flat but ultimately drains to the west into the road. The road drains to the north and the south which are routed to a catch basin that was installed as part of the previous College Park project improvements, see Exhibit 2 – Existing Conditions. In addition, make ready utilities appear to have been installed and stubbed for our site which include storm drain, sewer and water utilities.

C. Proposed Drainage Characteristics

In the proposed condition, the site will be broken up into four drainage areas, see Exhibit 1 - Storm Water Treatment Plan. Each drainage area will be routed to a biofiltration planter that has been sized based on the drainage area size as outlined in the Ventura County Hydrology Manual, see Appendix C – BMP Calculations. We understand that the project site plan and project limits is undergoing changes and the BMP calculations may need to be updated as the site plan design progresses.

In addition, the peak flow rate for each drainage area has been calculated, see Table 4 in Appendix A – Calculation Summary Sheet. The total peak flow rate for the site was found to be 7.7 cubic-feet/second (cfs). Based on the College Park as-built drawings it appears the existing 24” storm drain point of connection that was installed for the Aquatic Center project has an available capacity of 8.3 cubic-feet/second (cfs). Therefore, it appears the existing storm drain line would have the capacity to serve the Aquatic Center project.

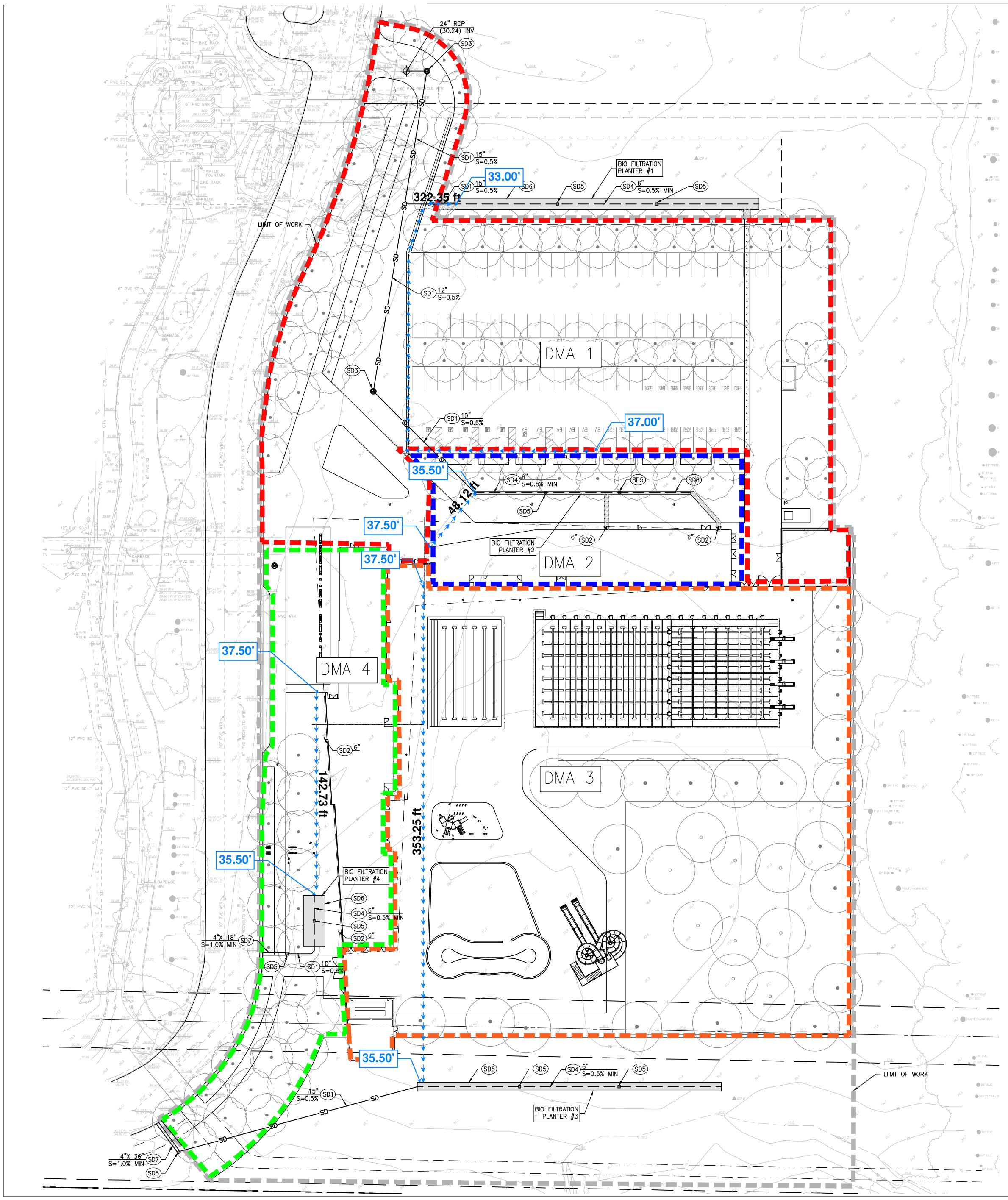
D. Finished Floor & Flood Zone

Based on the FEMA Flood Map the site does not appear to be within a flood zone, see flood map in Appendix C. The finished floor has been set as 37.50 feet, which is approximately 12 inches higher than the high point in the street. The goal is to minimize off-haul from the site and obtain adequate drainage to the proposed biofiltration planters.

EXHIBIT 1

Storm Water Treatment Plan

STORM WATER TREATMENT PLAN



UTILITY CONSTRUCTION NOTES:

STORM DRAIN

- (SD1) DUAL WALL HDPE STORM DRAIN PIPE PER DETAIL 1, SHEET C5.00. SIZE AND SLOPE PER PLAN.
- (SD2) POINT OF CONNECTION 5 FEET FROM BUILDING FACE. SEE PLUMBING DRAWINGS FOR CONTINUATION.
- (SD3) PRECAST CONCRETE MANHOLE.
- (SD4) PERFORATED PIPE. PER DETAIL 6, SHEET C5.00 SIZE AND SLOPE PER PLAN.
- (SD5) PRECAST CONCRETE CATCH BASIN. JENSEN PRECAST PRODUCTS OR APPROVED EQUIVALENT. SIZE AND GRATE BEARING TYPE PER PLAN.
- (SD6) BIOFILTRATION PLANTER. PER DETAIL 6, SHEET C5.00.
- (SD7) CURB DRAIN. SIZE AND SLOPE PER PLAN.

LEGEND:

▬ ▬ ▬	LIMIT OF WORK
— — —	PROPERTY LINE
SS	SANITARY SEWER
W	WATER
DW	DOMESTIC WATER
FW	FIRE WATER
SD	STORM DRAIN
G	GAS
E	ELECTRIC
T	TELEPHONE
- - -	PERFORATED PIPE
⊕	POINT OF CONNECTION
	COORDINATION POINT
	CAP OR PLUG
◉	UTILITY MANHOLE
⊙	UTILITY CLEANOUT
▣	STORM DRAIN INLET
●	AREA DRAIN/PLANTER DRAIN
▭	TRENCH DRAIN
	FIRE HYDRANT
◁	THRUST BLOCK
	FIRE DEPARTMENT CONNECTION (FDC)
	POST INDICATOR VALVE (PIV)
⊗	WATER VALVE
	BACKFLOW ASSEMBLY
▨	UTILITY METER VAULT

STORM WATER TREATMENT CALCULATIONS

DRAINAGE MANAGEMENT AREAS (DMA)	TOTAL AREA (SF)	PERVIOUS AREA (SF)	PERCENT IMPERVIOUS	REQUIRED TREATMENT AREA (SF)	TREATMENT AREA PROVIDED (SF)
1	87,270	28,030	68%	1,710	1,712
2	21,271	8,835	58%	304	304
3	78,611	29,834	62%	1,280	1,284
4	35,170	14,480	59%	521	528

els
architecture+
urban design

PROJECT:
SOUTH OXNARD AQUATICS CENTER

COLLEGE PARK
OXNARD, CA

PROJECT NUMBER:
202210

CLIENT:
CITY OF OXNARD
PUBLIC WORKS
305 WEST THIRD ST., 2ND FLOOR EAST,
OXNARD, CA 93030

PROJECT TEAM:

ARCHITECT:
ELS ARCHITECTURE AND URBAN DESIGN
2040 Addison Street
Berkeley, CA 94704
P: 510.549.2929

CIVIL ENGINEER:
KPFF
700 South Flower Street Suite 2100
Los Angeles, CA 90017
P: 213-418-0201

LANDSCAPE ARCHITECT:
SWA GROUP
2200 Bridgeway
Sausalito, CA 94965-1750
P: 415-332-5100

STRUCTURAL ENGINEER:
JOHN A. MARTIN & ASSOCIATES
1901 Harrison St., Suite 1570
Oakland, CA 94612
P: 510-500-1823
950 South Grand Ave., 4th Floor
Los Angeles, CA 90015
P: 213-483-6490

MECHANICAL, ELECTRICAL, & PLUMBING ENGINEER:
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San Francisco, CA 94111
P: 415-665-4000

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FIRE AND LIFE SAFETY CONSULTANT:
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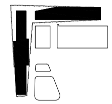
AQUATICS:
AQUATIC DESIGN GROUP
2226 Faraday Avenue
Carlsbad, CA 92008

SPECIFICATIONS:
TOPFLIGHT SPECS
49 Geary St., Suite 230
San Francisco, CA 94108
P: 415 546-6033

REVISION:

NUMBER	DATE	DESCRIPTION

KEY PLAN:



ISSUE:
SCHEMATIC DESIGN

DATE:
NOVEMBER 4, 2022

STAMP:

NOT FOR CONSTRUCTION

APPROVED:

CITY ENGINEER, DATE
TATIANA B. ARNAOUT
R.C.E. 88195 EXP. 03-31-24

SHEET TITLE:
STORM WATER TREATMENT PLAN

SHEET NUMBER:
C1.41

EXHIBIT 2

Existing Conditions

EXISTING CONDITIONS

els
architecture+
urban design

PROJECT:

**SOUTH OXNARD
AQUATICS CENTER**

COLLEGE PARK

OXNARD, CA

PROJECT NUMBER:
202210

CLIENT:

**CITY OF OXNARD
PUBLIC WORKS**
**305 WEST THIRD ST., 2ND FLOOR EAST,
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49 Geary St., Suite 230
San Francisco, CA 94108
P: 415 546-6033

REVISION

NUMBER	DATE	DESCRIPTION

ISSUE:
SCHEMATIC DESIGN

DATE:
NOVEMBER 4, 2022

STAMP:
[redacted]

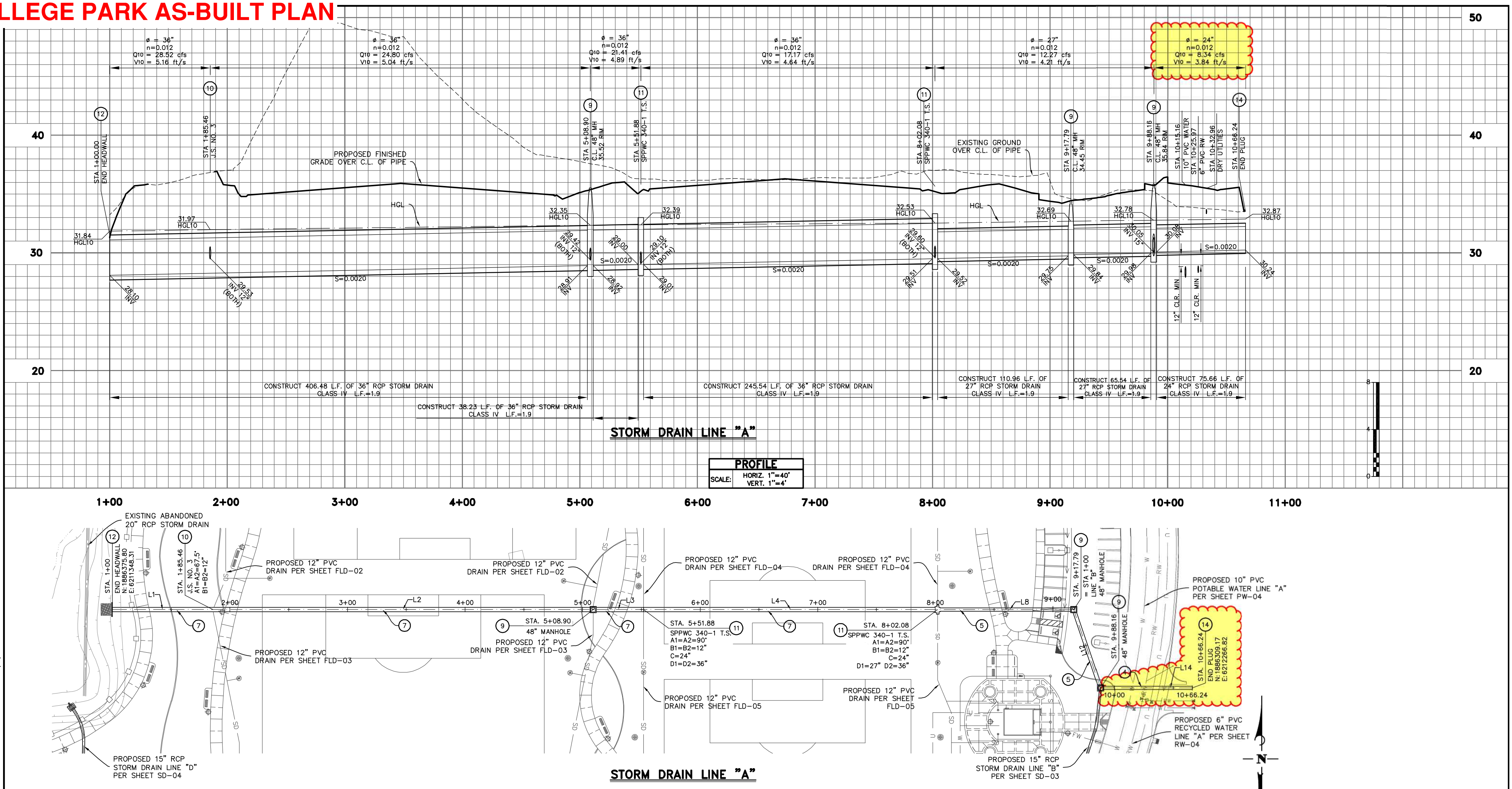
SHEET TITLE:

SHEET NUMBER:

EXHIBIT 3

As-Built Reference Document

COLLEGE PARK AS-BUILT PLAN



STORM DRAIN CONSTRUCTION NOTES

④ CONSTRUCT 24" RCP STORM DRAIN PER CITY OF OXNARD STANDARD PLATE 529 AND 602.

⑤ CONSTRUCT 27" RCP STORM DRAIN PER CITY OF OXNARD STANDARD PLATE 529 AND 602.

⑦ CONSTRUCT 36" RCP STORM DRAIN PER CITY OF OXNARD STANDARD PLATE 529 AND 602.

⑨ CONSTRUCT MANHOLE NO. 1 PER CITY OF OXNARD STANDARD PLATE 513 AND 517.

⑩ CONSTRUCT JUNCTION STRUCTURE NO. 3 PER CITY OF OXNARD STANDARD PLATE 522, CASE 1.

⑪ CONSTRUCT TRANSITION STRUCTURE PER SPPWC 340-1.

⑫ CONSTRUCT STRAIGHT SINGLE HEAD WALL PER CALTRANS STANDARD PLAN D89 AND DETAIL "J", SHEET PG-14.

⑭ PLUG STORM DRAIN LINE FOR FUTURE EXPANSION.

LINE TABLE

LINE	BEARING	DISTANCE
L1	N90°00'00"E	85.46
L2	N90°00'00"E	323.44
L3	N90°00'00"E	42.98
L4	N90°00'00"E	250.20
L8	N90°00'00"E	115.71
L12	S18°46'01"E	70.37
L14	N90°00'00"E	78.07

SCALE: 1"=40'
0 40 80 120

NP 09-06

REF NO.
SD-02

Penfield & Smith
Engineering · Surveying · Planning
· Construction Management ·
1327 Del Norte Road, Suite 200, Camarillo, CA 93010
Phone: (805) 981-0706 Fax: (805) 981-0251

SALVADOR CONTRERAS DATE: 07/29/2010
PROJECT ENGINEER
R.C.E. 66720
W.O. 17044.02 17044.02_STORM.dwg

SALVADOR CONTRERAS, JR.
NO 66720
CIVIL

REVISIONS

MARK	DATE	DESCRIPTION	BY

REVIEWED BY: DATE
DATE

GS 09-11
GENERAL SERVICES DIVISION

COLLEGE PARK PHASE 1C IMPROVEMENTS PROJECT
STORM DRAIN PLAN & PROFILE
LINE "A" STA 1+00 TO STA 10+66.24

APPROVED: 07/29/2010
General Services Superintendent, Michael Henderson Date

SCALE: HORIZ. 1" = 40' VERT. 1" = 4'
SHEET NO. 21 OF 117
DRAWN BY: GJM
CHECKED BY: SC
DRAWING NUMBER 09-30A

DRAWING:n:\acad\work\17044\1704402\phase 1c\civil\storm drain\17044.02_storm.dwg

36-PP1 SAVE DATE: 6/10/2010 1:54:17 PM PLOT BY:Gregory Musser PLOT DATE:8/3/2010 10:02:58 AM PLOT SCALE:1:79.86

APPENDIX A

Calculation Summary Sheet

kpff

700 South Flower Street
Suite 2100
Los Angeles, CA 90017
O: 213.418.0201
F: 213.266.5294
www.kpff.com

PROJECT **Oxnard AC**
LOCATION **College Park**
CLIENT **ELS**
BY **JH**
DATE **11/9/22**
JOB NUMBER **2101010**
SHEET NO.

CALCULATION SUMMARY SHEET

TABLE 1: STORMWATER CALCULATION SUMMARY TABLE

STORM WATER TREATMENT CALCULATIONS					
DRAINAGE MANAGEMENT AREAS (DMA)	TOTAL AREA (SF)	PERVIOUS AREA (SF)	PERCENT IMPERVIOUS	REQUIRED TREATMENT AREA (SF)	TREATMENT AREA PROVIDED(SF)
1	87,270	28,030	68%	1,710	1,712
2	21,271	8,835	58%	304	304
3	78,611	29,834	62%	1,280	1,284
4	35,170	14,480	59%	521	528
TOTAL	222,322	81,179	63%	-	-
TOTAL (EC)	222,322	222,322	100%	-	-

TABLE 2: WEIGHTED CURVE NUMBER (CN) CALCULATION

DMA	Landuse	Area	CN	Weighted CN (Wtd. CN)
DMA 1	Parking Lot	59,240	98	91
	Open Space/Lawn	28,030	76	
DMA 2	Roof/Hardscape	124,365	98	97
	Open Space/Lawn	8,835	76	
DMA 3	Public Facility	48,777	86	82
	Open Space/Lawn	29,834	76	
DMA 4	Roof/Hardscape	20,690	98	89
	Open Space/Lawn	14,480	76	
TOTAL	Parking Lot	59,240	98	91
	Open Space/Lawn	81,179	76	
	Roof/Hardscape	145,055	98	
	Public Facility	48,777	86	
TOTAL (EC)	Open Space/Lawn	222,232	76	76

TABLE 3: CURVE NUMBER (CN) YIELD CALCULATION

	DMA 1	DMA 2	DMA 3	DMA 4	TOTAL	TOTAL (EC)
10-yr 24-hr Prepcip. P (in)	4	4	4	4	4	4
Wtd CN:	91	97	82	89	91	76
Potential Abstraction S = (1000/CN)-10:	1.0	0.4	2.2	1.2	1.0	3.2
Initial Abstraction Ia=0.2S:	0.20	0.07	0.43	0.25	0.20	0.63
Yield = ((P-0.2S)^2)/(P+0.8S):	3.01	3.60	2.22	2.82	3.01	1.74

TABLE 4: TIME OF CONCENTRATION & 10 YR PEAK FLOW RATE

DMA	Time of Concentration (Tc)	10 year Peak Flow (Q10)
DMA 1	13.2 min	3.1 cfs
DMA 2	1.8 min	1.2 cfs
DMA 3	14.5 min	4.5 cfs
DMA 4	5.8 min	2.0 cfs
TOTAL	13.2 min	7.7 cfs
TOTAL (EC)	14.7 min	6.2 cfs

APPENDIX B

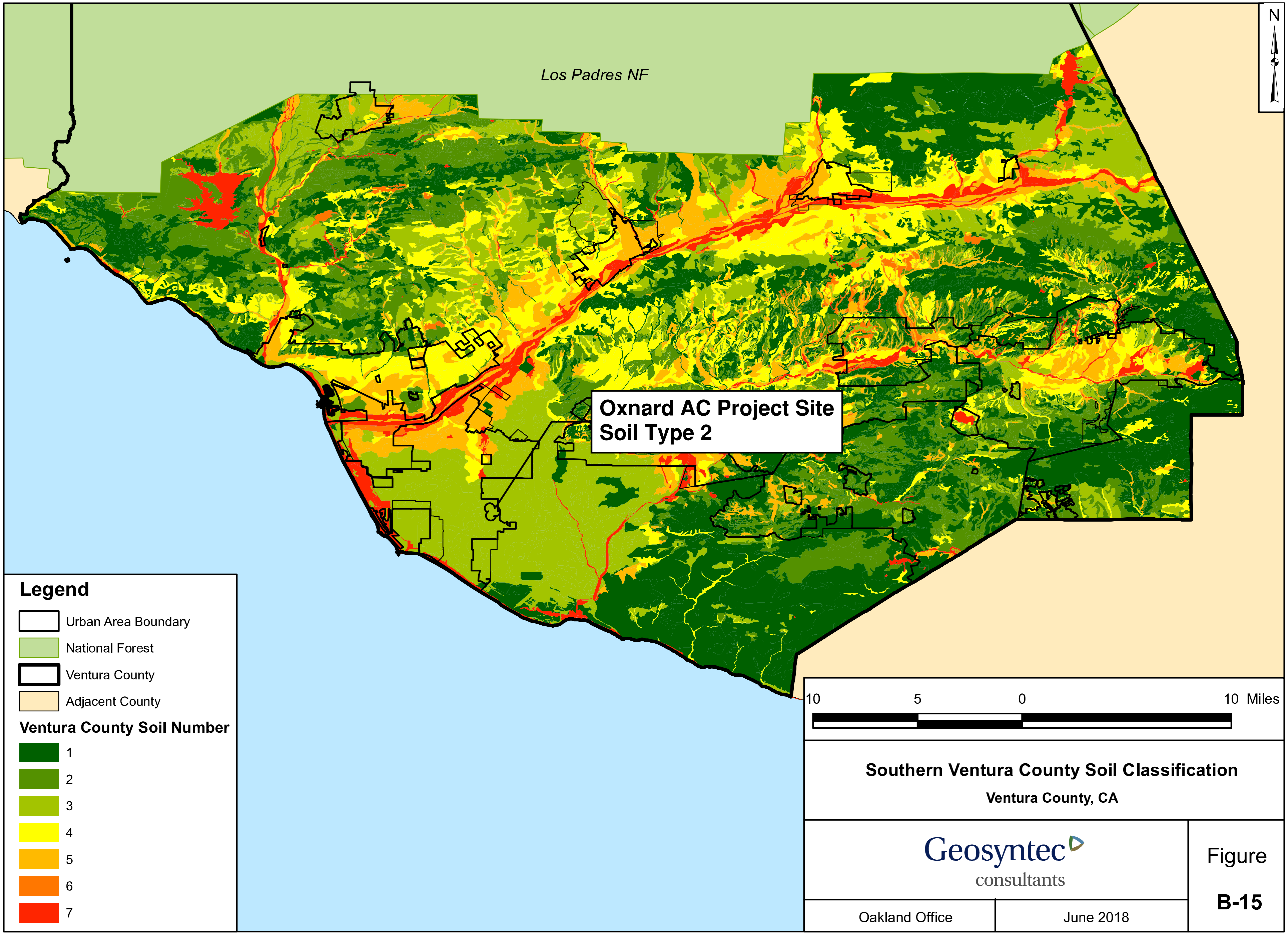
Site Specific Information

CURVE NUMBER

EXHIBIT 14B. AMC II NRCS CURVE NUMBERS FOR DEVELOPED LAND

DEVELOPED LAND USE		% IMPERVIOUS		HYDROLOGIC SOIL GROUP (5)						
	Condition (1)	EFFECTIVE	AVERAGE	A		B		C		D
				7	6	5	4	3	2	1
Open Spaces, Lawns, Parks, Golf Courses, Cemeteries, etc.	Good	0	0	29	52	57	64	71	76	80
“	Fair	0	0	42	61	65	71	77	81	84
Residential 1 ac. Lot	-	10	20	45	62	66	71	76	80	84
Residential 1/2 ac. Lot	-	13	25	45	65	68	73	78	81	85
Residential 1/3 ac. Lot	-	15	30	48	67	70	75	79	82	86
Residential 1/4 ac. Lot	-	19	38	53	70	73	77	81	84	87
Residential 1/5 ac. Lot	-	23	47	59	74	77	80	84	86	89
Residential 1/6 ac. Lot	-	28	56	66	79	81	84	86	88	90
Residential 1/8 ac. Lot	-	32	65	72	83	84	87	89	90	92
Residential - Condos	-	37	69	74	84	86	88	90	92	93
Industrial Unpaved Yards, etc.	-	36	72	77	86	87	89	91	92	93
Commercial & Business	-	50	85	88	90	91	93	93	95	95
Industrial Parks, Paved Parking, etc.	-	70	93	93	94	95	96	96	97	97
Parking Lots, Roofs, Driveways, Paved Streets with Curbs & Drains	-	90	100	98	98	98	98	98	98	98
Public Facilities & Institutions; Includes Schools, Government CenterS, Military Bases, etc. (2)	-	23	47	59	74	77	80	84	86	89
Transportation and utilities (3)	-	70	93	79	87	88	90	91	92	93
Newly graded/under construction - No veg.	-	0	0	71	83	85	88	90	92	94
Paved Streets with open ditches including right-of-way (3)	-	70	93	79	87	88	90	91	92	93
Gravel streets including right-of-way	-	0	0	71	82	84	86	88	90	91
Dirt street including right-of-way	-	0	0	66	79	81	83	86	88	89
Natural desert landscaping- native vegetation	-	0	0	55	72	75	79	83	86	88
Farmsteads- buildings, lanes, driveways, and surrounding lots (2)	-	23	47	51	69	72	76	80	83	86
Agriculture- Straight Row + Crop Residue Cover on >5% of surface	Good	0	0	57	72	74	77	80	83	85
Agriculture- Straight Row + Crop Residue Cover on <5% of surface	Poor	0	0	64	78	80	83	86	88	90

SOIL TYPE



Southern Ventura County Soil Classification

Ventura County, CA

Geosyntec consultants

Oakland Office

June 2018

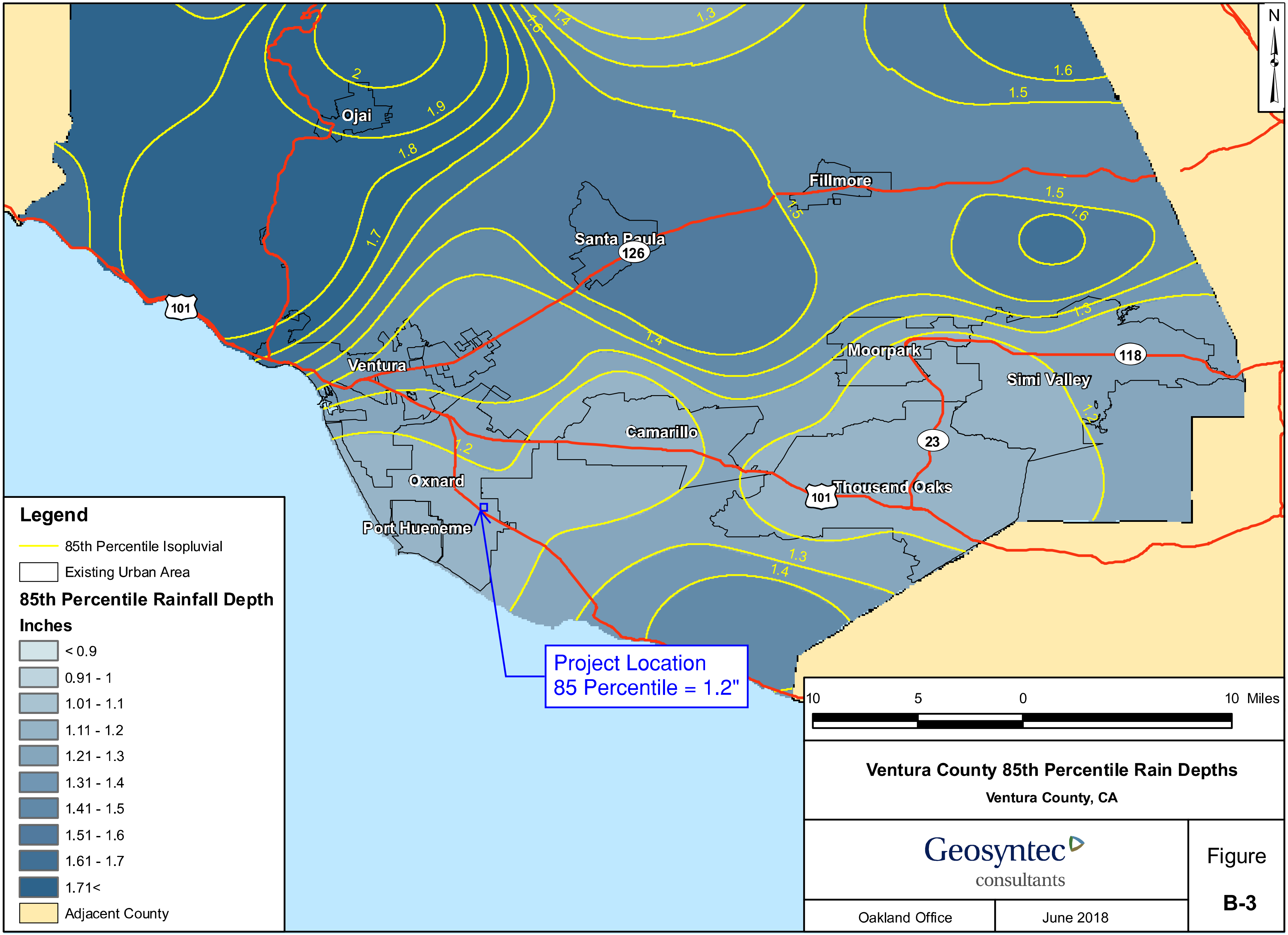
Figure

B-15

P:\GIS\Ventura_County_Manual\Projects\B-14_Ventura_Soils_092310.mxd, WHL, September 23, 2010

10-YEAR PRECIPITATION

85th PERCENTILE



Project Location
85 Percentile = 1.2"

Ventura County 85th Percentile Rain Depths

Ventura County, CA

Geosyntec consultants

Oakland Office

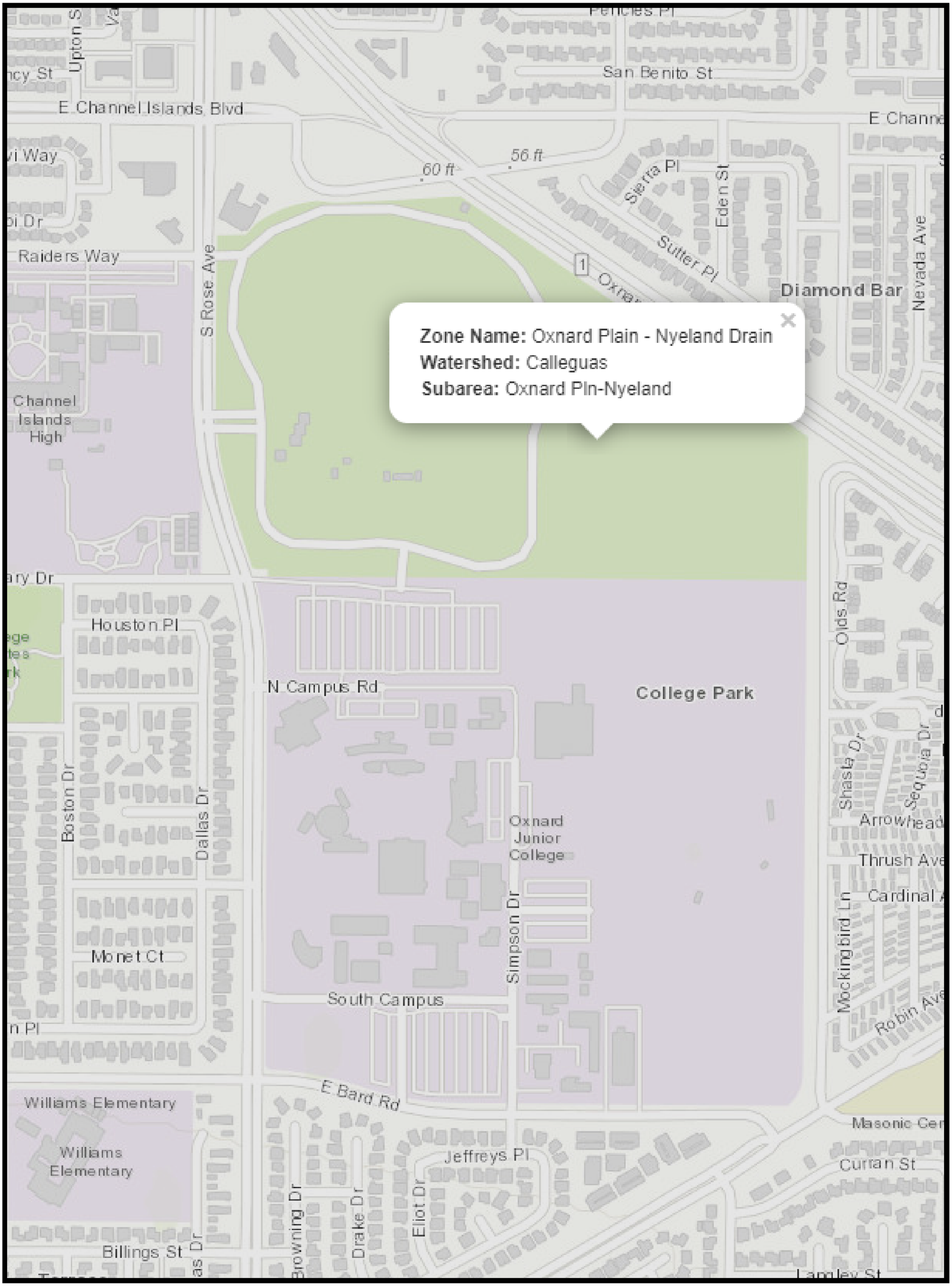
June 2018

Figure

B-3

P:\GIS\Ventura_County_Manual\Projects\B-3_Ventura_County_85th_Isopluvials_092010.mxd, WHL, September 20, 2010

STORM ZONE



Zone Name: Oxnard Plain - Nyeland Drain
Watershed: Calleguas
Subarea: Oxnard Pln-Nyeland

National Flood Hazard Layer FIRMette

FEMA

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	🟦	Without Base Flood Elevation (BFE) *Zone A, V, A99* With BFE or Depth *Zone AE, AO, AH, VE, AR*
	▨	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	🟧	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	▨	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	▨	Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
	▨	Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN	Area of Minimal Flood Hazard *Zone X*
	☐	Effective LOMRs
	🟧	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	— — —	Channel, Culvert, or Storm Sewer
	I I I I I I I	Levee, Dike, or Floodwall
OTHER FEATURES	(B) 20.2 17.5	Cross Sections with 1% Annual Chance Water Surface Elevation
	8 — — —	Coastal Transect
	~~ 513 ~~~	Base Flood Elevation Line (BFE)
	——	Limit of Study
	——	Jurisdiction Boundary
	— - —	Coastal Transect Baseline
	—	Profile Baseline
	—	Hydrographic Feature
MAP PANELS	☐	Digital Data Available
	☐	No Digital Data Available
	☒	Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/8/2022 at 11:26 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX C

BMP Calculations

DMA 1

BMP: **VEG-1 Bioretention/ VEG-2 Planter Box**

Ventura County Technical Guidance Manual Page E-42

STEP 1 **Determine Stormwater Quality Design Volume (SQDV)**

1-1	Enter Drainage Area, A (acre)	2.00
1-2	Enter Max. $\%_{allowable}$ (5-30%)	5.00
1-3	Determine $EIA_{allowable}$ (acre)	0.10
1-4	Enter Project Impervious Fraction, Imp	0.68
1-5	Determine Total Imp Area, TIA (acre)	1.36
1-6	Determine A_{retain} (acre)	1.26
1-7	Enter Soil Type (1-7)	5
	Determine C_P	0.05
1-8	Calculate Runoff Coefficient, C	0.66
1-9	Enter Design rainfall depth, P_i (in)	1.20
1-10	Calculate Design rainfall depth, P (ft)	0.10
1-11	Calculate SQDV (ft^3)	3633.43

STEP 2 **Determine the Design Percolation Rate**

2-1	Enter Design Saturated Hydraulic Conductivity of the Amended Filter Media, K_{design} (recommend 2.5 in/hr)	2.50

STEP 3 **Calculate the Surface Area**

3-1	Enter SQDV (ft^3)	3,633.43
3-2	Enter K_{design} (in/hr)	2.50
3-3	Enter Ponding Depth, d_p (1.5' for Bioretention, 1' for Planter Box)	1.50
3-4	Calculate Drawdown Time for the Ponded Water to Filter Thru Media, t_{pondig} (hr)	7.20
3-5	Enter Storm Duration for Routing Calculations, $T_{routing}$ (3 hrs)	3.00
3-6	Calculate $d_{filtered,1}$ (ft)	0.63
	Calculate $d_{filtered,2}$ (ft)	0.75
3-7	Determine Resultant Depth, $d_{filtered}$	0.63
3-8	Calculate Required Infiltrating Surface Area, A_{req} (ft^2)	1709.85

DMA 2

BMP: **VEG-1 Bioretention/ VEG-2 Planter Box**

Ventura County Technical Guidance Manual Page E-42

STEP 1 **Determine Stormwater Quality Design Volume (SQDV)**

1-1	Enter Drainage Area, A (acre)	0.49
1-2	Enter Max. $\%_{allowable}$ (5-30%)	5.00
1-3	Determine $EIA_{allowable}$ (acre)	0.02
1-4	Enter Project Impervious Fraction, Imp	0.58
1-5	Determine Total Imp Area, TIA (acre)	0.28
1-6	Determine A_{retain} (acre)	0.26
1-7	Enter Soil Type (1-7)	5
	Determine C_P	0.05
1-8	Calculate Runoff Coefficient, C	0.57
1-9	Enter Design rainfall depth, P_i (in)	1.20
1-10	Calculate Design rainfall depth, P (ft)	0.10
1-11	Calculate SQDV (ft^3)	644.44

STEP 2 **Determine the Design Percolation Rate**

2-1	Enter Design Saturated Hydraulic Conductivity of the Amended Filter Media, K_{design} (recommend 2.5 in/hr)	2.50

STEP 3 **Calculate the Surface Area**

3-1	Enter SQDV (ft^3)	644.44
3-2	Enter K_{design} (in/hr)	2.50
3-3	Enter Ponding Depth, d_p (1.5' for Bioretention, 1' for Planter Box)	1.50
3-4	Calculate Drawdown Time for the Ponded Water to Filter Thru Media, t_{pondig} (hr)	7.20
3-5	Enter Storm Duration for Routing Calculations, $T_{routing}$ (3 hrs)	3.00
3-6	Calculate $d_{filtered,1}$ (ft)	0.63
	Calculate $d_{filtered,2}$ (ft)	0.75
3-7	Determine Resultant Depth, $d_{filtered}$	0.63
3-8	Calculate Required Infiltrating Surface Area, A_{req} (ft^2)	303.26

DMA 3

BMP: **VEG-1 Bioretention/** **VEG-2 Planter Box**

Ventura County Technical Guidance Manual Page E-42

STEP 1 **Determine Stormwater Quality Design Volume (SQDV)**

1-1	Enter Drainage Area, A (acre)	1.80
1-2	Enter Max. $\%_{allowable}$ (5-30%)	5.00
1-3	Determine $EIA_{allowable}$ (acre)	0.09
1-4	Enter Project Impervious Fraction, Imp	0.62
1-5	Determine Total Imp Area, TIA (acre)	1.12
1-6	Determine A_{retain} (acre)	1.03
1-7	Enter Soil Type (1-7)	5
	Determine C_P	0.05
1-8	Calculate Runoff Coefficient, C	0.61
1-9	Enter Design rainfall depth, P_i (in)	1.20
1-10	Calculate Design rainfall depth, P (ft)	0.10
1-11	Calculate SQDV (ft^3)	2717.31

STEP 2 **Determine the Design Percolation Rate**

2-1	Enter Design Saturated Hydraulic Conductivity of the Amended Filter Media, K_{design} (recommend 2.5 in/hr)	2.50

STEP 3 **Calculate the Surface Area**

3-1	Enter SQDV (ft^3)	2,717.31
3-2	Enter K_{design} (in/hr)	2.50
3-3	Enter Ponding Depth, d_p (1.5' for Bioretention, 1' for Planter Box)	1.50
3-4	Calculate Drawdown Time for the Ponded Water to Filter Thru Media, t_{pondig} (hr)	7.20
3-5	Enter Storm Duration for Routing Calculations, $T_{routing}$ (3 hrs)	3.00
3-6	Calculate $d_{filtered,1}$ (ft)	0.63
	Calculate $d_{filtered,2}$ (ft)	0.75
3-7	Determine Resultant Depth, $d_{filtered}$	0.63
3-8	Calculate Required Infiltrating Surface Area, A_{req} (ft^2)	1278.73

DMA 4

BMP: **VEG-1 Bioretention/ VEG-2 Planter Box**

Ventura County Technical Guidance Manual Page E-42

STEP 1 **Determine Stormwater Quality Design Volume (SQDV)**

1-1	Enter Drainage Area, A (acre)	0.81
1-2	Enter Max. $\%_{allowable}$ (5-30%)	5.00
1-3	Determine $EIA_{allowable}$ (acre)	0.04
1-4	Enter Project Impervious Fraction, Imp	0.59
1-5	Determine Total Imp Area, TIA (acre)	0.48
1-6	Determine A_{retain} (acre)	0.44
1-7	Enter Soil Type (1-7)	5
	Determine C_P	0.05
1-8	Calculate Runoff Coefficient, C	0.58
1-9	Enter Design rainfall depth, P_i (in)	1.20
1-10	Calculate Design rainfall depth, P (ft)	0.10
1-11	Calculate SQDV (ft^3)	1106.99

STEP 2 **Determine the Design Percolation Rate**

2-1	Enter Design Saturated Hydraulic Conductivity of the Amended Filter Media, K_{design} (recommend 2.5 in/hr)	2.50

STEP 3 **Calculate the Surface Area**

3-1	Enter SQDV (ft^3)	1,106.99
3-2	Enter K_{design} (in/hr)	2.50
3-3	Enter Ponding Depth, d_p (1.5' for Bioretention, 1' for Planter Box)	1.50
3-4	Calculate Drawdown Time for the Ponded Water to Filter Thru Media, t_{pondig} (hr)	7.20
3-5	Enter Storm Duration for Routing Calculations, $T_{routing}$ (3 hrs)	3.00
3-6	Calculate $d_{filtered,1}$ (ft)	0.63
	Calculate $d_{filtered,2}$ (ft)	0.75
3-7	Determine Resultant Depth, $d_{filtered}$	0.63
3-8	Calculate Required Infiltrating Surface Area, A_{req} (ft^2)	520.94

APPENDIX D

Peak Flowrate Calculations

DMA 1

Tc Calculator Data Sheet V6.1

Project Name and Number: **Oxnard AC**

USER INPUT IN BLUE FIELDS:		
Subarea Name =	DMA 1	User Input
Watershed Area ac =	2.0	Calculated from flowpath data
% Imperviousness =	68	User Input
Land Use Description =	Public	DropMenu
Storm Frequency	10	DropMenu
Storm Zone =	Oxnard Pln-Nyeland	DropMenu
Zone ID =	Rev2_10	Calculated
District Soil Number (1-7) =	2	DropMenu- Rev for Revised C Coefficients
Tc for Intensity Calc min =	**13.00**	**Rounded, Use for Peak Flow Calc.**
Intensity in/hr =	1.726	Calculated
C_undeveloped =	0.732	Calculated
C_composite =	0.880	Calculated
Peak cfs =	3.06	Calculated
Calculated Tc=	**13.15**	**Calculated**

Instructions:

1. Set to manual calculations with File->Options->Formulas
2. Set max iterative calculations to 50
3. Enter required subarea and flowpath data in blue fields
4. Use site-specific topo or District 2005 LiDAR data for elevations
5. LiDAR and rain zone data at: http://vcwatershed.net/publicMaps/data
6. Clear any unnessary flowpath data from blue fields
7. Manually calculate with F9 or Formulas->Calculate Now
8. If error or comments appear, revise input data accordingly
9. Tc's in cells C12 and C17 should converge to the nearest minute.
10. Use result in C12 for peak flow calculation.
11. Print area is set for printing this page on one sheet.

FLOWPATH DATA- UPSTREAM TO DOWNSTREAM

Flowpath Number	Type- Selected with DropMenus	Type#	Flowpath Area ac	Upper Elev. Ft	Bott. Elev. Ft	Length ft	Map Slope ft/ft	Mtn Chan. Eff. Slope ft/ft	Diam/ Width ft	n value	Side- slope X; XH:1V	% Area	Q cfs	Cum. Q cfs
1	Overland-Developed	2	2.00	37	33	322	0.012					100.0%	3.1	3.1
2	None	0					#VALUE!	#VALUE!				0.0%	-	3.1
3	None	0										0.0%	-	3.1
4	None	0										0.0%	-	3.1
5	None	0										0.0%	-	3.1
6	None	0										0.0%	-	3.1
7	None	0										0.0%	-	3.1
8	None	0										0.0%	-	3.1
9	None	0										0.0%	-	3.1
10	None	0										0.0%	-	3.1
Sum			**2.0**									**100%**	**3.1**	

DMA 1

VCRat Single Subarea Hydrograph, Mitigation, and Detention Basin Routing Calculations

Project Information: **Test Hydrograph, Ventura County**

DEVELOPED CONDITION INPUT DATA		
Watershed Area ac =	2.00	User Input
Time of Concentration Tc min =	13.2	User Input
% Imperviousness =	68	User Input
Land Use Description =	Parking lot & AC	User Input
Storm Zone =	Oxnard Pln-Nyeland	Dropdown List
Storm Frequency =	10	Dropdown List
District Soil Number =	2	Dropdown List
NRCS Curve Number Yield in =	3.01	User Input
MITIGATION INPUT DATA		
Mitigation Level	10-yr Dev	User Input
Time of Concentration Tc min =	13	User Input
Storm Frequency =	10	Dropdown List
% Effective Imperviousness =	68	User Input
Land Use Description =		User Input
CALCULATION RESULTS		
Iteration Volume Difference cf =	0.000	
Dev. Subarea Outflow Peak cfs =	3.06	
FLOW THROUGH BASIN RESULTS		
Basin Inflow Peak cfs =	3.06	
Mitigated Hydrograph Peak cfs =	3.06	
Routed Hydrograph Peak cfs =	0.86	
Max Basin Storage af =	0.0142	
Max Basin Elevation ft =	0.71	
BYPASS BASIN RESULTS		
Inflow Hydrograph Peak cfs =	3.06	
Mitigation Hydrograph Peak cfs =	3.06	
Peak Flow into Bypass Basin cfs =	-	
Volume into Bypass Basin cf =	-	

INSTRUCTIONS

1. Under File-Options-Formulas
Check Iterative Calculations
200 iterations
0.001 tolerance
2. Input data in blue fields
3. Press F9 to manually
calculate the hydrology data
if Volume Difference in
B19 is not 0.
4. Choose rain zone at:
vcwatershed.net/publicMaps/data/

Flow-Through Basin Data

Elev. ft	Storage af	Disch. cfs
0.0	0.00	0.00
0.5	0.01	0.54
1.0	0.02	1.31
1.5	0.04	1.83
2.0	0.05	2.22
2.5	0.06	2.53
3.0	0.10	2.83
3.5	0.15	3.09
4.0	1.0	5.0

DMA 2

Tc Calculator Data Sheet V6.1

Project Name and Number: **Oxnard AC**

USER INPUT IN BLUE FIELDS:		
Subarea Name =	DMA 2	User Input
Watershed Area ac =	0.5	Calculated from flowpath data
% Imperviousness =	58	User Input
Land Use Description =	Public	DropMenu
Storm Frequency	10	DropMenu
Storm Zone =	Oxnard Pln-Nyeland	DropMenu
Zone ID =	Rev2_10	Calculated
District Soil Number (1-7) =	2	DropMenu- Rev for Revised C Coefficients
Tc for Intensity Calc min =	**15.00**	**Tc Outside of Range, Reset to 15**
Intensity in/hr =	1.608	Calculated
C_undeveloped =	0.720	Calculated
C_composite =	0.853	Calculated
Peak cfs =	0.68	Calculated
Calculated Tc=	**1.82**	**Tc Outside of Range, Revise Flowpaths**

Instructions:

1. Set to manual calculations with File->Options->Formulas
2. Set max iterative calculations to 50
3. Enter required subarea and flowpath data in blue fields
4. Use site-specific topo or District 2005 LiDAR data for elevations
5. LiDAR and rain zone data at: http://vcwatershed.net/publicMaps/data
6. Clear any unnessary flowpath data from blue fields
7. Manually calculate with F9 or Formulas->Calculate Now
8. If error or comments appear, revise input data accordingly
9. Tc's in cells C12 and C17 should converge to the nearest minute.
10. Use result in C12 for peak flow calculation.
11. Print area is set for printing this page on one sheet.

FLOWPATH DATA- UPSTREAM TO DOWNSTREAM

Flowpath Number	Type- Selected with DropMenus	Type#	Flowpath Area ac	Upper Elev. Ft	Bott. Elev. Ft	Length ft	Map Slope ft/ft	Mtn Chan. Eff. Slope ft/ft	Diam/ Width ft	n value	Side-slope X; XH:1V	% Area	Q cfs	Cum. Q cfs
1	Overland-Developed	2	0.49	37.5	35.5	50	0.040					100.0%	0.7	0.7
2	None	0					#VALUE!	#VALUE!				0.0%	-	0.7
3	None	0										0.0%	-	0.7
4	None	0										0.0%	-	0.7
5	None	0										0.0%	-	0.7
6	None	0										0.0%	-	0.7
7	None	0										0.0%	-	0.7
8	None	0										0.0%	-	0.7
9	None	0										0.0%	-	0.7
10	None	0										0.0%	-	0.7
Sum			**0.5**									**100%**	**0.7**	

DMA 2

VCRat Single Subarea Hydrograph, Mitigation, and Detention Basin Routing Calculations

Project Information: **Test Hydrograph, Ventura County**

DEVELOPED CONDITION INPUT DATA		
Watershed Area ac =	0.49	User Input
Time of Concentration Tc min =	1.8	Tc outside of requi
% Imperviousness =	58	User Input
Land Use Description =	Parking lot & AC	User Input
Storm Zone =	Oxnard Pln-Nyeland	Dropdown List
Storm Frequency =	10	Dropdown List
District Soil Number =	2	Dropdown List
NRCS Curve Number Yield in =	3.6	User Input
MITIGATION INPUT DATA		
Mitigation Level	10-yr Dev	User Input
Time of Concentration Tc min =	2	Tc outside of requi
Storm Frequency =	10	Dropdown List
% Effective Imperviousness =	58	User Input
Land Use Description =		User Input
CALCULATION RESULTS		
Iteration Volume Difference cf =	0.000	
Dev. Subarea Outflow Peak cfs =	1.23	
FLOW THROUGH BASIN RESULTS		
Basin Inflow Peak cfs =	1.23	
Mitigated Hydrograph Peak cfs =	1.23	
Routed Hydrograph Peak cfs =	0.86	
Max Basin Storage af =	0.0142	
Max Basin Elevation ft =	0.71	
BYPASS BASIN RESULTS		
Inflow Hydrograph Peak cfs =	1.23	
Mitigation Hydrograph Peak cfs =	1.23	
Peak Flow into Bypass Basin cfs =	-	
Volume into Bypass Basin cf =	-	

INSTRUCTIONS

1. Under File-Options-Formulas
Check Iterative Calculations
200 iterations
0.001 tolerance
2. Input data in blue fields
3. Press F9 to manually
calculate the hydrology data
if Volume Difference in
B19 is not 0.
4. Choose rain zone at:
vcwatershed.net/publicMaps/data/

Flow-Through Basin Data

Elev. ft	Storage af	Disch. cfs
0.0	0.00	0.00
0.5	0.01	0.54
1.0	0.02	1.31
1.5	0.04	1.83
2.0	0.05	2.22
2.5	0.06	2.53
3.0	0.10	2.83
3.5	0.15	3.09
4.0	1.0	5.0

DMA 3

Tc Calculator Data Sheet V6.1

Project Name and Number: **Oxnard AC**

USER INPUT IN BLUE FIELDS:		
Subarea Name =	DMA 3	User Input
Watershed Area ac =	1.8	Calculated from flowpath data
% Imperviousness =	62	User Input
Land Use Description =	Public	DropMenu
Storm Frequency	10	DropMenu
Storm Zone =	Oxnard Pln-Nyeland	DropMenu
Zone ID =	Rev2_10	Calculated
District Soil Number (1-7) =	2	DropMenu- Rev for Revised C Coefficients
Tc for Intensity Calc min =	**14.00**	**Rounded, Use for Peak Flow Calc.**
Intensity in/hr =	1.663	Calculated
C_undeveloped =	0.726	Calculated
C_composite =	0.865	Calculated
Peak cfs =	2.61	Calculated
Calculated Tc=	**14.46**	**Calculated**

Instructions:

1. Set to manual calculations with File->Options->Formulas
2. Set max iterative calculations to 50
3. Enter required subarea and flowpath data in blue fields
4. Use site-specific topo or District 2005 LiDAR data for elevations
5. LiDAR and rain zone data at: http://vcwatershed.net/publicMaps/data
6. Clear any unnessary flowpath data from blue fields
7. Manually calculate with F9 or Formulas->Calculate Now
8. If error or comments appear, revise input data accordingly
9. Tc's in cells C12 and C17 should converge to the nearest minute.
10. Use result in C12 for peak flow calculation.
11. Print area is set for printing this page on one sheet.

FLOWPATH DATA- UPSTREAM TO DOWNSTREAM

Flowpath Number	Type- Selected with DropMenus	Type#	Flowpath Area ac	Upper Elev. Ft	Bott. Elev. Ft	Length ft	Map Slope ft/ft	Mtn Chan. Eff. Slope ft/ft	Diam/ Width ft	n value	Side-slope X; XH:1V	% Area	Q cfs	Cum. Q cfs
1	Overland-Developed	2	1.80	37.5	35.5	350	0.006					100.0%	2.6	2.6
2	None	0					#VALUE!	#VALUE!				0.0%	-	2.6
3	None	0										0.0%	-	2.6
4	None	0										0.0%	-	2.6
5	None	0										0.0%	-	2.6
6	None	0										0.0%	-	2.6
7	None	0										0.0%	-	2.6
8	None	0										0.0%	-	2.6
9	None	0										0.0%	-	2.6
10	None	0										0.0%	-	2.6
Sum			**1.8**									**100%**	**2.6**	

DMA 3

VCRat Single Subarea Hydrograph, Mitigation, and Detention Basin Routing Calculations

Project Information: **Test Hydrograph, Ventura County**

DEVELOPED CONDITION INPUT DATA		
Watershed Area ac =	1.80	User Input
Time of Concentration Tc min =	14.5	User Input
% Imperviousness =	62	User Input
Land Use Description =	Parking lot & AC	User Input
Storm Zone =	Oxnard Pln-Nyeland	Dropdown List
Storm Frequency =	10	Dropdown List
District Soil Number =	2	Dropdown List
NRCS Curve Number Yield in =	2.22	User Input
MITIGATION INPUT DATA		
Mitigation Level	10-yr Dev	User Input
Time of Concentration Tc min =	2	Tc outside of requi
Storm Frequency =	10	Dropdown List
% Effective Imperviousness =	62	User Input
Land Use Description =		User Input
CALCULATION RESULTS		
Iteration Volume Difference cf =	0.000	
Dev. Subarea Outflow Peak cfs =	2.61	
FLOW THROUGH BASIN RESULTS		
Basin Inflow Peak cfs =	2.61	
Mitigated Hydrograph Peak cfs =	4.54	
Routed Hydrograph Peak cfs =	0.86	
Max Basin Storage af =	0.0142	
Max Basin Elevation ft =	0.71	
BYPASS BASIN RESULTS		
Inflow Hydrograph Peak cfs =	2.61	
Mitigation Hydrograph Peak cfs =	4.54	
Peak Flow into Bypass Basin cfs =	-	
Volume into Bypass Basin cf =	-	

INSTRUCTIONS

1. Under File-Options-Formulas
Check Iterative Calculations
200 iterations
0.001 tolerance
2. Input data in blue fields
3. Press F9 to manually
calculate the hydrology data
if Volume Difference in
B19 is not 0.
4. Choose rain zone at:
vcwatershed.net/publicMaps/data/

Flow-Through Basin Data		
Elev. ft	Storage af	Disch. cfs
0.0	0.00	0.00
0.5	0.01	0.54
1.0	0.02	1.31
1.5	0.04	1.83
2.0	0.05	2.22
2.5	0.06	2.53
3.0	0.10	2.83
3.5	0.15	3.09
4.0	1.0	5.0

DMA 4

Tc Calculator Data Sheet V6.1

Project Name and Number: **Oxnard AC**

USER INPUT IN BLUE FIELDS:		
Subarea Name =	DMA 4	User Input
Watershed Area ac =	0.8	Calculated from flowpath data
% Imperviousness =	59	User Input
Land Use Description =	Public	DropMenu
Storm Frequency	10	DropMenu
Storm Zone =	Oxnard Pln-Nyeland	DropMenu
Zone ID =	Rev2_10	Calculated
District Soil Number (1-7) =	2	DropMenu- Rev for Revised C Coefficients
Tc for Intensity Calc min =	**6.00**	**Rounded, Use for Peak Flow Calc.**
Intensity in/hr =	2.520	Calculated
C_undeveloped =	0.801	Calculated
C_composite =	0.889	Calculated
Peak cfs =	1.83	Calculated
Calculated Tc=	**5.77**	**Calculated**

Instructions:

1. Set to manual calculations with File->Options->Formulas
2. Set max iterative calculations to 50
3. Enter required subarea and flowpath data in blue fields
4. Use site-specific topo or District 2005 LiDAR data for elevations
5. LiDAR and rain zone data at: http://vcwatershed.net/publicMaps/data
6. Clear any unessary flowpath data from blue fields
7. Manually calculate with F9 or Formulas->Calculate Now
8. If error or comments appear, revise input data accordingly
9. Tc's in cells C12 and C17 should converge to the nearest minute.
10. Use result in C12 for peak flow calculation.
11. Print area is set for printing this page on one sheet.

FLOWPATH DATA- UPSTREAM TO DOWNSTREAM

Flowpath Number	Type- Selected with DropMenus	Type#	Flowpath Area ac	Upper Elev. Ft	Bott. Elev. Ft	Length ft	Map Slope ft/ft	Mtn Chan. Eff. Slope ft/ft	Diam/ Width ft	n value	Side-slope X; XH:1V	% Area	Q cfs	Cum. Q cfs
1	Overland-Developed	2	0.81	37.5	35.5	142	0.014					100.0%	1.8	1.8
2	None	0					#VALUE!	#VALUE!				0.0%	-	1.8
3	None	0										0.0%	-	1.8
4	None	0										0.0%	-	1.8
5	None	0										0.0%	-	1.8
6	None	0										0.0%	-	1.8
7	None	0										0.0%	-	1.8
8	None	0										0.0%	-	1.8
9	None	0										0.0%	-	1.8
10	None	0										0.0%	-	1.8
Sum			**0.8**									**100%**	**1.8**	

DMA 4

VCRat Single Subarea Hydrograph, Mitigation, and Detention Basin Routing Calculations

Project Information: **Test Hydrograph, Ventura County**

DEVELOPED CONDITION INPUT DATA		
Watershed Area ac =	0.81	User Input
Time of Concentration Tc min =	5.8	User Input
% Imperviousness =	59	User Input
Land Use Description =	Parking lot & AC	User Input
Storm Zone =	Oxnard Pln-Nyeland	Dropdown List
Storm Frequency =	10	Dropdown List
District Soil Number =	2	Dropdown List
NRCS Curve Number Yield in =	2.82	User Input
MITIGATION INPUT DATA		
Mitigation Level	10-yr Dev	User Input
Time of Concentration Tc min =	2	Tc outside of requi
Storm Frequency =	10	Dropdown List
% Effective Imperviousness =	59	User Input
Land Use Description =		User Input
CALCULATION RESULTS		
Iteration Volume Difference cf =	0.000	
Dev. Subarea Outflow Peak cfs =	2.04	
FLOW THROUGH BASIN RESULTS		
Basin Inflow Peak cfs =	2.04	
Mitigated Hydrograph Peak cfs =	2.04	
Routed Hydrograph Peak cfs =	0.86	
Max Basin Storage af =	0.0142	
Max Basin Elevation ft =	0.71	
BYPASS BASIN RESULTS		
Inflow Hydrograph Peak cfs =	2.04	
Mitigation Hydrograph Peak cfs =	2.04	
Peak Flow into Bypass Basin cfs =	-	
Volume into Bypass Basin cf =	-	

INSTRUCTIONS

1. Under File-Options-Formulas
Check Iterative Calculations
200 iterations
0.001 tolerance
2. Input data in blue fields
3. Press F9 to manually
calculate the hydrology data
if Volume Difference in
B19 is not 0.
4. Choose rain zone at:
vcwatershed.net/publicMaps/data/

Flow-Through Basin Data		
Elev. ft	Storage af	Disch. cfs
0.0	0.00	0.00
0.5	0.01	0.54
1.0	0.02	1.31
1.5	0.04	1.83
2.0	0.05	2.22
2.5	0.06	2.53
3.0	0.10	2.83
3.5	0.15	3.09
4.0	1.0	5.0

TOTAL SITE

Tc Calculator Data Sheet V6.1

Project Name and Number: **Oxnard AC**

USER INPUT IN BLUE FIELDS:		
Subarea Name =	TOTAL	User Input
Watershed Area ac =	5.1	Calculated from flowpath data
% Imperviousness =	63	User Input
Land Use Description =	Public	DropMenu
Storm Frequency	10	DropMenu
Storm Zone =	Oxnard Pln-Nyeland	DropMenu
Zone ID =	Rev2_10	Calculated
District Soil Number (1-7) =	2	DropMenu- Rev for Revised C Coefficients
Tc for Intensity Calc min =	**13.00**	**Rounded, Use for Peak Flow Calc.**
Intensity in/hr =	1.726	Calculated
C_undeveloped =	0.732	Calculated
C_composite =	0.869	Calculated
Peak cfs =	7.72	Calculated
Calculated Tc=	**13.15**	**Calculated**

Instructions:

1. Set to manual calculations with File->Options->Formulas
2. Set max iterative calculations to 50
3. Enter required subarea and flowpath data in blue fields
4. Use site-specific topo or District 2005 LiDAR data for elevations
5. LiDAR and rain zone data at: http://vcwatershed.net/publicMaps/data
6. Clear any unessary flowpath data from blue fields
7. Manually calculate with F9 or Formulas->Calculate Now
8. If error or comments appear, revise input data accordingly
9. Tc's in cells C12 and C17 should converge to the nearest minute.
10. Use result in C12 for peak flow calculation.
11. Print area is set for printing this page on one sheet.

FLOWPATH DATA- UPSTREAM TO DOWNSTREAM

Flowpath Number	Type- Selected with DropMenus	Type#	Flowpath Area ac	Upper Elev. Ft	Bott. Elev. Ft	Length ft	Map Slope ft/ft	Mtn Chan. Eff. Slope ft/ft	Diam/ Width ft	n value	Side-slope X; XH:1V	% Area	Q cfs	Cum. Q cfs
1	Overland-Developed	2	5.10	37	33	322	0.012					100.0%	7.7	7.7
2	None	0					#VALUE!	#VALUE!				0.0%	-	7.7
3	None	0										0.0%	-	7.7
4	None	0										0.0%	-	7.7
5	None	0										0.0%	-	7.7
6	None	0										0.0%	-	7.7
7	None	0										0.0%	-	7.7
8	None	0										0.0%	-	7.7
9	None	0										0.0%	-	7.7
10	None	0										0.0%	-	7.7
Sum			**5.1**									**100%**	**7.7**	

TOTAL SITE

VCRat Single Subarea Hydrograph, Mitigation, and Detention Basin Routing Calculations

Project Information: Test Hydrograph, Ventura County

DEVELOPED CONDITION INPUT DATA		
Watershed Area ac =	5.10	User Input
Time of Concentration Tc min =	13.15	User Input
% Imperviousness =	63	User Input
Land Use Description =	Parking lot & AC	User Input
Storm Zone =	Oxnard Pln-Nyeland	Dropdown List
Storm Frequency =	10	Dropdown List
District Soil Number =	2	Dropdown List
NRCS Curve Number Yield in =	3.01	User Input
MITIGATION INPUT DATA		
Mitigation Level	10-yr Dev	User Input
Time of Concentration Tc min =	13	User Input
Storm Frequency =	10	Dropdown List
% Effective Imperviousness =	63	User Input
Land Use Description =		User Input
CALCULATION RESULTS		
Iteration Volume Difference cf =	0.000	
Dev. Subarea Outflow Peak cfs =	7.72	
FLOW THROUGH BASIN RESULTS		
Basin Inflow Peak cfs =	7.72	
Mitigated Hydrograph Peak cfs =	7.72	
Routed Hydrograph Peak cfs =	0.86	
Max Basin Storage af =	0.0142	
Max Basin Elevation ft =	0.71	
BYPASS BASIN RESULTS		
Inflow Hydrograph Peak cfs =	7.72	
Mitigation Hydrograph Peak cfs =	7.72	
Peak Flow into Bypass Basin cfs =	-	
Volume into Bypass Basin cf =	-	

INSTRUCTIONS

1. Under File-Options-Formulas
Check Iterative Calculations
200 iterations
0.001 tolerance
2. Input data in blue fields
3. Press F9 to manually
calculate the hydrology data
if Volume Difference in
B19 is not 0.
4. Choose rain zone at:
vcwatershed.net/publicMaps/data/

Flow-Through Basin Data		
Elev. ft	Storage af	Disch. cfs
0.0	0.00	0.00
0.5	0.01	0.54
1.0	0.02	1.31
1.5	0.04	1.83
2.0	0.05	2.22
2.5	0.06	2.53
3.0	0.10	2.83
3.5	0.15	3.09
4.0	1.0	5.0

TOTAL SITE - EXISTING CONDITIONS

Tc Calculator Data Sheet V6.1

Project Name and Number: Oxnard AC

USER INPUT IN BLUE FIELDS:		
Subarea Name =	TOTAL	User Input
Watershed Area ac =	5.1	Calculated from flowpath data
% Imperviousness =	0	User Input
Land Use Description =	Public	DropMenu
Storm Frequency	10	DropMenu
Storm Zone =	Oxnard Pln-Nyeland	DropMenu
Zone ID =	Rev2_10	Calculated
District Soil Number (1-7) =	2	DropMenu- Rev for Revised C Coefficients
Tc for Intensity Calc min =	**15.00**	**Rounded, Use for Peak Flow Calc.**
Intensity in/hr =	1.608	Calculated
C_undeveloped =	0.720	Calculated
C_composite =	0.720	Calculated
Peak cfs =	5.95	Calculated
Calculated Tc=	**14.70**	**Calculated**

Instructions:

1. Set to manual calculations with File->Options->Formulas
2. Set max iterative calculations to 50
3. Enter required subarea and flowpath data in blue fields
4. Use site-specific topo or District 2005 LiDAR data for elevations
5. LiDAR and rain zone data at: http://vcwatershed.net/publicMaps/data
6. Clear any unnessary flowpath data from blue fields
7. Manually calculate with F9 or Formulas->Calculate Now
8. If error or comments appear, revise input data accordingly
9. Tc's in cells C12 and C17 should converge to the nearest minute.
10. Use result in C12 for peak flow calculation.
11. Print area is set for printing this page on one sheet.

FLOWPATH DATA- UPSTREAM TO DOWNSTREAM

Flowpath Number	Type- Selected with DropMenus	Type#	Flowpath Area ac	Upper Elev. Ft	Bott. Elev. Ft	Length ft	Map Slope ft/ft	Mtn Chan. Eff. Slope ft/ft	Diam/ Width ft	n value	Side- slope X; XH:1V	% Area	Q cfs	Cum. Q cfs
1	Overland-Developed	2	5.10	38.8	34.4	360	0.012					100.0%	6.0	6.0
2	None	0					#VALUE!	#VALUE!				0.0%	-	6.0
3	None	0										0.0%	-	6.0
4	None	0										0.0%	-	6.0
5	None	0										0.0%	-	6.0
6	None	0										0.0%	-	6.0
7	None	0										0.0%	-	6.0
8	None	0										0.0%	-	6.0
9	None	0										0.0%	-	6.0
10	None	0										0.0%	-	6.0
Sum			**5.1**									**100%**	**6.0**	

TOTAL SITE - EXISTING CONDITIONS

VCRat Single Subarea Hydrograph, Mitigation, and Detention Basin Routing Calculations

Project Information: **Test Hydrograph, Ventura County**

DEVELOPED CONDITION INPUT DATA		
Watershed Area ac =	5.10	User Input
Time of Concentration Tc min =	14.7	User Input
% Imperviousness =	0	User Input
Land Use Description =	Parking lot & AC	User Input
Storm Zone =	Oxnard Pln-Nyeland	Dropdown List
Storm Frequency =	10	Dropdown List
District Soil Number =	2	Dropdown List
NRCS Curve Number Yield in =	1.74	User Input
MITIGATION INPUT DATA		
Mitigation Level	10-yr Dev	User Input
Time of Concentration Tc min =	15	User Input
Storm Frequency =	10	Dropdown List
% Effective Imperviousness =	0	User Input
Land Use Description =		User Input
CALCULATION RESULTS		
Iteration Volume Difference cf =	0.000	
Dev. Subarea Outflow Peak cfs =	6.21	
FLOW THROUGH BASIN RESULTS		
Basin Inflow Peak cfs =	6.21	
Mitigated Hydrograph Peak cfs =	6.21	
Routed Hydrograph Peak cfs =	0.86	
Max Basin Storage af =	0.0142	
Max Basin Elevation ft =	0.71	
BYPASS BASIN RESULTS		
Inflow Hydrograph Peak cfs =	6.21	
Mitigation Hydrograph Peak cfs =	6.21	
Peak Flow into Bypass Basin cfs =	-	
Volume into Bypass Basin cf =	-	

INSTRUCTIONS

1. Under File-Options-Formulas
Check Iterative Calculations
200 iterations
0.001 tolerance
2. Input data in blue fields
3. Press F9 to manually
calculate the hydrology data
if Volume Difference in
B19 is not 0.
4. Choose rain zone at:
vcwatershed.net/publicMaps/data/

Flow-Through Basin Data

Elev. ft	Storage af	Disch. cfs
0.0	0.00	0.00
0.5	0.01	0.54
1.0	0.02	1.31
1.5	0.04	1.83
2.0	0.05	2.22
2.5	0.06	2.53
3.0	0.10	2.83
3.5	0.15	3.09
4.0	1.0	5.0

APPENDIX E

Geotechnical Report

and CPT logs are presented in Appendices A and B, respectively, and the approximate locations of the borings and CPT soundings are shown on Figure 2.

Geotechnical laboratory testing of representative soil samples included tests to evaluate in-situ moisture content and dry density, the percentage of particles finer than the number 200 sieve, Atterberg limits, consolidation, direct shear strength, R-value, and soil corrosivity. In-situ moisture content and dry density test results are presented on the boring logs in Appendix A. The remaining laboratory test results are presented in Appendix C.

In-situ percolation testing was performed in one boring (B-4) to evaluate the infiltration rates of the on-site soils at a potential stormwater infiltration location for the project. Details regarding the percolation testing are provided in the Field Percolation Testing section of this report.

5 GEOLOGY AND SUBSURFACE CONDITIONS

5.1 Regional Geologic Setting

The project site is located within the Ventura Basin, which is situated in the Transverse Ranges Geomorphic Province (Norris and Webb, 1990). The Ventura Basin is part of a large synclinal fold approximately 120 miles in length that extends from the Santa Barbara Channel inland to the Santa Clarita region and it is underlain by marine Cretaceous to Cenozoic sedimentary rocks (Norris and Webb, 1990). The site is located on the broad, relatively flat coastal lowlands of the Oxnard Plain, which are underlain by variable thicknesses of Holocene alluvium. According to the California Division of Mines and Geology (CDMG, 2002a), the Oxnard Plain is covered by approximately 200 to 250 feet of Holocene-age sediments derived from the highland regions of northern Ventura and western Los Angeles counties and deposited by the Santa Clara River.

The proposed new aquatic center is located along a drainage channel located on a coastal alluvial plain approximately 3 miles from the Pacific Ocean. Prior to land development activities in the mid-1970s, the area in the vicinity of the site was farmland and ranch lands (Historic Aerials, 2022). Regional geologic mapping indicates that the site is underlain by Holocene-age alluvial fan and flood plain overbank deposits consisting of predominantly of clay with interbedded lenses of sand and occasional gravel (Figure 3) (Clahan, 2003). Our review of geologic literature and aerial photographs did not indicate the presence of landslides or active faulting at the site.

5.2 Site Geology

The results of our subsurface exploration indicate that the site is underlain by fill soils and alluvium. Fill soils were encountered at the ground surface in borings B-5 and B-7 through B-15 to depths ranging from approximately 4 to 6½ feet below the ground surface. The fill generally consisted of moist, loose to medium dense, silty sand with gravel. Alluvium was encountered at the ground surface in borings B-1 through B-4 and B-6, and below the fill soils in the above borings to the total depths explored of up to approximately 31½ feet. The alluvium generally consisted of moist to wet, loose to very dense silty sand, clayey sand, and poorly graded sand, and firm to very stiff silt and lean clay.

6 GROUNDWATER

Groundwater was observed in our exploratory borings at depths ranging from approximately 12 to 16 feet below the ground surface. Groundwater was also encountered in Earth Systems' borings near the project site as shallow as approximately 7½ feet below the ground surface (Earth Systems, 2007) (Appendix D). Regional maps indicate that the historic high groundwater level in the vicinity of the site is approximately 7 feet below the ground surface (CDMG, 2002a). Groundwater levels observed at the time of drilling are not considered stabilized. It should be noted that fluctuations in the level of groundwater will occur due to variations in ground surface topography, subsurface stratification, rainfall, irrigation practices, groundwater pumping, and other factors which may not have been evident at the time of our field evaluation.

7 FIELD PERCOLATION TESTING

Percolation testing was performed in boring B-4 in general accordance with the Ventura County Technical Guidance Manual for Stormwater Quality Control Measures (VCTGM) (GCLWA, 2018). The testing was performed to evaluate the infiltration rate of the on-site soils in the general vicinity of a possible stormwater infiltration area for use in design of Best Management Practices (BMPs) by others. The approximate location of the percolation test boring (B-4) is shown on Figure 2.

Boring B-4 was drilled to a depth of approximately 5 feet below the existing ground surface. Preparation of the drilled boring for percolation testing included the installation of a 2-inch-diameter polyvinyl chloride (PVC) pipe in the boring and backfilling the annular space between the borehole wall and pipe with clean pea gravel. After the boring was pre-soaked for 24 hours, a Falling-Head Borehole Infiltration Test (GCLWA, 2018) was performed in the boring. The falling-head test method involved placing clean water into the PVC pipe to a depth of approximately 26 inches below the ground surface. The depth of the water was measured after one hour. The PVC pipe was refilled to a depth of 26 inches below the ground surface and the test procedure was repeated for a total of four times. The last field percolation rate measurement was 14 inches per hour.

Based on our preliminary percolation testing and the VCTGM, the site may be suitable for stormwater infiltration using a relatively shallow infiltration BMP, such as permeable pavements, infiltration trenches, and vegetated swales. However, the design infiltration rate should first be calculated using the above field percolation rate divided by a Safety Factor. The Safety Factor should be calculated based on several "Suitability Assessment" and "Design" factors, as described in the VCTGM and shown in Table 1 below. Based on our knowledge of the site, we have inserted values the Suitability Assessment Factor Category; however, the Design Factor Category should be based on information provided by the project civil engineer.

Table 1 – Infiltration Facility Safety Factor Worksheet

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p)
A	Suitability Assessment	Soil Assessment Methods	0.25	3	0.75
		Predominant Soil Texture	0.25	3	0.75
		Site Soil Variability	0.25	2	0.50
		Depth to Groundwater / Impervious Layer	0.25	3	0.75
		Suitability Assessment Safety Factor, $S_A = \sum p$			2.75
B	Design	Tributary Area Size	0.25	TBD	TBD
		Level of Pre-Treatment / Expected Sediment Loads	0.25	TBD	TBD
		Redundancy	0.25	TBD	TBD
		Compaction During Construction	0.25	TBD	TBD
		Design Safety Factor, $S_B = \sum p$			TBD
Combined Safety Factor = S_A x S_B					

Notes:
TBD – To be determined by the project civil engineer

As discussed in the VCTGM, some additional limitations should be considered before choosing an infiltration BMP, including the following:

- A 5-foot vertical separation is needed between the bottom of the infiltration BMP and groundwater. Due to a historic high groundwater of approximately 7 feet below the ground surface, the BMP invert should be 2 feet deep, or less.
- Infiltration BMPs must be setback from building foundations of 8 feet or more; however, we typically recommend a setback from building foundations of 15 feet or more.

8 FAULTING AND SEISMICITY

The site is located in a seismically active area, as is the majority of southern California, and the potential for strong ground motion in the project area is considered significant during the design life of the proposed improvements. Figure 4 shows the approximate site location relative to the principal faults in the region. Based on our background review and site reconnaissance, the project site is not transected by known active or potentially active faults, nor is it located within a

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Appendix G

CEQA Transportation Analysis

FEHR & PEERS

Memorandum

REGISTERED PROFESSIONAL ENGINEER
SARAH BRANDENBERG
NO. TR2213
Exp.
TRAFFIC
STATE OF CALIFORNIA

Sarah Brandenberg

Date: January 13, 2023

To: Reza Bagherzadeh & Kumar Neppalli, City of Oxnard

From: John Muggridge, Nico Boyd & Sarah Brandenberg, Fehr & Peers

Subject: CEQA Transportation Analysis for the South Oxnard Aquatics Center Project

LA22-3410

This memorandum has been prepared at the request of the City of Oxnard to evaluate the South Oxnard Aquatics Center project's (Project) potential to result in a significant transportation impact under the California Environmental Quality Act (CEQA). In addition to describing the Vehicle Miles Traveled (VMT) analysis that was conducted for the Project, this memorandum also summarizes the analyses that were conducted for the other items in the City of Oxnard's CEQA checklist. The CEQA checklist items that were analyzed were based on the City of Oxnard CEQA Guidelines (May 2017) and CEQA Guidelines Section 15064.3. The CEQA checklist items are as follows:

- Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3?
- Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
- Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Would the project result in inadequate emergency access?
- Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

The following sections present the Project description, the daily and peak hour trip generation estimates that have been developed for the Project, and the CEQA transportation analyses that were conducted for the Project, including the qualitative assessment of Project-generated VMT.

Project Description

The City of Oxnard proposes to construct the South Oxnard Aquatics Center (Project) on a 7.93-acre site at the southeast corner of College Park, which is located at 3250 South Rose Avenue in Oxnard, California (**Figure 1**). Specifically, the Project encompasses portions of Section 14 of Township 1N, Range 22W on the Oxnard Quadrangle, California United States Geological Survey (USGS) 7.5-minute topographic quadrangle (**Figure 2**).

The Project includes construction of a 23,571 square foot outdoor swim area with a 50-meter competition pool, 25-yard instructional pool, and fun water shallow pool, slide, and splash pad. The Project also includes construction of a 18,342 square foot one-story "L" shaped building which will frame the western and eastern sides of the pool deck. The building will include locker rooms, administrative space, and utility rooms to support the aquatic activities. The Project includes construction of a dedicated parking lot with 103 parking stalls north of the aquatics center. The parking lot will be supplemented by the existing parking adjacent to the soccer field along College Park's ring road as well as existing adjacent parking lots within the park. The City anticipates that the aquatics center would serve only the local community of Oxnard, and would not be used for regional events. **Figure 3** shows the Project site plan.

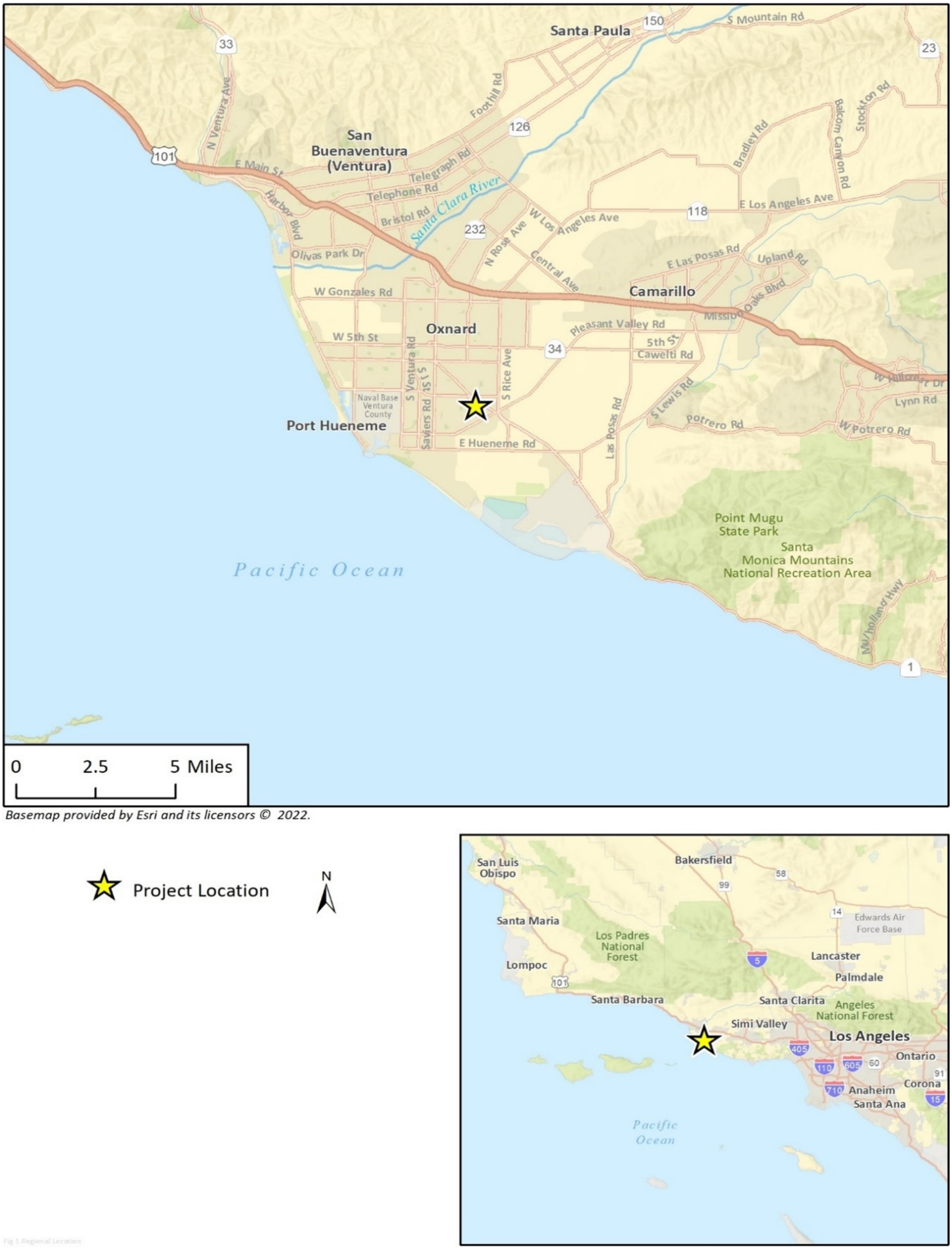
Trip Generation

Based on attendance estimates prepared by ELS Architecture + Urban Design, it is anticipated that the summer season (Memorial Day to Labor Day) will be the season with the highest levels of visitation of the Project, with daily attendance of approximately 4,425 visitors on a weekend day with a total of 100 employees on site over the course of the day. According to information provided by the City and ELS Architecture + Urban design, it is expected that visitation will be higher on weekend days than on weekdays, with the peak hour of visitation occurring in the early afternoon. Because of this, daily and midday trip generation estimates were developed for the Project for a weekend day during the summer season.

Trip generation estimates were developed for the Project using daily attendance estimates and estimates of the number of arrivals per hour provided by ELS Architecture + Urban Design, estimates of average vehicle occupancy (AVO) developed by Hotel & Leisure Advisors for the Elk Grove Civic Center Aquatics Complex EIR[1], and estimates of the directional distribution of trips (inbound vs. outbound trips) from the Institute of Transportation Engineers (Trip Generation, 11th

---

[1] The Elk Grove Civic Center Aquatics Complex EIR includes a comparable transportation study for an aquatics center in a similar urban context as the proposed Project. Because of this, assumptions from the Elk Grove Civic Center Aquatics Complex EIR were used to inform the trip generation estimates for the proposed Project.



Basemap provided by Esri and its licensors © 2022.

Fig 1 Regional Location

Figure 1

Regional Project Location

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Imagery provided by Microsoft Bing and its licensors © 2022

Fig 2 Project Location_Landscape

Figure 2

Project Site Boundary

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

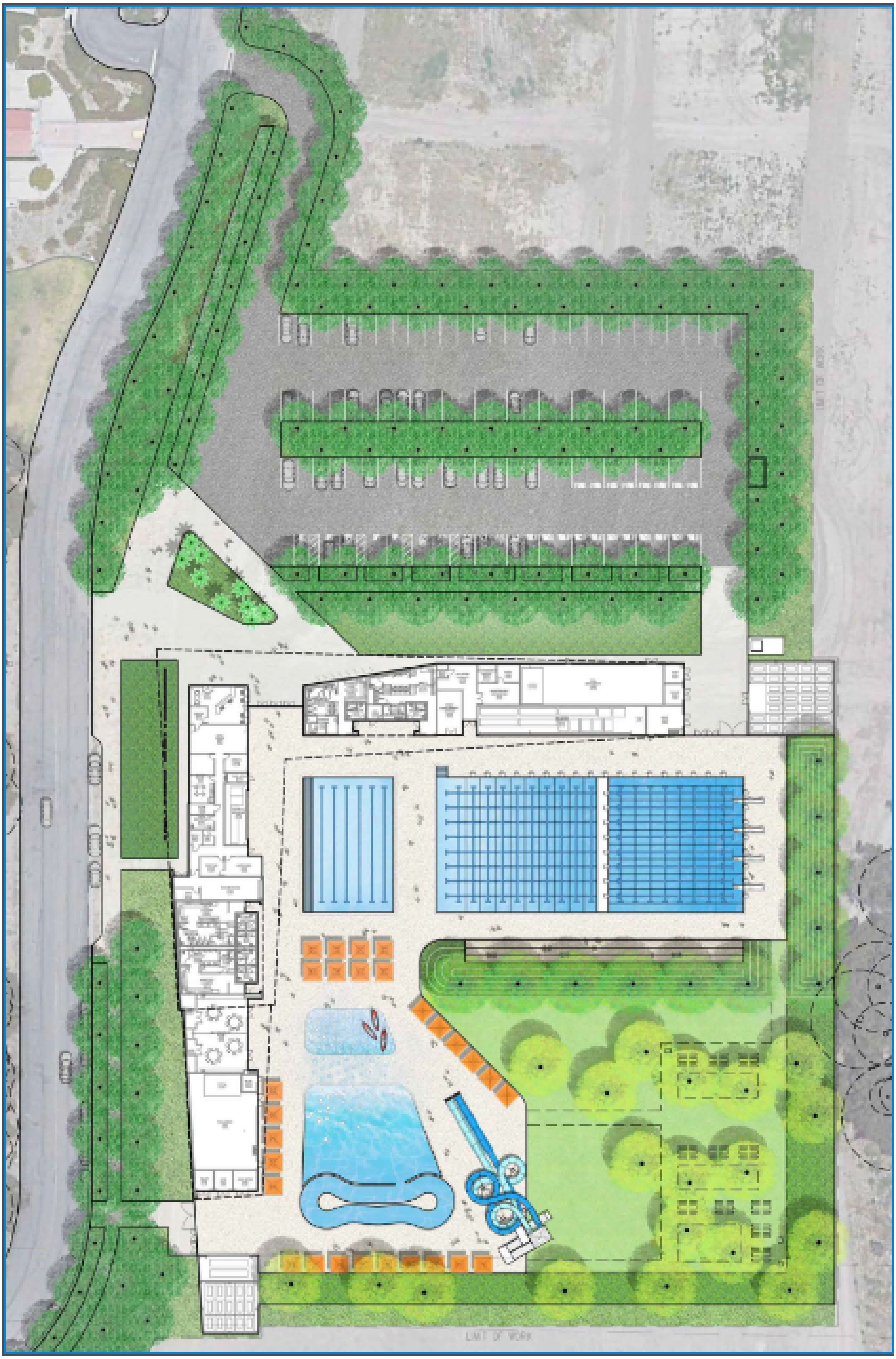


Figure 3

Project Site Plan

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL
DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

Edition) using Land Use Code 482 – Water Slide Park. **Table 1** presents the vehicle trip generation estimates for the Project.

Table 1. Project Trip Generation Estimates

Land Use	Daily Attendance (Persons)[2]	Auto Occupancy[3] (Persons/ Vehicle)	Vehicles	Estimated Trip Generation			
				Daily[4]	MD Peak Hour Trips		
					In[5]	Out[6]	Total
Aquatics Center[1]	4,425	2.3	1,924	3,848	261	189	450
Total External Vehicle Trips				*3,848*	*261*	*189*	*450*

Notes:

[1] Summer Season (Memorial Day to Labor Day) Hours of Operation - 5am-8pm Monday through Thursday, 5am-10pm Friday, 10am-10pm Saturday, 10am-8pm Sunday. Off Season (Fall/Winter/Spring) Hours of Operation - 5am-8pm Monday through Friday, 10am-8pm Saturday and Sunday. Analysis scenarios include Saturday peak hour (~1-2pm) conditions, which are estimated to be the peak annual demand.

[2] Attendance estimate based on usage levels developed by ELS Architecture + Urban Design.

[3] Auto occupancy based on the ratio of total visitors to adult chaperones developed by Hotel & Leisure Advisors for the Elk Grove Civic Center Aquatics Complex EIR.

[4] Daily vehicle trips developed by multiplying total vehicles by two to account for vehicles entering and exiting the project.

[5] Estimate of inbound vehicle trips during the midday peak hour based on estimated visitor arrivals developed by ELS Architecture + Urban Design. The estimate of 600 peak hour visitor arrivals was divided by the average auto occupancy of 2.3.

[6] Estimate of outbound vehicle trips during the midday peak hour based on the directional distribution from Trip Generation, 11th Edition (Institute of Transportation Engineers) for Water Slide Park (Land Use 482) for the Saturday Peak Hour of the Generator.

Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3?

The City of Oxnard is currently developing guidance on VMT impact analysis consistent with the *Technical Advisory on Evaluating Transportation Impacts* in CEQA, California Governor's Office of Planning and Research (OPR), December 2018 for office, retail, industrial, and residential land uses. However, neither the City's nor OPR's guidance provide direction on how VMT should be assessed for aquatics center uses.

OPR recommends screening local-serving serving uses from conducting a VMT analysis on the grounds that local-serving uses tend to shorten trips and reduce VMT. While the OPR guidance specifically applies this logic to retail development projects, the same logic can be applied to other local-serving land use development projects. The CEQA Guidelines Section 15064.3(b)(3) allow for the use of a qualitative methodology and recommend considering factors such as the availability of transit and proximity to other destinations to gauge potential VMT impacts. These factors influence the ability to access the project site by walking, bicycling, and transit while also contributing to shorter trip lengths for vehicle trips. Another factor in qualitative assessment is whether the approval of the project would encourage development in a travel efficient location (page 17, OPR *Technical Advisory*). Therefore, for this study, a project would be considered to generate a significant impact if it is estimated to result in a net increase in VMT.

The City of Oxnard currently has one public swimming pool, located at the Colonia Park Recreation Center in North Oxnard at 197 N Marquita Street. City of Oxnard residents may utilize this existing swimming pool or travel to comparable facilities in neighboring jurisdictions, including the City of Ventura and the City of Camarillo. Because the City of Oxnard anticipates that the aquatics center would serve only the local community of Oxnard, and would not be used for regional events, the Project would allow residents of South Oxnard to travel a shorter distance to access a public pool than under existing conditions. While the Project would generate new employment that would generate new vehicle trips and VMT, these trips and VMT are expected to be offset by the much larger number of visitors using the site, especially over the course of a full year. Given the proposed Project land use (aquatics center) and the location (conveniently located near residential neighborhoods in South Oxnard), the majority of trips to the Project site are likely to be shifted trips rather than new trips and the trip lengths would likely be similar, if not shorter, than existing trips to other aquatics centers/recreational uses. Therefore, the net effect of the Project on VMT would be negligible or possibly negative.

Impact Assessment

Based on the evidence presented above, it is concluded that the Project could be presumed to have a **less than significant VMT impact**.

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

The Oxnard Airport is approximately 3.14 miles northwest of the project site. The project site is outside of the airport's sphere of influence, defined in the Municipal Code as bounded by Wooley Road, approximately 2.05 miles northwest of the project site (City of Oxnard, 2022). Because the project site is not within the airport sphere of influence, the aquatics center would not interfere with air traffic from the Oxnard Airport.

The project site is located approximately 3.5 miles northwest of the airport landing strip on the Naval Base Ventura County (NBVC) Point Mugu. The project site is within the 500-foot airfield imaginary surface but is not within the flight path for the NBVC Point Mugu. The proposed building would not exceed 25 feet in height, and would not interfere with air traffic from the NBVC Point Mugu.

Additionally, the Project does not feature a helicopter landing pad and would therefore not generate new air traffic or divert existing air traffic. For these reasons, it is not anticipated that the Project would result in a change in air traffic patterns.

Impact Assessment

Based on the evidence presented above, it is concluded that the Project could be presumed to have **no impact**.

Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Impacts regarding the potential increase of hazards due to a geometric design feature generally relate to the design of access points to and from the Project site. Impacts can be related to vehicle/vehicle, vehicle/bicycle, or vehicle/pedestrian conflicts as well as to operational delays caused by vehicles slowing and/or queuing to access a project site. These conflicts may be created by the driveway configuration or through the placement of project driveway(s) in areas of inadequate visibility, adjacent to bicycle or pedestrian facilities, or too close to busy or congested intersections. These impacts are typically evaluated for permanent conditions after project completion but can also be evaluated for temporary conditions during project construction.

As shown in the Project site plan in **Figure 3**, the Project is adding a new driveway with an alignment that is perpendicular to the public right-of-way (College Park ring road). The new driveway is adequately spaced from existing signalized and unsignalized intersections, and the Project does not introduce land uses that are incompatible with the surrounding community. The site access and circulation configuration were evaluated based on the proposed Project site plan to determine its adequacy based on traffic engineering principles and the anticipated number of vehicle trips during the mid-day peak hour. The evaluation included a vehicle turn template analysis to determine whether the Project driveway width is adequate and a sight distance analysis to determine whether there is adequate visibility from the Project driveway to ensure that oncoming vehicles on the ring road have enough time to reach a complete stop if a vehicle exits the Project driveway. **Figure 4** presents the vehicle turn template analysis, and **Figure 5** presents the sight distance analysis. As shown in the figures, the Project driveway width is sufficient to allow incoming and exiting vehicles to pass one another, and the stopping sight distance and corner sight distance are sufficient to allow adequate visibility from the Project driveway (for vehicles exiting the Project parking lot) and to the Project driveway (for oncoming vehicles approaching the driveway.

Impact Assessment

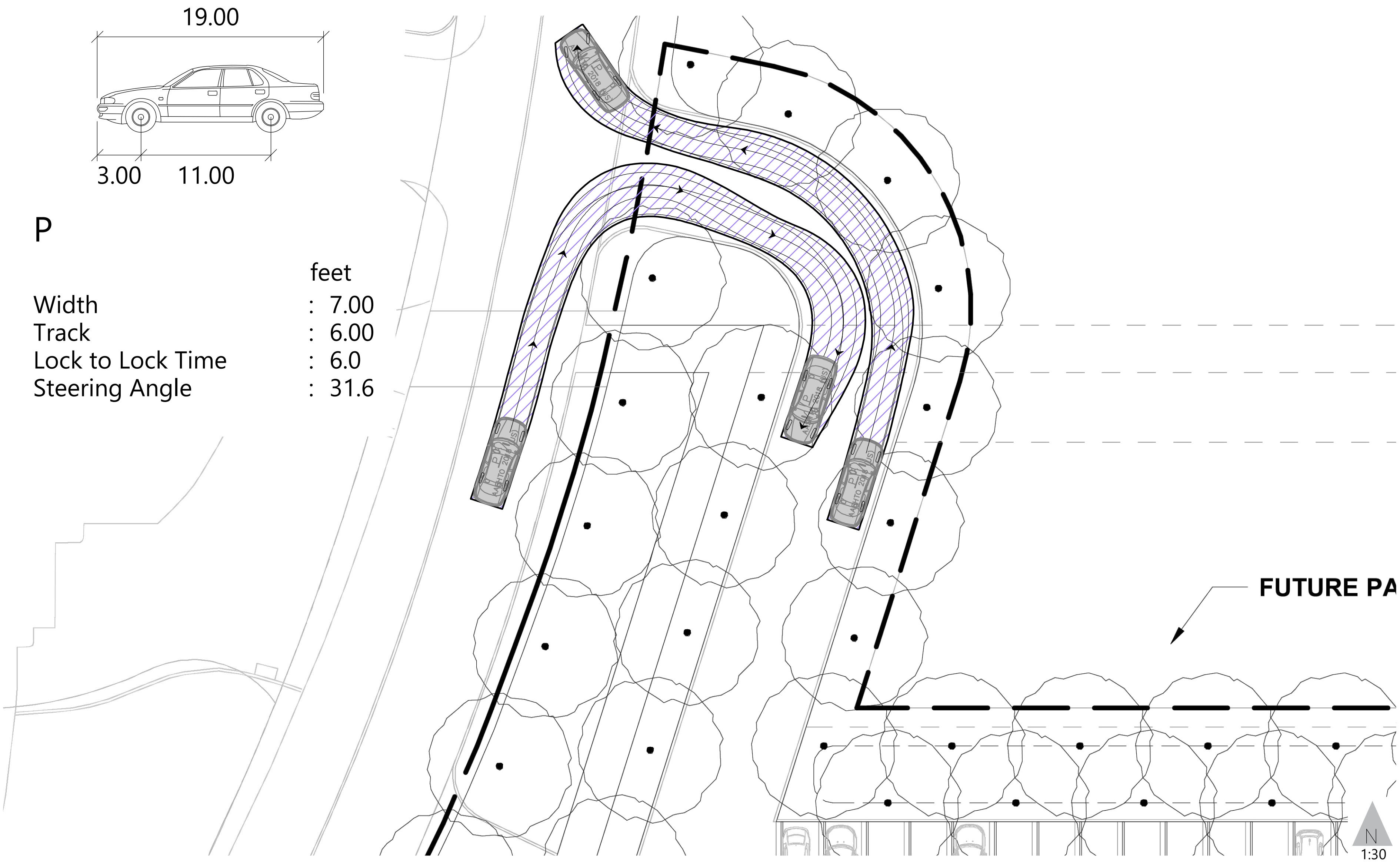
Based on the evidence presented above, it is concluded that the Project could be presumed to have a **less than significant impact**.

Would the project result in inadequate emergency access?

The Project is expected to increase the number of vehicles on the road primarily during the weekend midday peak hour compared with existing conditions, as shown in **Table 1**. Because this falls outside of the typical weekday commute periods when traffic congestion is at its highest within the City of Oxnard, the Project is expected to have a negligible effect on response times. Additionally, Oxnard Fire Station 8 is located adjacent to College Park, where the Project site is located, and has direct access to the College Park ring road via a driveway that connects to the intersection of Rose Avenue and Raiders Way. The immediate proximity of Oxnard Fire Station 8 to the Project site would allow for rapid emergency response times. As such, there would be adequate emergency access to the Project site.

Impact Assessment

Based on the evidence presented above, it is concluded that the Project could be presumed to have a **less than significant impact**.



P

	feet
Width	: 7.00
Track	: 6.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6

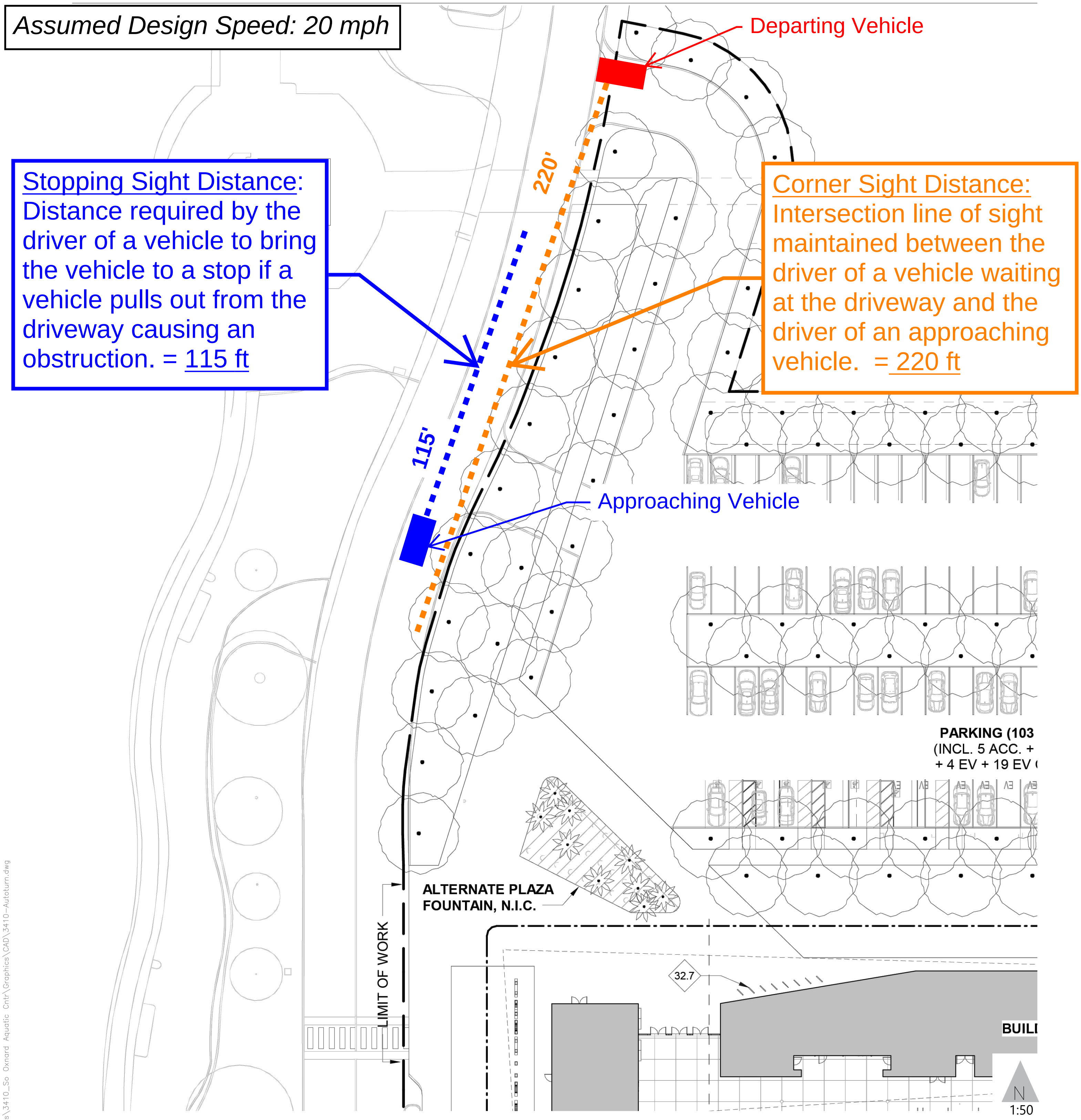
Figure 4

Proposed Project Driveway Turn Template Analysis

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

CADD FILE: N:\Jobs\Active\3400s\3410_So Oxnard Aquatic Cntr\Graphics\CAD\3410-Autoturn.dwg

Jan 09, 2023



Assumed Design Speed: 20 mph

Stopping Sight Distance: Distance required by the driver of a vehicle to bring the vehicle to a stop if a vehicle pulls out from the driveway causing an obstruction. = 115 ft

Corner Sight Distance: Intersection line of sight maintained between the driver of a vehicle waiting at the driveway and the driver of an approaching vehicle. = 220 ft

Figure 5

Proposed Project Driveway Sight Distance Analysis

CONCEPTUAL - NOT FOR CONSTRUCTION. ADDITIONAL DETAILED ANALYSIS AND ENGINEERING DESIGN REQUIRED.

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Jan 09, 2023

Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Table 2 below discusses local plans and policies that could have the potential to be inconsistent with the Project. Relevant plans, goals, policies and/or objectives that affect transportation and mobility in the City of Oxnard were evaluated and, as summarized in **Table 2**, no conflicts were identified. Therefore, no significant transportation impact is anticipated based on this criterion and no mitigation would be required.

Table 2 – Programs, Plans, Ordinances, and Policies Consistency Review

Plans	Description	Relevant Goals, Policies and/or Objectives	Consistency
Southern California Association of Governments Regional Transportation Plan	Every 4 years, SCAG updates its RTP for the 191-city SCAG region. Beginning with the 2012 RTP, SB 375 required the inclusion of a SCS in RTPs prepared by MPOs such as SCAG. The key goal of the SCS is to achieve GHG emission reduction targets through integrated land use and transportation strategies. A key objective is for planners and developers to consider how land use patterns influence travel demand. As part of the transportation modeling and analysis for the RTP/SCS, SCAG prepares population and employment growth projections by Transportation Analysis Zone (TAZ) and creates a future transportation network that represents the changes to the existing network based on the regional project list. TAZs are geographic polygons representing communities and neighborhoods at a sub-city level of detail.	1) Goal 2: Improve mobility, accessibility, reliability, and travel safety for people and goods. 2) Goal 4: Increase person and goods movement and travel choices within the transportation system. 3) Goal 5: Reduce greenhouse gas emissions and improve air quality. 4) Goal 6: Support healthy and equitable communities. 5) Goal 7: Adapt to a changing climate and support an integrated regional development pattern and transportation network.	As part of the transportation modeling and analysis for the RTP/SCS, SCAG prepares population and employment growth projections by TAZ and creates a future transportation network that represents the changes to the existing network based on the regional project list. TAZs are geographic polygons representing communities and neighborhoods at a sub-city level of detail. The proposed Project was compared against the RTP/SCS forecasts and network changes included in the 2020 SCAG RTP model. Given that the proposed Project would not result in any changes to the existing transportation network, it does not conflict with the RTP/SCS.

Plans	Description	Relevant Goals, Policies and/or Objectives	Consistency
City of Oxnard 2030 General Plan Land Use Element and Circulation Element (Goals & Policies)	The City of Oxnard 2030 General Plan Land Use Element and Circulation Element were adopted in 2011 and provide goals and policies for land use and development and the circulation system.	1) Policy CD-1.2 – Promote the efficient use of larger vacant parcels and vacant areas of the City by encouraging infill development, with a priority to mixed uses that reduce vehicle trips and GHG emissions and promote sustainable development goals and objectives. 2) Policy CD1.4 – Promote the application of land use and community designs that provide residents with the opportunity for a variety of transportation choices (pedestrian, bicycle, transit, automobile). 3) Policy ICS-7.2 – Reduce single-occupancy automobile use and increase the use of alternative forms of transportation as a means of reducing energy consumption and vehicle emissions. 4) Policy ICS-8.5 – Consider and require where appropriate and feasible the enhancement of the pedestrian environment as part of private development and public works projects, especially for public sidewalks. 5) Policy ICS-8.14 – Create a physical link for pedestrian and bicycle traffic between parks and recreation facilities as specified in the Bike and Pedestrian Master Plan.	The proposed Project's increased land use intensity compared to existing conditions will result in a net increase of 3,848 daily vehicle trips per day. However, the Project's location inside of an existing City park is consistent with the Community Development policy of promoting the efficient use of larger vacant parcels and vacant areas of the City by encouraging infill development, and the proximity of the Project to existing residential neighborhoods that can be accessed via walking and biking is consistent with the Community Development policy of promoting the application of land use and community designs that provide residents with the opportunity for a variety of transportation choices. The proximity of the Project to existing residential neighborhoods that can be accessed via walking and biking and the presence of existing bus stops on Rose Avenue adjacent to College Park is also consistent with the Circulation Element policies of reducing single-occupancy automobile use and increasing the use of alternative forms of transportation, considering where appropriate and feasible the enhancement of the pedestrian environment, and creating a physical link for pedestrian and bicycle traffic between parks and recreation facilities. As such, the Project does not conflict with the City of Oxnard 2030 General Plan.

Plans	Description	Relevant Goals, Policies and/or Objectives	Consistency
City of Oxnard Bicycle & Pedestrian Facilities Master Plan	The Bicycle & Pedestrian Facilities Master Plan was adopted in in 2011 and provides a broad vision, strategies, and actions for the improvement of bicycling and walking in the City of Oxnard. The purpose of the plan is to expand the existing networks, close gaps, address constrained areas, provide greater connectivity, educate, encourage, and maximize funding sources.	1) Goal 2.1 – The Oxnard Bicycle and Pedestrian Facilities Master Plan intends to make bicycling and walking integral modes of transportation in Oxnard through a safe, interconnected system of bicycle and pedestrian facilities.	While the proposed Project would not include the construction of new bicycle facilities, it would preserve the existing bicycle lanes on Rose Avenue adjacent to College Park and would include the installation of a new crosswalk on the College Park ring road to connect the Project site with the interior of College Park and existing pedestrian facilities on Rose Avenue. Additionally, the proposed Project would provide 16 bicycle parking spaces to facilitate bicycle travel to the Project site. As such, the Project does not conflict with the City of Oxnard Bicycle & Pedestrian Facilities Master Plan.

Impact Analysis

Based on the evidence presented above, it is concluded that the Project could be presumed to have a **less than significant impact**.

Appendix H

Noise and Vibration Study

South Oxnard Aquatics Center Project

Noise and Vibration Study

prepared by

City of Oxnard
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Contact: Reza Bagherzadeh, Senior Project Manager

prepared with the assistance of

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May 2023

RINCON CONSULTANTS, INC.
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1 Executive Summary

Rincon Consultants, Inc. (Rincon) was retained by the City of Oxnard (City) to conduct a noise and vibration study for the South Oxnard Aquatics Center Project (project), in Oxnard, Ventura County, California. The 7.93-acre vacant, graded project site is located at the southeast corner of College Park at 3250 South Rose Avenue. The project includes the construction of three outdoor pools (including a 50 meter competition pool, 25 yard instructional pool, and a fun water shallow pool, slide, and splash pad), a building structure, and a parking lot. In order to heat the pools, the proposed project includes construction of a natural gas line that would connect to the southwest corner of the proposed aquatics center, run west along the southern portion of College Park's one-lane ring road, and connect to an existing SoCalGas line in South Rose Avenue. The aquatics center will provide recreation, water fitness, and competitive aquatics opportunities for the residents of the City and surrounding communities.

The project is subject to the California Environmental Quality Act (CEQA). The City of Oxnard is the lead agency under CEQA. In addition to CEQA, several laws and regulations govern noise and the generation of noise in the City, including Title 24, Part 11 of the California Code of Regulations, the City of Oxnard 2030 General Plan Safety and Hazards Chapter, the City of Oxnard Municipal Code, and the City of Oxnard CEQA Guidelines.

This study includes analysis of noise and vibration impacts associated with construction and operation of the project. Noise monitoring was conducted to capture ambient noise levels at the project site and in vicinity of the project site. Seven short-term (15 minute) noise measurements were conducted on Saturday, January 7, 2023. Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). Existing noise levels ranged from 51 to 70 dBA L_{eq}.

Construction activities would result in temporary noise increases in the project site vicinity and would typically be higher during the heavier periods of initial construction (i.e., site preparation and grading) and would be lower during the later construction phases (i.e., building construction and paving). Construction of the project would temporarily increase ambient noise levels up to approximately 80 dBA L_{eq} during pipeline construction, which would occur approximately 195 feet from the nearest sensitive receptor, College Park located east of the pipeline construction project area. Construction noise would be less than 80 dBA L_{eq} at all other sensitive receptors during construction of the project. Construction noise generated by the project could therefore have the potential to generate or expose persons to noise levels in excess of applicable standards and generate a substantial temporary or periodic increase in ambient noise. With adherence to Mitigation Measure NOI-1, which requires preparation and implementation of a Construction Noise Reduction Plan, construction noise impacts would be ***less-than-significant with mitigation***.

On-site operational noise sources after completion of construction would include heating, ventilation, and air condition (HVAC) equipment, pool utility equipment, voices from people recreating, and noise from swim competitions, such as use of a public address (PA) system and spectators. Off-site operational noise sources include traffic noise generated by visitors traveling to and from the project site in automobiles. The combined noise levels from on-site operational noise sources would reach up to 52 dBA during the daytime. Noise generated by the project would not exceed the City's most stringent daytime exterior noise level limit of 55 dBA and project operational activities would not occur during the nighttime. The maximum increase in traffic noise associated with project operation would be 4 dBA L_{eq} which would not exceed the City's significance thresholds for traffic noise. Therefore, operational noise generated by the project does not have the potential to generate or expose persons to noise levels in excess of applicable standards or generate a substantial permanent increase in ambient noise. Operational noise impacts would be ***less than significant***.

The greatest anticipated source of vibration during project construction activities would be from a vibratory roller, which would be used during paving and pipeline construction activities. A vibratory roller would generate up to approximately 0.01 inches per second (in/sec) peak particle velocity (PPV) at the closest sensitive receptor to paving and pipeline activities and up to 41 vibration decibels (VdB) at the Oxnard College Letters and Science Building, which may contain science classrooms and laboratories with vibration-sensitive equipment such as scanning electron microscopes, optical microscopes, and other sensitive laboratory equipment. Therefore, vibration levels at nearby sensitive receptors would not exceed the significance thresholds of 0.2 in/sec PPV and 65 VdB. The project does not include substantial vibration sources associated with operation. Therefore, bibration generated by the project does not have the potential to generate or expose persons to excessive groundborne vibration or groundborne noise levels. Vibration impacts would be ***less than significant***.

The project is not located within the airport land use plan for Oxnard Airport or within two miles of Naval Base, Ventura County at Point Mogu. The project therefore does not expose people residing or working in the project area to excessive aviation related noise. Therefore, ***no impact*** related to aviation noise would occur.

The mature eucalyptus trees surrounding the project site provide suitable habitat for overwintering monarch butterflies and nesting birds. Construction noise generated by the project therefore could have the potential to expose non-human species to excessive noise. With adherence to the Mitigation Measures BIO-1 and BIO-2, which require monarch butterfly avoidance and minimization and pre-construction nesting bird surveys, impacts related to exposure of non-human species to excessive noise would be ***less-than-significant with mitigation***.

2 Project Description and Impact Summary

2.1 Introduction

This study analyzes the potential noise and vibration impacts associated with the construction and operation of the proposed South Oxnard Aquatics Center project (hereafter referred to as project or proposed project) located in Oxnard, California. Rincon Consultants, Inc. (Rincon) prepared this study under contract to the City of Oxnard in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). Table 1 provides a summary of project impacts.

Table 1 Summary of Impacts

Impact Statements	Proposed Project's Level of Significance	Applicable Mitigation Measures
Would the project generate or expose persons to noise levels in excess of standards established in the Oxnard 2030 General Plan or Noise Ordinance, or applicable standards of other agencies?	Less than significant impact with mitigation incorporated (Construction) Less than significant impact (Operation)	Mitigation Measure NOI-1 Construction Noise Reduction Plan
Would the project generate or expose persons to excessive groundborne vibration or groundborne noise levels?	Less than significant impact (Construction) Less than significant impact (Operation)	None
Would the project generate a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Less than significant impact with mitigation incorporated (Construction)	Mitigation Measure NOI-1 Construction Noise Reduction Plan
Would the project generate a substantial permanent increase in ambient noise in the project vicinity above levels existing without the project?	Less than significant impact (Operation)	None
For a project located within the airport land use plan for Oxnard Airport or within two miles of Naval Base, Ventura County at Point Mugu, would the project expose people residing or working in the project area to excessive noise levels?	No impact	None
Would the project expose non-human species to excessive noise?	Less than significant with mitigation (Construction)	Mitigation Measure BIO-1 Monarch Butterfly Avoidance and Minimization and Mitigation Measure BIO-2 Pre-Construction Nesting Bird Survey

2.2 Project Summary

Project Location

The 7.93-acre project site is located at 3250 South Rose Avenue (Assessor's Parcel Number [APN] 224-001-228) in Oxnard, California. The project site is located in the southeast corner of College Park, approximately 340 feet south of South Oxnard Boulevard. The project site is primarily vacant, with existing trees encroaching into the project site's eastern border. Figure 1 shows the regional location of the project site, while Figure 2 shows the project site boundary.

Project Description

The proposed project would include construction of a 57,233 square foot outdoor pool area with four pool areas totaling 23,571 square feet, one slide area totaling 822 square feet, a one-story "L" shaped building totaling 18,342 square feet, a 103-stall parking lot, and ancillary facilities. Pool areas would consist of a 50-meter competition pool, 25-yard instructional pool, splash pad, recreation pool, and slide area. The one-story building would frame the western and northern sides of the pool deck and would be used to house locker rooms, administrative space, utility rooms, a concession stand, and other ancillary facilities. The proposed project also includes construction of a natural gas line that would connect to the southwest corner of the proposed aquatics center, run west along the southern portion of College Park's one-lane ring road, and connect to an existing SoCalGas line in South Rose Avenue. Figure 3 shows the project layout.

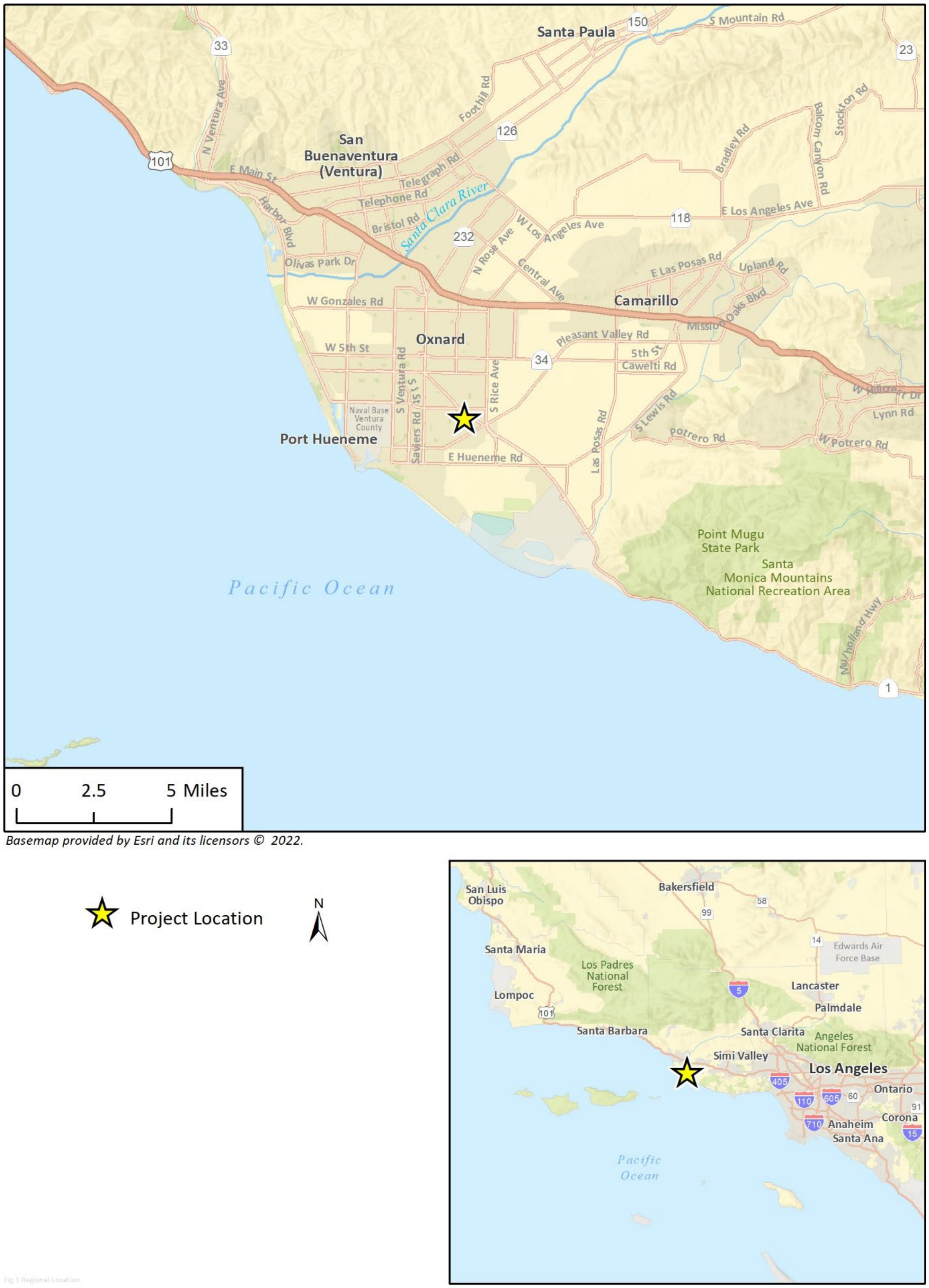
Construction

Construction of the proposed project is anticipated to begin in the first quarter of 2026 and end in the first quarter of 2028. Underground stone columns, up to 50 feet in depth, may be required to increase the load-bearing capacity of the soil. Excavation up to 15 feet in depth would be required for the pool areas and utilities. The proposed project would require cut of approximately 11,000 cubic yards (CY) and approximately 7,000 CY of fill. Approximately 6,000 CY of soil would be exported from the project site. Soil debris would be hauled to the Toland Road Landfill or the Simi Valley Landfill, or other landfills with available capacity. The proposed haul route for soil export and material delivery would be as follows:

- Toland Road Landfill: Rose Avenue to State Route (SR) 118 to SR 126 to Toland Road
- Simi Valley Landfill: Pleasant Valley Road to United States Highway 101 (U.S. 101) to SR 23 to SR 118 to Madera Road

Construction staging would be located on the project site. Construction workers would park on the project site, on the street immediately west of the project site, or in the adjacent parking lot located approximately 460 feet west of the project site. No nighttime or weekend construction would occur.

Figure 1 Regional Location

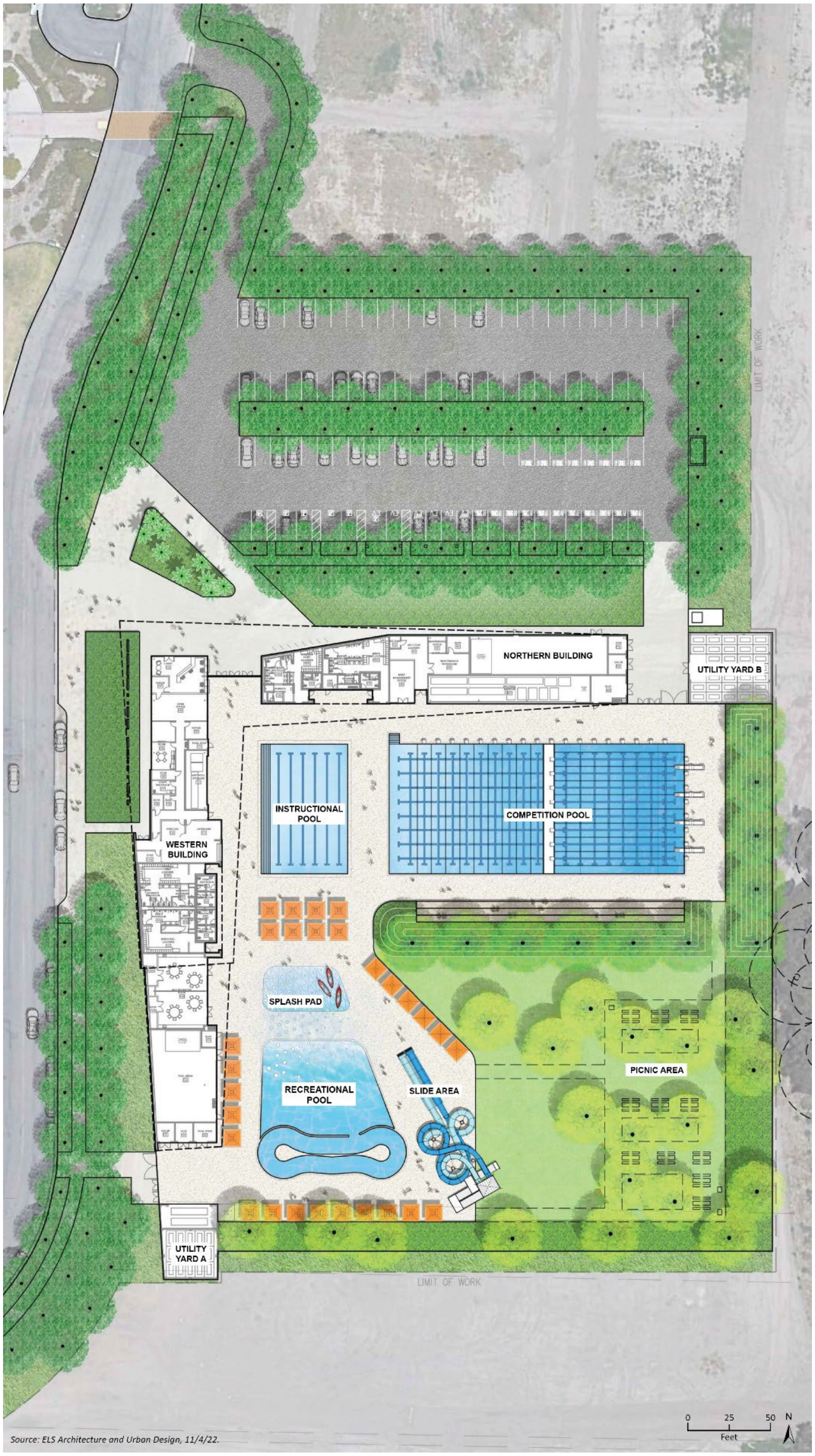


Basemap provided by Esri and its licensors © 2022.

Figure 2 Project Site Boundary

Imagery provided by Microsoft Bing and its licensors © 2022.

Figure 3 Conceptual Project Layout



Source: ELS Architecture and Urban Design, 11/4/22.

3 Background

3.1 Overview of Sound Measurement

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz and less sensitive to frequencies around and below 100 Hertz. Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dBA; dividing the energy in half would result in a 3 dBA decrease (Harris 1991).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not “sound twice as loud” as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible; and that an increase (or decrease) of 10 dBA sounds twice (or half) as loud (Harris 1991).

Sound changes in both level and frequency spectrum as it travels from the source to the receptor. The most obvious change is the decrease in level as the distance from the source increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line, the path the sound will travel, site conditions, and obstructions). Noise levels from a point source typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance (e.g., construction, industrial machinery, ventilation units). Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site, such as a parking lot or smooth body of water, receives no additional ground attenuation and the changes in noise levels with distance (drop-off rate) result from simply the geometric spreading of the source. An additional ground attenuation value of 1.5 dBA per doubling of distance applies to a soft site (e.g., soft dirt, grass, or scattered bushes and trees) (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, and man-made features such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5 dBA reduction in source noise levels at the receptor (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce exposure to interior noise as well. The FHWA’s guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows.

The impact of noise is not a function of loudness alone. The time of day when noise occurs, and the duration of the noise are also important factors of project noise impact. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. One of the most frequently used noise metrics is the equivalent noise level (L_{eq}); it considers both duration and sound power level. L_{eq} is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time.

Sound power is the total airborne sound energy radiated by a sound source per unit of time irrespective of the distance from the source. Sound pressure, on the other hand, is the result of sound sources radiating sound energy that is transferred into a specific acoustical environment and measured at a specific location and distance from the source.

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (L_{dn}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. It is also measured using the Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 p.m. to 7:00 a.m. (Caltrans 2013). Noise levels described by L_{dn} and CNEL usually differ by about 1 dBA. The relationship between the peak-hour L_{eq} value and the L_{dn}/CNEL depends on the distribution of traffic during the day, evening, and night.

3.2 Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of hertz (Hz). The frequency of a vibrating object describes how rapidly it oscillates.

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (Federal Transit Administration [FTA] 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Vibration amplitudes are usually expressed in peak particle velocity (PPV), which is normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration and other construction activities because it is related to the stresses that are experienced by buildings. Vibration amplitudes can also be expressed in root mean square (RMS) velocity, which is measured in vibration decibels (VdB). VdB is a measure of vibration expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second (1x10-6 in/sec). RMS is typically more suitable for evaluating impacts to vibration-sensitive equipment (Caltrans 2020).

3.3 Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. The City of Oxnard CEQA Guidelines (City of Oxnard 2017) define noise sensitive uses as residences, transient lodgings, schools, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks. Noise sensitive receptors near the site include College Park adjacent to the project site along the western project boundary, single-family residences approximately 425 feet northeast of the project site boundary on Sutter Place, Oxnard College adjacent to the southern project boundary, single-family residences approximately 850 feet east of the project site boundary on Olds Road, and Channel Islands High School located across Rose Avenue northwest from the western terminus of the proposed pipeline associated with the project.

Vibration sensitive receptors are similar to noise sensitive receptors, including residences and institutional uses such as schools, churches, and hospitals. However, vibration sensitive receptors also include buildings where vibrations may interfere with vibration-sensitive equipment. Vibration sensitive receptors near the site include single-family residences northeast of the project site, Oxnard College to the south, single-family residences to the east of the project site, and Channel Islands High School located to the northwest of the proposed pipeline.

3.4 Project Noise Setting

The most common source of noise in the project site vicinity is vehicular traffic from South Oxnard Boulevard and Rose Avenue. To characterize ambient noise levels in the project vicinity, seven short term (15 minute) noise measurements were conducted on Saturday, January 7, 2023. The approximate noise measurement locations are shown in Figure 4. Short term noise measurement (ST)-1 and ST-2 were conducted at the closest off-site residences east and northeast of the project site to capture ambient noise levels at the residences. ST-3 was conducted near the northeastern corner of the project site to capture ambient noise levels attributable to South Oxnard Boulevard at the project site. ST-4 was conducted at the Oxnard College Child Development Center Building at the corner of North Campus Road and Simpson Drive to capture ambient noise levels at the Oxnard College building located closest to the project site. ST-5 was conducted 50 feet from the centerline of Rose Avenue between Raiders Way and the College Park entrance to capture ambient noise levels attributable to Rose Avenue. ST-6 was conducted 50 feet from the centerline of Gary Drive at the northern boundary of College Estates Park on Gary Drive between Frankfort Court and Boston Drive to capture ambient noise levels from Gary Drive. ST-7 was conducted at the southeast corner of College Park to capture ambient noise levels at College Park. Figure 4 summarizes the results of the short-term noise measurements.

Table 2 Short-Term Noise Level Measurement Results

Measurement Location	Measurement Location	Sample Times	Approximate Distance to Primary Noise Source or Project Site	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)
ST 1	Residences along Olds Road, east of the project site	7:01 – 7:16 p.m.	Approximately 850 feet to the project site	58	42	83
ST 2	Residences along Sutter Place, northeast of the project site	7:27 – 7:42 p.m.	Approximately 550 feet to the project site	51	42	62
ST 3	Northeast corner of the project site	3:26 – 3:41 p.m.	Approximately 400 feet to centerline of South Oxnard Boulevard	55	48	72
ST-4	Oxnard College Child Development Center	3:51 – 4:06 p.m.	Approximately 580 feet to the project site	67	63	70
ST-5	Rose Avenue between Raiders Way and the College Park Entrance	2:16 – 2:31 p.m.	Approximately 50 feet to the centerline of Rose Avenue	70	50	85
ST-6	Gary Drive between Frankfort Court and Boston Drive	2:40 – 2:55 p.m.	Approximately 50 feet to the centerline of Gary Drive	58	43	74
ST-7	Southeast corner of College Park	3:04 – 3:19 p.m.	Approximately 30 feet to the center of the road circling College Park	52	45	64

dBA = A-weighted decibels; L_{eq} = equivalent noise level; L_{min} = minimum noise level, L_{max} = maximum noise level

Figure 4 Approximate Noise Measurement Locations

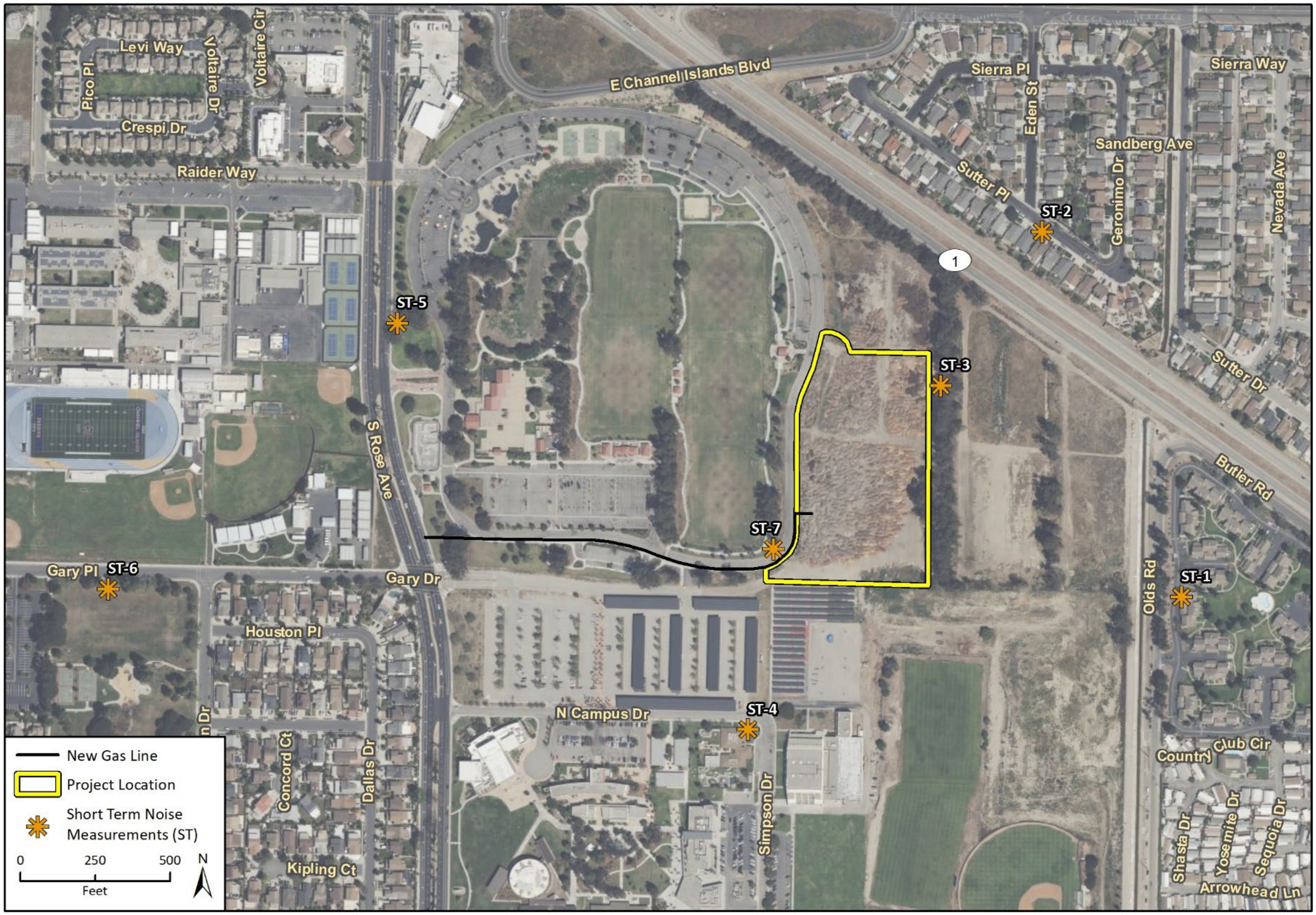


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Fig X Noise Measurement Locations

3.5 Regulatory Setting

Federal

There are no federal regulations that are directly appliable to the proposed project.

State

California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires each county and city to adopt a General Plan that includes a Noise Element prepared per guidelines adopted by the Governor's Office of Planning and Research. The purpose of the Noise Element is to limit the exposure of the community to excessive noise levels. CEQA requires all known environmental effects of a project be analyzed, including environmental noise impacts.

California Building Code: California Green Building Standards Code

The State of California's noise insulation standards for nonresidential uses are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 11, California Green Building Standards Code. The California Green Building Standards Code noise standards are applied to new or renovation construction projects in California to control interior noise levels resulting from exterior noise sources. Proposed projects may use either the prescriptive method (Section 5.507.4.1) or the performance method (Section 5.507.4.2) to show compliance. Under the prescriptive method, a project must demonstrate transmission loss ratings for the wall and roof-ceiling assemblies and exterior windows when located within a noise environment of 65 dBA CNEL or higher. Under the performance method, a project must demonstrate that interior noise levels do not exceed 50 dBA $L_{eq(1hr)}$.

City of Oxnard Noise Standards

City of Oxnard 2030 General Plan

The City of Oxnard 2030 General Plan was adopted October 2011. The Safety and Hazards Chapter identifies policies to ensure a quiet and safe residential and working environment. The following policies within the General Plan apply to the proposed project:

Goal SH-5 **A quiet and safe residential and working environment in terms of exposure to and/or generation of noise.**

SH-5.2 **State Noise Insulation Standard**s. Continue to enforce State Noise Insulation Standards for projects in high noise environments and require developers to comply with noise mitigation measures, designed by an acoustical engineer.

SH-5.3 **Sound Attenuation Measures.** Promote, where feasible, alternative sound attenuation measures such as berms, heavy landscaping, resurfacing of noise walls to promote noise absorption as well as deflection, berms and landscaping, or location of buildings away from roadways or other noise sources.

Goal SH-6 **Consideration of noise levels and impacts in the land use planning and development process.**

SH-6.1 **Construction Noise Control.** Provide best practices guidelines to developers for reducing potential noise impacts on surrounding land uses.

SH-6.2 **Limiting Construction Activities.** Continue to limit construction activities to the hours of 7 a.m. to 7 p.m., Monday through Saturday. No construction shall occur after hours, on Sundays, or national holidays without permission from the City.

SH-6.3 **Buffering of Sensitive Receptors.** Require noise buffering and/or other construction treatments in development located near major streets, highways, the airport, railroad tracks, or other significant noise sources as recommended by a noise analysis.

SH-6.4 **New Development Noise Compatibility.** Require that proposed development projects not generate more noise than that classified as “satisfactory” based on CEQA Thresholds of significance on a nearby property.

SH-6.5 **Land Use Compatibility with Noise.** Encourage non-noise sensitive land uses to locate in areas that are permanently committed to noise producing land uses, such as transportation corridors and industrial zones.

SH-6.12 **Development Near Railroads and Oxnard Airport.** Require that new habitable structures be setback at least 85 feet from the nearest railroad track measured from the edge of the outermost railroad track, and only compatible new development is located within the Oxnard Airport 65 dBA CNEL contour.

SH-6.13 **Noise Acceptable for Open Windows and Patios.** Continue to require noise analysis of proposed development projects as part of the environmental review process and require mitigation measures to reduce noise impacts to acceptable levels within outside activity areas and within residential structures without relying on mechanical ventilation, if feasible.

City of Oxnard Municipal Code

The City’s Noise Ordinance (Chapter 7, Article XI, of the Oxnard Municipal Code) identifies noise standards for various sources and includes specific noise restrictions for sources of noise within the city. The following sections of the City’s Noise Ordinance are relevant to the analysis:

- **Section 7-184 of the Oxnard Municipal Code** designates sound zones for properties within the city based on their corresponding land use. Residential uses are designated as Sound Zone I; Commercial properties are designated Sound Zone II; Industrial areas are designated as Sound Zone III; and all property within the contours around a roadway, railroad track, or the Oxnard Airport (as identified in Figure IX-2 of the Noise Element of the 2020 General Plan) are designated as Sound Zone IV. Table 3 shows the allowable noise levels and corresponding times of day for each of the identified sound zones.

Table 3 Exterior Noise Standards

		Allowable Exterior Sound Level (dBA)	
Sound Zone	**Type of Land Use**	**7:00 a.m. to 10:00 p.m.**	**10:00 p.m. to 7:00 a.m.**
I	Residential	55	50
II	Commercial	65	60
III	Industrial	70	70
IV	As identified in Figure IX-2 of the 2020 General Plan		

dBA = A-weighted decibel

Source: Oxnard Municipal Code Section 7-185

- **Section 7-185 of the Municipal Code** specifies that no person at any location within the city shall create, maintain, cause, or allow any sound on property which causes the sound level, when measured on any other property, to exceed:
  1. The allowable exterior sound level for a cumulative period of more than 30 minutes in any hour;
  2. The allowable exterior sound level plus five dBA for a cumulative period of more than 15 minutes in any hour;
  3. The allowable exterior sound level plus ten dBA for a cumulative period of more than five minutes in any hour;
  4. The allowable exterior sound level plus 15 dBA for a cumulative period of more than one minute in any hour; or
  5. The allowable exterior sound level plus 20 dBA for any period of time.
- **Section 7-188 of the Municipal Code** states exemptions for specific activities. Activities for which a permit or license has been issued and are conducted on public parks or public playgrounds would be exempt from the noise standards. Outdoor gatherings, public dances, shows, sporting or entertainment events that are conducted pursuant to a permit or license are exempt from the noise standards. Activities associated with construction are exempt from the quantitative noise limitations shown in Table 3, but are restricted to the hours between 7:00 a.m. and 6:00 p.m. on weekdays and Saturdays.

4 Methodology

4.1 Construction Noise

Construction noise was estimated using the FHWA Roadway Construction Noise Model (RCNM) (FHWA 2006). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction noise levels were estimated at noise sensitive receptors near the project site. RCNM provides reference noise levels for standard construction equipment, with an attenuation rate of 6 dBA per doubling of distance for stationary equipment.

Variation in power imposes additional complexity in characterizing the noise source level from construction equipment. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle of the activity to determine the L_{eq} of the operation (FHWA 2006). Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some having higher continuous noise levels than others, and some have high-impact noise levels.

Construction activity would result in temporary noise in the project site vicinity, exposing surrounding nearby receptors to increased noise levels. Construction noise would typically be higher during the heavier periods of initial construction (i.e., site preparation and grading) and would be lower during the later construction phases (i.e., building construction and paving). Typical heavy construction equipment during project grading could include dozers, loaders, graders, and dump trucks. It is assumed that diesel engines would power all construction equipment. Construction equipment would not all operate at the same time or location. In addition, construction equipment would not be in constant use during the workday.

Construction equipment is typically dispersed in various areas of the project site, with only a limited amount of equipment operating near a given location at a particular time. The FTA *Transit Noise and Vibration Impact Assessment* document recommends an approach where the distance variable in its construction noise calculation "assumes that all equipment operates at the center of the project" (FTA 2018). Therefore, it is common, industry standard practice to analyze average construction noise from the center of the site or phase because this is the approximate center of where noise is being generated, as equipment moves around the site throughout the workday. In accordance with FTA recommendations, construction noise from site preparation, grading, and stone column construction was analyzed from the center of the site, as construction equipment for these phases would be moving throughout the site. Construction noise from building construction, paving, and architectural coating was analyzed based upon the closest proposed parking area or building to the sensitive receptors, as buildings and parking areas are proposed at different locations throughout the project site. Construction noise from pipeline construction was analyzed from the middle point of the pipeline length as construction equipment for this phase would be moving throughout the pipeline alignment. The closest sensitive receptors to the project site are College Park adjacent to the western project boundary, single-family residences to the northeast and east of the project site, Oxnard College south of the project site, and Channel Islands High School northwest of the project site. Construction activities would be located as close as approximately 125 feet to the nearest sensitive receptors but would typically be located at an average distance further away due to the nature of construction. Noise levels from each phase of construction were modeled in RCNM based on the equipment list provided by the City.

4.2 Groundborne Vibration

The project does not include any substantial vibration sources associated with operation. Thus, construction activities have the greatest potential to generate ground-borne vibration affecting nearby receptors, especially during grading and paving of the project site. The greatest vibratory source during construction in the project vicinity would be a roller used during paving. Neither blasting nor pile driving would be required for construction of the project. Construction vibration estimates are based on vibration levels reported by the FTA. Table 4 shows typical vibration levels for various pieces of construction equipment used in the assessment of construction vibration (FTA 2018).

Table 4 Vibration Levels Measured during Construction Activities

Equipment	PPV at 25 feet (in/sec)
Vibratory Roller	0.21
Large Bulldozer	0.089
Loaded Trucks	0.076
Small Bulldozer	0.003

PPV = peak particle velocity; in/sec = inches per second

Source: FTA 2018

4.3 Operational Noise Sources

The noise sources on the project site after completion of construction are anticipated to be those that would be typical of an aquatics and recreation center, such as heating, ventilation, and air condition (HVAC) equipment, pool utility equipment, voices from people recreating, and noise from swim competitions, such as use of a public address (PA) system and spectators.

The primary on-site operational stationary noise source from the project would HVAC units, exhaust fans in the locker rooms and at the concession area, and mechanical rooms housed at the utility yards. A typical HVAC system generates noise levels ranging up to 72 dBA at a distance of 3 feet. The HVAC units would be rooftop-mounted units. Mechanical equipment such as pumps and boilers are proposed to be located inside mechanical rooms and are not anticipated to be substantial sources of noise.

The PA system would place ceiling speakers spaced 20 to 25 feet apart throughout the exterior of the building. Exterior pole mounted speakers would be provided for coverage to all exterior areas. The system would be designed and required to have a 70 dBA sound level limit throughout the aquatics center, which would result in announcements approximately three to five decibels higher than typical conversation.

Finally, reference noise levels from the SoundPLAN 8.2 computer acoustical modeling program were used to estimate operational noise from large groups of people using the swimming pools and facilities. The reference noise level of 108 dB sound power level for “open air swimming pool” was selected from the SoundPLAN library. The combination of noise sources anticipated from the project are then estimated at nearby sensitive receptors using the principles of sound propagation and taking into account any major shielding such as from proposed project buildings.

4.4 Traffic Noise

Noise affecting the project site is primarily from traffic on South Oxnard Boulevard, Gary Road and the existing road that encircles College Park. Project traffic noise increases were estimated using the average peak hour turning movement volumes data provided by Fehr & Peers for the project (Fehr & Peers 2023). Existing traffic volume estimates along the roadway study segments along with project peak hour volumes distribution are shown in Table 5. Cumulative and Cumulative with Project traffic volumes were obtained from Fehr & Peers and are shown in Table 6.

Table 5 Existing and Existing Plus Project Roadway Peak Hour Volumes

Roadway	Segment	Existing Peak Hour Volumes	Project Peak Hour Volumes Distribution	Existing Plus Project Peak Hour Volumes
Rose Avenue	Rose Avenue - North of Channel Islands Boulevard	1,715	157	1,872
Rose Avenue	Rose Avenue - South of Channel Islands Boulevard	1,566	246	1,812
Channel Islands	Channel Islands Boulevard - West of Rose Avenue	1,696	67	1,763
Channel Islands	Channel Islands Boulevard - East of Rose Avenue	1,185	22	1,207
Rose Avenue	Rose Avenue - North of Raiders Way	1,560	247	1,807
Rose Avenue	Rose Avenue - South of Raiders Way	1,481	135	1,616
Raiders Way	Raiders Way - West of Rose Avenue	60	0	60
Raiders Way	Raiders Way - East of Rose Avenue	183	202	385
Rose Avenue	Rose Avenue - North of College Park Entrance	1,482	136	1,618
Rose Avenue	Rose Avenue - South of College Park Entrance	1,434	202	1,636
College Park Entrance	College Park Entrance - East of Rose Avenue	168	248	416
Rose Avenue	Rose Avenue - North of Gary Drive	1,425	202	1,627
Rose Avenue	Rose Avenue - South of Gary Drive	1,302	180	1,482
Gary Drive	Gary Drive - West of Rose Avenue	185	22	207
Gary Drive	Gary Drive - East of Rose Avenue	26	0	26

Source: Fehr & Peers 2023.

Table 6 Cumulative and Cumulative With Project Roadway Peak Hour Volumes

Roadway	Segment	Cumulative Peak Hour Volumes	Project Peak Hour Volumes Distribution	Cumulative With Project Peak Hour Volumes
Rose Avenue	Rose Avenue - North of Channel Islands Boulevard	1,859	157	2,016
Rose Avenue	Rose Avenue - South of Channel Islands Boulevard	1,902	0	1,902
Channel Islands	Channel Islands Boulevard - West of Rose Avenue	1,879	0	1,879
Channel Islands	Channel Islands Boulevard - East of Rose Avenue	1,249	0	1,249
Rose Avenue	Rose Avenue - North of Raiders Way	1,651	248	1,899
Rose Avenue	Rose Avenue - South of Raiders Way	1,569	137	1,706
Raiders Way	Raiders Way - West of Rose Avenue	62	1	63
Raiders Way	Raiders Way - East of Rose Avenue	190	202	392
Rose Avenue	Rose Avenue - North of College Park Entrance	1,570	135	1,705
Rose Avenue	Rose Avenue - South of College Park Entrance	1,521	201	1,722
College Park Entrance	College Park Entrance - East of Rose Avenue	174	247	421
Rose Avenue	Rose Avenue - North of Gary Drive	1,511	202	1,713
Rose Avenue	Rose Avenue - South of Gary Drive	1,384	180	1,564
Gary Drive	Gary Drive - West of Rose Avenue	192	22	214
Gary Drive	Gary Drive - East of Rose Avenue	27	0	27

Source: Fehr & Peers 2023.

The posted speed limit on Rose Avenue is 45 miles per hour, except near Channel Islands High School where it is 25 miles per hour. Additionally, the speed limit for Channel Islands Boulevard is 40 miles per hour and the speed limit for Gary Drive is 30 miles per hour. No speed limit is posted for Raiders Way and College Park Entrance. As an aquatics center development with recreational and park land uses, the vehicle mix would be similar to existing conditions.

4.5 Significance Thresholds

The City of Oxnard CEQA Guidelines state that an affirmative answer to any of the following questions typically indicates a significant land use impact. A “no” response to all questions indicates that there would be no significant impact with respect to land use.

1) Would the project generate or expose persons to noise levels exceeding standards established in the Oxnard 2030 General Plan or Noise Ordinance, or applicable standards of other agencies?
2) Would the project generate or expose persons to excessive groundborne vibration or groundborne noise levels?
3) Would the project generate a substantial temporary or periodic increase in ambient noise in the project vicinity above levels existing without the project?
4) Would the project generate a substantial permanent increase in ambient noise in the project vicinity above levels existing without the project?
5) For a project located within the airport land use plan for Oxnard Airport or within two miles of Naval Base, Ventura County at Point Mugu, would the project expose people residing or working in the project area to excessive noise levels?
6) Would the project expose non-human species to excessive noise?

Construction Noise

- As stated in the Oxnard CEQA Guidelines, activities associated with construction are exempt from specific quantitative noise limitations in the City Noise Ordinance, but are restricted to the hours between 7:00 a.m. and 6:00 p.m. on weekdays and Saturdays pursuant to the City’s Municipal Code Section 7-188(D). Construction-related noise impacts would normally be less than significant if construction activity occurs within the timing restrictions specified in the Noise Ordinance.

Construction Vibration

Vibration limits used in this analysis to determine a potential impact to local land uses from construction activities, such as, vibratory compaction or excavation, are based on information contained in the FTA *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018). Groundborne vibration levels that could induce potential architectural damage to buildings are identified in Table 7. Based on FTA recommendations, limiting vibration levels to below 0.2 in/sec PPV at non-engineered timber and masonry buildings (which would apply to the nearby residential structures and Oxnard College) would prevent architectural damage.

Table 7 Groundborne Vibration Architectural Damage Criteria

Building Category		PPV (in/sec)
I.	Reinforced concrete, steel, or timber (no plaster)	0.5
II.	Engineered concrete and masonry (no plaster)	0.3
III.	Non-engineered timber and masonry buildings	0.2
IV.	Buildings extremely susceptible to vibration damage	0.12

in/sec = inches per second; PPV = peak particle velocity

Source: FTA 2018

The FTA provides criteria for acceptable levels of groundborne vibration for buildings containing vibration-sensitive equipment, including but not limited to scanning electron microscopes, optical microscopes, and other sensitive laboratory equipment. For the purposes of this analysis, 65 VdB is used as a threshold for nearby Oxnard College buildings potentially containing vibration-sensitive equipment, such as science classrooms and laboratories.

On-site Stationary Operational Noise

- The City has adopted exterior noise standards in the Oxnard Municipal Code regulating operational noise sources in the city. The proposed project would result in a significant impact if noise from project stationary operational and recreational noise sources exceed the Municipal Code standards shown in Table 3.

Traffic Noise

A project would normally have a significant effect on the environment related to noise if it would substantially increase the ambient noise levels for adjoining areas. The following thresholds of significance, included in the Oxnard CEQA guidelines and recommended by the FTA, are used to assess traffic noise impacts at sensitive receptor locations. Table 8 shows the significance thresholds for increases in traffic-related noise levels. These standards are applicable to project-related noise impacts on existing sensitive receptors.

Table 8 Significance of Changes in Operational Roadway Noise Exposure

Existing Noise Exposure (dBA L_{dn} or L_{eq})	Allowable Noise Exposure Increase (dBA L_{dn} or L_{eq})
45-49	7
50-54	5
55-59	3
60-64	2
65-74	1
75+	0

Source: City of Oxnard 2017.

On-Site Land Use Compatibility

- As a result of the Supreme Court decision regarding the assessment of the environment's impacts on projects (*California Building Industry Association (CBIA) v. Bay Area Air Quality Management District (BAAQMD)*, 62 Cal. 4th 369 (No. S 213478) issued December 17, 2015), it is no longer the purview of the CEQA process to evaluate the impact of existing environmental conditions on any given project. As a result, while the noise from existing sources (e.g., adjacent roadways) is taken into account as part of the baseline condition, the direct effects of exterior noise from nearby noise sources relative to land use compatibility of a proposed project is typically no longer a required topic for impact evaluation under CEQA. Generally, no determination of significance is required except for certain school projects, projects affected by airport noise, and projects that would exacerbate existing conditions (i.e., projects that would have a significant operational impact).

5 Impact Analysis

Threshold 1:	Would the project generate or expose persons to noise levels in excess of standards established in the Oxnard 2030 General Plan or Noise Ordinance, or applicable standards of other agencies?
Threshold 3:	Would the project generate a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
Threshold 4:	Would the project generate a substantial permanent increase in ambient noise in the project vicinity above levels existing without the project?

Impact N-1 **CONSTRUCTION OF THE PROJECT WOULD TEMPORARILY INCREASE AMBIENT NOISE LEVELS AND WOULD BE SIGNIFICANT IF UNCONTROLLED. WITH MITIGATION, CONSTRUCTION NOISE WOULD BE LESS THAN SIGNIFICANT. ALTHOUGH AMBIENT NOISE IN THE PROJECT VICINITY COULD INCREASE FROM ON-SITE OPERATIONAL ACTIVITIES AND INCREASED TRAFFIC RESULTING FROM THE PROJECT, OPERATIONAL NOISE INCREASES WOULD NOT EXCEED APPLICABLE STANDARDS AND OPERATIONAL NOISE IMPACTS WOULD BE LESS THAN SIGNIFICANT. NOISE IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.**

Construction

As described under Section 3, *Methodology*, over the course of a typical construction day, construction equipment would be located as close as 125 feet to the nearest sensitive receptor, College Park, but would typically be located at an average distance further away due to the nature of construction where equipment is mobile throughout the site during the day. Table 9, on the following page, identifies the estimated noise levels at the closest sensitive receptors from the center of the specific phase based on the conservatively assumed combined use of all construction equipment during each phase of construction.

As shown in Table 9, construction noise could be as high as approximately 80 dBA L_{eq} during pipeline construction, which would occur approximately 195 feet from the nearest sensitive receptor, College Park located east of the pipeline construction project area. Construction noise would be less than 80 dBA L_{eq} at all other sensitive receptors during construction of the project. Construction would occur between the hours of 7:00 a.m. and 6:00 p.m. on weekdays and Saturdays, pursuant to the City's Municipal Code Section 7-188(D). According to the City of Oxnard CEQA Guidelines, when construction would occur within 500 feet of a noise sensitive use, noise minimization measures are prudent. Therefore, if uncontrolled, project construction noise would be considered significant. Implementation of Mitigation Measure NOI-1 would reduce this impact to a level of less-than-significant.

Table 9 Estimated Noise Levels by Construction Phase

Construction Phase	L_{eq} dBA					Channel Islands HS to the Northwest
	RCNM Reference Noise Level[1]	College Park to the West	Single-Family Residences to the Northeast	Single-Family Residences to the East	Oxnard College to the South	
Distance in feet	**50**	**290**	**835**	**1,040**	**845**	**1,700**
Site Preparation	84	69	59	58	59	53
Grading	87	72	63	61	62	56
Stone Column Construction	78	63	54	52	53	47
Distance in feet	**50**	**125**	**780**	**1,005**	**735**	**1,5000**
Building Construction	85	77	61	59	62	55
Architectural Coating	76	68	52	50	53	46
Distance in feet	**50**	**300**	**665**	**1,045**	**1,025**	**1,725**
Paving	87	71	65	61	61	56
Distance in feet	**50**	**195**	**1,550**	**1,900**	**800**	**790**
Pipeline Construction	92	80	62	60	68	68

[1] RCNM reference noise levels are noise levels generated during each construction phase measured from a point 50 feet from the location of the construction phase. These reference noise levels are then used to calculate noise levels from the construction phase at a distance greater than 50 feet from the construction phase.

Source: Roadway Construction Noise Model (RCNM). See Appendix A for modeling outputs.

On-Site Operational Stationary Sources

The primary on-site operational noise sources from the project would be from the combination of on-site recreational activities, use of the PA system, and mechanical equipment such as HVAC units. Using the reference noise levels from Section 3, *Methodology*, project operational noise levels are estimated at nearby sensitive receptors and shown in Table 10.

Table 10 Project On-Site Stationary Operational Noise Levels, dBA

Source	College Park to the West[1]	Single-Family Residences to the Northeast[2]	Single-Family Residences to the East	Oxnard College to the South
Voices from swimming pool and facilities use	43	46	51	52
PA System	36	22	21	24
Mechanical Equipment	38	24	23	26
Combined Noise Levels	**45**	**46**	**51**	**52**

[1] Includes 15 dBA of reduction due to shielding from the proposed project Western Building.

[2] Includes 5 dBA of reduction due to shielding from the South Oxnard Boulevard sound wall.

Project operational activities are proposed during the daytime. No activities are proposed after 10:00 p.m. As shown in Table 10, noise generated by the project would not exceed the City's most stringent daytime exterior noise level limit of 55 dBA shown in Table 3. Therefore, impacts related to operational stationary noise would be less than significant.

Off-Site Traffic

The project would generate new vehicle trips that would increase noise levels on nearby roadways. The project is anticipated to generate up to 2,048 new daily vehicle trips (Fehr & Peers 2023).

The project would not make substantial alterations to roadway alignments or substantially change the vehicle classifications mix on local roadways. Therefore, the primary factor affecting off-site noise levels would be increased traffic volumes. Table 11 summarizes the estimated project and cumulative traffic noise increases based on peak hour traffic volumes (Fehr & Peers 2023). As shown in Table 11, the maximum increase in traffic noise would be 4 dBA L_{eq} under cumulative conditions at the College Park entrance east of Rose Avenue. Similarly, under cumulative conditions traffic noise along Raiders Way east of Rose Avenue would increase by 3.3 dBA L_{eq}. Both of these roadways lead to the road encircling College Park, where ambient noise levels were measured at 52 dBA L_{eq} during the afternoon peak commute hours (ST-7). The projected traffic noise increase of 4 dBA L_{eq} would not exceed the City's significance threshold of 5 dBA L_{eq} for areas with existing ambient of 50 to 54 dBA L_{eq}. Projected traffic noise increases would be less than 1 dBA L_{eq} on all other roadway study segments. Therefore, increases in traffic noise associated with the project would be less than significant.

Table 11 Summary of Project and Cumulative Traffic Noise Increases

		Roadway Segment Peak Hour Volumes				dBA (L_{eq})		
Roadway	**Segment**	**Existing**	**Existing + Project**	**Cumulative**	**Cumulative + Project**	**Project Noise Increase**	**Cumulative Increase**	**Project Cumulative Contribution**
Rose Avenue	Rose Avenue - North of Channel Islands Boulevard	1,715	1,872	1,859	2,016	0.4	0.7	0.4
Rose Avenue	Rose Avenue - South of Channel Islands Boulevard	1,566	1,812	1,902	1,902	0.6	0.8	<0.1
Channel Islands	Channel Islands Boulevard - West of Rose Avenue	1,696	1,763	1,879	1,879	0.2	0.4	<0.1
Channel Islands	Channel Islands Boulevard - East of Rose Avenue	1,185	1,207	1,249	1,249	0.1	0.2	<0.1
Rose Avenue	Rose Avenue - North of Raiders Way	1,560	1,807	1,651	1,899	0.6	0.9	0.6
Rose Avenue	Rose Avenue - South of Raiders Way	1,481	1,616	1,569	1,706	0.4	0.6	0.4
Raiders Way	Raiders Way - West of Rose Avenue	60	60	62	63	<0.1	0.2	0.1
Raiders Way	Raiders Way - East of Rose Avenue	183	385	190	392	3.2	3.3	3.2
Rose Avenue	Rose Avenue - North of College Park Entrance	1,482	1,618	1,570	1,705	0.4	0.6	0.4
Rose Avenue	Rose Avenue - South of College Park Entrance	1,434	1,636	1,521	1,722	0.6	0.8	0.5
College Park Entrance	College Park Entrance - East of Rose Avenue	168	416	174	421	3.9	4.0	3.8
Rose Avenue	Rose Avenue - North of Gary Drive	1,425	1,627	1,511	1,713	0.6	0.8	0.5
Rose Avenue	Rose Avenue - South of Gary Drive	1,302	1,482	1,384	1,564	0.6	0.8	0.5
Gary Drive	Gary Drive - West of Rose Avenue	185	207	192	214	0.5	0.6	0.5
Gary Drive	Gary Drive - East of Rose Avenue	26	26	27	27	<0.1	0.2	<0.1

Source: Fehr & Peers 2023

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Mitigation Measures

The City shall implement the following measures during project construction:

NOI-1 Construction Noise Reduction Plan

- The construction contractor shall prepare and implement a Construction Noise Control Plan. The construction contractor shall submit the Construction Noise Control Plan to the City of Oxnard Public Works Department for review and approval prior to initiation of construction. The details of the Construction Noise Control Plan shall be included as part of the permit application drawing set and as part of the construction drawing set. The Construction Noise Control Plan shall include the following measures:
- At least 21 days prior to the start of construction activities, all off-site businesses and residents within 500 feet of the project site shall be notified of the planned construction activities. The notification shall include a brief description of the project, the activities that would occur, the hours when construction would occur, and the construction period's overall duration. The notification shall include the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint.
- At least 10 days prior to the start of construction activities, a sign shall be posted at the entrance(s) to the job site, clearly visible to the public, that includes permitted construction days and hours, as well as the telephone numbers of the City's and contractor's authorized representatives that are assigned to respond in the event of a noise or vibration complaint. If the authorized contractor's representative receives a complaint, the representative shall investigate, take appropriate corrective action, and report the action to the City.
- During the entire active construction period, equipment, tools, and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds), wherever feasible. During the entire active construction period, stationary noise sources shall be located as far from sensitive receivers as possible, muffled, and enclosed within temporary sheds or insulation barriers, or other measures for equivalent noise reduction will be incorporated to the extent feasible.
- The contractor shall be required to use impact tools that are hydraulically or electrically powered wherever feasible. Where the use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used along with external noise jackets on the tools.
- Stockpiling of materials shall be located as far as feasible from nearby noise-sensitive receptors.
- Signs shall be posted at the job site entrance(s) to reinforce the prohibition of unnecessary engine idling. All equipment shall be turned off if not in use for more than 5 minutes.
- Use of stereos and other amplified noise not necessary for the completion of construction work shall be prohibited.
- During the entire active construction period and to the extent feasible, the use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only. The construction manager shall ensure the use of use smart back-up alarms, which automatically adjust the alarm level based on the background noise level or switch off back-up alarms and replace with human spotters in compliance with safety requirements and laws.

Significance After Mitigation

Implementation of Mitigation Measure NOI-1 would entail several noise reduction measures, including use of mufflers and shielding to minimize construction noise to the degree feasible. With implementation of Mitigation Measure NOI-1 project construction noise would be less than significant.

Threshold 2: Would the project generate or expose persons to excessive groundborne vibration or groundborne noise levels?

Impact N-2 **PROJECT CONSTRUCTION WOULD TEMPORARILY GENERATE GROUNDBORNE VIBRATION ON THE PROJECT SITE DURING CONSTRUCTION, BUT WOULD NOT EXCEED APPLICABLE STANDARDS. OPERATION OF THE PROJECT WOULD NOT GENERATE SUBSTANTIAL VIBRATION. THEREFORE, VIBRATION IMPACTS WOULD BE LESS THAN SIGNIFICANT.**

Construction activities known to generate excessive groundborne vibration, such as pile driving, would not be needed to construct the project. Based on FTA recommendations, limiting vibration levels to below 0.2 in/sec PPV at residential and institutional structures would prevent architectural damage regardless of building construction type. Additionally, based on FTA recommendations, limiting vibration levels to 65 VdB at nearby Oxnard College buildings potentially containing vibration-sensitive equipment would prevent damage to vibration-sensitive equipment. The greatest anticipated source of vibration during project construction activities would be from a vibratory roller, which would be used during paving and pipeline construction activities. Based on the project site plan, it is assumed the vibratory roller may be used within 500 feet of the nearest off-site residential structures to the northeast of the project site during paving activities. For pipeline construction, a vibratory roller may be used within 190 feet of the nearest off-site institutional structure to the pipeline, Channel Island High School northwest of the eastern terminus of the pipeline. A vibratory roller generates up to approximately 0.01 in/sec PPV at distance of 190 feet and approximately 0.002 in/sec PPV at a distance of 500 feet, which would not exceed the significance threshold of 0.2 in/sec PPV. A vibratory roller used during pipeline construction may be used within 1,500 feet of the Oxnard College Letters and Science Building, which may contain science classrooms and laboratories with vibration-sensitive equipment such as scanning electron microscopes, optical microscopes, and other sensitive laboratory equipment. A vibratory roller generates 41 VdB at a distance of 1,500 feet, which would not exceed the significance threshold of 65 VdB. Therefore, construction activities would not generate or expose persons to excessive vibration and impacts would be less than significant.

The project does not include substantial vibration sources associated with operation. Therefore, operational vibration impacts would be less than significant.

Mitigation Measures

- No mitigation measures would be required.

Significance After Mitigation

Impacts would be less than significant, and no mitigation is required.

Threshold 5: For a project located within the airport land use plan for Oxnard Airport or within two miles of Naval Base, Ventura County at Point Mugu, would the project expose people residing or working in the project area to excessive noise levels?

Impact N-3 THE PROJECT IS NOT LOCATED WITHIN THE AIRPORT LAND USE PLAN FOR OXNARD AIRPORT OR WITHIN TWO MILES OF NAVAL BASE, VENTURA COUNTY AT POINT MUGU. THEREFORE, THE PROJECT WOULD NOT EXPOSE PEOPLE RESIDING OR WORKING IN THE PROJECT AREA TO EXCESSIVE AVIATION RELATED NOISE AND THE PROJECT WOULD HAVE NO IMPACT.

The Oxnard Airport is located approximately 3.5 miles northwest of the project site. The project site is not located within the airport land use plan for the Oxnard Airport and the project site is not within two miles of Naval Base, Ventura County at Point Mugu (Ventura County 2004). Therefore, the project would not expose people working in the project area to excessive noise levels. There would be no impact.

Mitigation Measures

No mitigation measures would be required.

Threshold 6: Would the project expose non-human species to excessive noise?

Impact N-4 NOISE GENERATED DURING PROJECT CONSTRUCTION COULD EXPOSE MONARCH BUTTERFLY AND NESTING BIRDS TO EXCESSIVE NOISE. THE EXPOSURE OF NON-HUMAN SPECIES TO EXCESSIVE NOISE WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

The project site is a disturbed dirt lot and there is no suitable habitat present for supporting non-human species. However, the mature eucalyptus trees surrounding the project site provides suitable habitat for overwintering monarch butterfly and nesting birds. Project construction may indirectly disturb roosting overwintering monarchs through construction noise and other human disturbances. Construction of the project may indirectly impact nesting birds through construction noise and other human disturbances that may cause a nest to fail. Therefore, non-human species could be exposed to excessive noise generated by the project and is considered potentially significant and mitigation is required.

Following project completion, the eucalyptus trees will remain in place, continuing to provide roosting habitat for monarch butterflies and nesting habitat for birds. Noise from the operations of the facility would be minimal due to the peripheral tree planting along the eastern boundary of the facility, screening noise between the facility and the eucalyptus. Therefore, no significant long-term permanent noise impacts would occur.

Mitigation Measures

BIO-1 Monarch Butterfly Avoidance and Minimization

- Project construction activities, including equipment staging, grading, and construction shall be avoided during the monarch butterfly overwintering season between October 15 through March 15. In the event project activities cannot be avoided during the overwintering season, the City of Oxnard Public Works Department shall retain a qualified biologist to conduct surveys for roosting monarch butterflies every two weeks during the overwintering season to confirm their absence. If construction activities occur during the overwintering season and monarch butterflies are present, the qualified biologist shall establish a protective buffer, ranging from 100-300 feet from the roosting site in which monarch butterflies are aggregating. The buffer will be delineated by the biologist with flagging or staking visible by construction personnel. The construction contractor shall ensure that no construction occurs within the protective buffer, including staging of equipment or stopping or idling in the buffer, during the overwintering season. In the event construction activities, or other use of equipment, is needed to work within the buffer, the qualified biologist shall be on site to monitor construction activities and determine if the work is disturbing the aggregated butterflies. If the biologist determines that the work is disturbing the butterflies, the biologist shall stop work within the protective buffer at any time. In addition, due to the regular movement of the butterflies and locations of the aggregations, the biologist shall have the discretion to adjust the protective buffers, as necessary.

BIO-2 Pre-Construction Nesting Bird Survey

Project construction activities, including (but not limited to) equipment staging, grading, and construction shall be avoided during the nesting bird season (February 1 through August 31). In the event project construction activities cannot be avoided during the nesting bird season, the City of Oxnard Public Works Department shall retain a qualified biologist to conduct a nesting bird survey within three days prior to initiation of such activities to determine the presence/absence, location, and status of any active nests on-site or within 100 feet of the site for songbirds and passerine species and up to 500 feet for raptors. The findings of the survey will be summarized in a report to be submitted to the City of Oxnard Public Works Department for review and approval prior to undertaking construction activities at the site.

If nesting birds/active nest(s) are observed on site, the qualified biologist shall establish a construction buffer with fencing or flagging. The buffer shall be 500 feet from the active nest for nesting raptors or threatened or endangered species and 100 feet of all other nesting birds. The nest buffer may be adjusted at the direction of the qualified biologist based on the species, location of the nest, and the type of construction activities occurring during the nesting period. The construction contractor shall communicate to all construction personnel that no person or construction related activity shall occur within the buffer without prior approval from the qualified biologist. Nests shall be monitored at a minimum of once per week by the qualified biologist until it has been determined that the nest is no longer being used by either the young or adults. The construction contract shall ensure that no ground disturbance occurs within this buffer until the qualified biologist confirms that the breeding/nesting is completed, including confirmation that all the young have fledged (if the nest was successful). If construction activities must occur within the buffer, the activity shall be conducted at the discretion of the qualified biologist. The construction contractor shall obtain approval from the qualified biologist prior to conducting any construction activities within the buffer.

- If no nesting birds are observed during pre-construction surveys, no further actions would be necessary.

Significance After Mitigation

Implementation of Mitigation Measures BIO-1 and BIO-2 would require preconstruction surveys and establishment of buffer zones to minimize noise impacts during construction to the monarch butterfly and nesting birds. Impacts would be less than significant with mitigation incorporated.

6 Conclusion

Project construction would generate temporary construction-related noise and construction activities would occur between the hours of 7:00 a.m. and 6:00 p.m. on weekdays and Saturdays pursuant to the City's Municipal Code Section 7-188(D). Impacts from construction noise would be less than significant with implementation of Mitigation Measure NOI-1.

The project's stationary noise sources (e.g., on-site recreational activities, use of the PA system, and mechanical equipment such as HVAC units) would not exceed City standards at the nearest sensitive receptors. Therefore, stationary noise impacts would be less than significant.

The maximum increase in traffic noise would be 4 dBA L_{eq} under cumulative conditions at the College Park entrance east of Rose Avenue. Similarly, under cumulative conditions traffic noise along Raiders Way east of Rose Avenue would increase by 3.3 dBA L_{eq}. Both of these roadways lead to the road encircling College Park, where ambient noise levels were measured to be 52 dBA L_{eq} during the afternoon peak commute hours. The projected traffic noise increase of 4 dBA L_{eq} would not exceed the City's significance threshold of 5 dBA L_{eq} for areas with existing ambient noise levels of 50 to 54 dBA L_{eq}. Projected traffic noise increases would be less than 1 dBA L_{eq} on all other roadway study segments. Therefore, increases in traffic noise with the project would be less than significant.

The project would generate groundborne vibration during construction. Groundborne vibration would not exceed the 0.2 in/sec PPV vibration threshold at the nearest structures or the 65 VdB threshold for building potentially containing vibration-sensitive equipment, and construction-related vibration impacts would be less than significant.

The project site is not located within the airport land use plan for the Oxnard Airport and the project site is not within two miles of Naval Base, Ventura County at Point Mugu. Therefore, no substantial noise exposure would occur to people working in the project area from aircraft noise.

In terms of potential impacts to non-human species, implementation of Mitigation Measures BIO-1 and BIO-2 would require preconstruction surveys and establishment of buffer zones to minimize noise impacts to the monarch butterfly and nesting birds during construction. Impacts would be less than significant with mitigation incorporated.

Given the aforementioned, the project would result in less than significant noise impacts with mitigation incorporated.

7 References

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Appendix A

Roadway Construction Noise Modeling (RCNM) Outputs

```
                        Roadway Construction Noise Model (RCNM),Version 1.1

Report date:             12/23/2022
Case Description:        Site Prep

                                **** Receptor #1 ****

                                           Baselines (dBA)
Description  Land Use        Daytime    Evening    Night
-----------  --------        -------    -------    -----
Site Prep    Residential        55.0       50.0     50.0

                                     Equipment
                                     ---------
                                Spec    Actual    Receptor    Estimated
               Impact  Usage    Lmax    Lmax      Distance    Shielding
Description    Device   (%)     (dBA)   (dBA)      (feet)       (dBA)
-----------    ------  -----    -----   -----     --------    ---------
Dozer              No     40     85.0                 50.0          0.0
Tractor            No     40     84.0                 50.0          0.0


                                     Results
                                     -------
                                                            Noise Limits (dBA)
                   Noise Limit Exceedance (dBA)

----------------------------------------------
----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night                Day           Evening          Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq        Lmax    Leq     Lmax    Leq     Lmax
 Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------  ------
------    ------  ------  ------  ------  ------  ------
Dozer                     85.0    81.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Tractor                   84.0    80.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      85.0    83.6        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
```

```
                        Roadway Construction Noise Model (RCNM),Version 1.1

Report date:             12/23/2022
Case Description:        Grading

                                **** Receptor #1 ****

                                           Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    --------        -------    -------    -----
Grading        Residential        55.0       50.0     50.0

                                     Equipment
                                     ---------
                              Spec    Actual    Receptor    Estimated
             Impact  Usage    Lmax    Lmax      Distance    Shielding
Description  Device   (%)     (dBA)   (dBA)      (feet)        (dBA)
-----------  ------  -----    -----   -----     --------    ---------
Excavator        No     40     85.0                 50.0          0.0
Grader           No     40     85.0                 50.0          0.0
Dozer            No     40     85.0                 50.0          0.0
Tractor          No     40     84.0                 50.0          0.0


                                     Results
                                     -------
                                                            Noise Limits (dBA)
                   Noise Limit Exceedance (dBA)

----------------------------------------------
----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night              Day           Evening          Night
                        ----------------   --------------    -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq        Lmax    Leq     Lmax    Leq     Lmax
 Leq      Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------  ------
------    ------  ------  ------  ------  ------  ------
Excavator                 85.0    81.0        N/A     N/A     N/A     N/A     N/A
 N/A      N/A     N/A     N/A     N/A     N/A     N/A
Grader                    85.0    81.0        N/A     N/A     N/A     N/A     N/A
 N/A      N/A     N/A     N/A     N/A     N/A     N/A
Dozer                     85.0    81.0        N/A     N/A     N/A     N/A     N/A
 N/A      N/A     N/A     N/A     N/A     N/A     N/A
Tractor                   84.0    80.0        N/A     N/A     N/A     N/A     N/A
 N/A      N/A     N/A     N/A     N/A     N/A     N/A
               Total      85.0    86.8        N/A     N/A     N/A     N/A     N/A
 N/A      N/A     N/A     N/A     N/A     N/A     N/A
```

```
                        Roadway Construction Noise Model (RCNM),Version 1.1

Report date:             01/30/2023
Case Description:        Stone Column Construction

                                **** Receptor #1 ****

                                           Baselines (dBA)
Description                  Land Use        Daytime    Evening    Night
-----------                  --------        -------    -------    -----
Stone Column Construction    Residential        55.0       50.0     50.0

                                     Equipment
                                     ---------
                                    Spec    Actual    Receptor    Estimated
                   Impact  Usage    Lmax    Lmax      Distance    Shielding
Description        Device   (%)     (dBA)   (dBA)      (feet)       (dBA)
-----------        ------  -----    -----   -----     --------    ---------
Auger Drill Rig        No     20     85.0                 50.0          0.0


                                     Results
                                     -------
                                                            Noise Limits (dBA)
                   Noise Limit Exceedance (dBA)

----------------------------------------------
----------------------------------------------
                        Calculated (dBA)         Day          Evening
Night              Day           Evening          Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq        Lmax    Leq     Lmax    Leq     Lmax
 Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------  ------
------    ------  ------  ------  ------  ------  ------
Auger Drill Rig           85.0    78.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      85.0    78.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
```

```
                        Roadway Construction Noise Model (RCNM),Version 1.1

Report date:             12/23/2022
Case Description:        Building Construction

                                **** Receptor #1 ****

                                           Baselines (dBA)
Description              Land Use        Daytime    Evening    Night
-----------              --------        -------    -------    -----
Building Construction    Residential        55.0       50.0     50.0

                                     Equipment
                                     ---------
                                   Spec    Actual    Receptor    Estimated
                  Impact  Usage    Lmax    Lmax      Distance    Shielding
Description       Device   (%)     (dBA)   (dBA)      (feet)       (dBA)
-----------       ------  -----    -----   -----     --------    ---------
Crane                 No     16     85.0                  50.0          0.0
Man Lift              No     20     85.0                  50.0          0.0
Generator             No     50     82.0                  50.0          0.0
Tractor               No     40     84.0                  50.0          0.0
Welder / Torch        No     40     73.0                  50.0          0.0


                                     Results
                                     -------
                                                            Noise Limits (dBA)
                   Noise Limit Exceedance (dBA)

----------------------------------------------
----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night                Day           Evening          Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq         Lmax    Leq      Lmax    Leq      Lmax
 Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------  ------
------    ------  ------  ------  ------  ------  ------
Crane                     85.0    77.0         N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Man Lift                  85.0    78.0         N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Generator                 82.0    79.0         N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Tractor                   84.0    80.0         N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Welder / Torch            73.0    69.0         N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
```

Total	85.0	84.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

```
                        Roadway Construction Noise Model (RCNM),Version 1.1

Report date:             12/23/2022
Case Description:        Paving

                                **** Receptor #1 ****

                                           Baselines (dBA)
Description    Land Use        Daytime    Evening    Night
-----------    --------        -------    -------    -----
Paving         Residential        55.0       50.0     50.0

                                     Equipment
                                     ---------
                                         Spec    Actual    Receptor    Estimated
                        Impact  Usage    Lmax    Lmax      Distance    Shielding
Description             Device   (%)     (dBA)   (dBA)      (feet)       (dBA)
-----------             ------  -----    -----   -----     --------    ----------
Concrete Mixer Truck        No     40     85.0                 50.0           0.0
Paver                       No     50     85.0                 50.0           0.0
Roller                      No     20     85.0                 50.0           0.0
Tractor                     No     40     84.0                 50.0           0.0


                                     Results
                                     -------
                                                            Noise Limits (dBA)
                   Noise Limit Exceedance (dBA)

----------------------------------------------
----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night              Day           Evening          Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq        Lmax    Leq     Lmax    Leq     Lmax
 Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------  ------
------    ------  ------  ------  ------  ------  ------
Concrete Mixer Truck      85.0    81.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Paver                     85.0    82.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Roller                    85.0    78.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Tractor                   84.0    80.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      85.0    86.5        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
```

```
                        Roadway Construction Noise Model (RCNM),Version 1.1

Report date:             12/23/2022
Case Description:        Architectural Coating

                                **** Receptor #1 ****

                                           Baselines (dBA)
Description              Land Use        Daytime    Evening    Night
-----------              --------        -------    -------    -----
Architectural Coating    Residential        55.0       50.0     50.0

                                     Equipment
                                     ---------
                                     Spec    Actual    Receptor    Estimated
                    Impact  Usage    Lmax    Lmax      Distance    Shielding
Description         Device   (%)     (dBA)   (dBA)      (feet)       (dBA)
-----------         ------  -----    -----   -----     --------    ---------
Compressor (air)        No     40     80.0                 50.0          0.0


                                     Results
                                     -------
                                                            Noise Limits (dBA)
                   Noise Limit Exceedance (dBA)

----------------------------------------------
----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night              Day           Evening          Night
                        ----------------   --------------   -------------

--------------    --------------  --------------  --------------
Equipment                  Lmax    Leq        Lmax    Leq     Lmax    Leq     Lmax
 Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------  ------
------    ------  ------  ------  ------  ------  ------
Compressor (air)          80.0    76.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      80.0    76.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
```

```
                        Roadway Construction Noise Model (RCNM),Version 1.1

Report date:             01/30/2023
Case Description:        Pipeline Construction

                                **** Receptor #1 ****

                                           Baselines (dBA)
Description              Land Use        Daytime    Evening    Night
-----------              --------        -------    -------    -----
Pipeline Construction    Residential        55.0       50.0     50.0

                                     Equipment
                                     ---------
                                       Spec    Actual    Receptor    Estimated
                      Impact  Usage    Lmax    Lmax      Distance    Shielding
Description           Device   (%)     (dBA)   (dBA)      (feet)       (dBA)
-----------           ------  -----    -----   -----     --------    ---------
Tractor                   No     40     84.0                 50.0          0.0
Excavator                 No     40     85.0                 50.0          0.0
Tractor                   No     40     84.0                 50.0          0.0
Excavator                 No     40     85.0                 50.0          0.0
Roller                    No     20     85.0                 50.0          0.0
Front End Loader          No     40     80.0                 50.0          0.0
Scraper                   No     40     85.0                 50.0          0.0
Backhoe                   No     40     80.0                 50.0          0.0
Compressor (air)          No     40     80.0                 50.0          0.0
Generator                 No     50     82.0                 50.0          0.0
Grader                    No     40     85.0                 50.0          0.0
Compactor (ground)        No     20     80.0                 50.0          0.0
Pumps                     No     50     77.0                 50.0          0.0
Man Lift                  No     20     85.0                 50.0          0.0
Scraper                   No     40     85.0                 50.0          0.0
Backhoe                   No     40     80.0                 50.0          0.0
Paver                     No     50     85.0                 50.0          0.0
Roller                    No     20     85.0                 50.0          0.0
Backhoe                   No     40     80.0                 50.0          0.0


                                     Results
                                     -------
                                                            Noise Limits (dBA)
                   Noise Limit Exceedance (dBA)

----------------------------------------------
----------------------------------------------
                        Calculated (dBA)         Day           Evening
Night              Day           Evening          Night
                        ----------------   --------------   -------------
--------------    --------------  --------------  --------------
```

```
Equipment                  Lmax    Leq        Lmax    Leq     Lmax    Leq     Lmax
 Leq       Lmax    Leq     Lmax    Leq     Lmax    Leq
----------------------  ------  ------     ------  ------  ------  ------  ------
------    ------  ------  ------  ------  ------  ------
Tractor                   84.0    80.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Excavator                 85.0    81.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Tractor                   84.0    80.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Excavator                 85.0    81.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Roller                    85.0    78.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Front End Loader          80.0    76.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Scraper                   85.0    81.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Backhoe                   80.0    76.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Compressor (air)          80.0    76.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Generator                 82.0    79.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Grader                    85.0    81.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Compactor (ground)        80.0    73.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Pumps                     77.0    74.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Man Lift                  85.0    78.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Scraper                   85.0    81.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Backhoe                   80.0    76.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Paver                     85.0    82.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Roller                    85.0    78.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
Backhoe                   80.0    76.0        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
               Total      85.0    91.8        N/A     N/A     N/A     N/A     N/A
 N/A       N/A     N/A     N/A     N/A     N/A     N/A
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South Oxnard Aquatics Center Project

Construction Noise Attenuation

	Noise Level @ 50 ft	College Park - West	SF Residential - North	Residential Area - East	Oxnard College - South	Channel Islands HS - NW
Distance (feet)		290	835	1040	845	1700
Site Preparation	**84**	**68.731**	**59.546**	**57.639**	**59.442**	**53.370**
Grading	**87**	**71.731**	**62.546**	**60.639**	**62.442**	**56.370**
Stone Column Construction	**78**	**62.731**	**53.546**	**51.639**	**53.442**	**47.370**

	Noise Level @ 50 ft	College Park - West	SF Residential - North	Residential Area - East	Oxnard College - South	Channel Islands HS - NW
Distance (feet)		125	780	1005	735	1500
Building Construction	**85**	**77.041**	**61.138**	**58.936**	**61.654**	**55.458**
Architectural Coating	**76**	**68.041**	**52.138**	**49.936**	**52.654**	**46.458**

Paving	Noise Level @ 50 ft	College Park - West	SF Residential - North	Residential Area - East	Oxnard College - South	Channel Islands HS - NW
Distance (feet)		300	665	1045	1025	1725
Paving	**87**	**71.437**	**64.523**	**60.597**	**60.765**	**56.244**

Pipeline Construction	Noise Level @ 50 ft	College Park - West	SF Residential - North	Residential Area - East	Oxnard College - South	Channel Islands HS - NW
Distance (feet)		195	1550	1900	800	790
Pipeline Construction	**92**	**80.179**	**62.173**	**60.404**	**67.918**	**68.027**